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**Determination of VOC, Ethanol, and Acetaldehyde  
Emissions from Commercial Bakeries**

Site 3 Test Report

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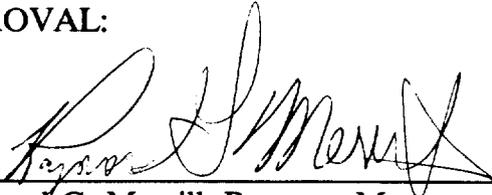
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## Radian Report Certification

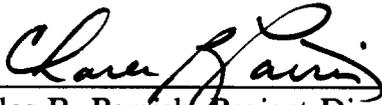
This report has been reviewed by the following Radian personnel and is a true representation of the results obtained from the sampling program conducted at four commercial bakeries on behalf of the U.S. Environmental Protection Agency. The testing was conducted from May through July, 1992, except where noted, sampling and analytical methods were performed in accordance with U.S. EPA reference procedures.

### APPROVAL:



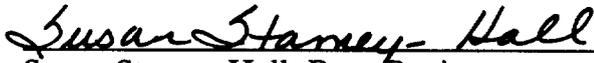
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## 1.0

### EXECUTIVE SUMMARY

Radian was contracted by The U.S. Environmental Protection Agency, Emissions Measurement Branch, to conduct Volatile Organic Compound (VOC) emissions testing at four commercial bakeries. This test report will present the results from the Site 3 test program. Tests were conducted on a variety of bakery ovens while baking different product types. The test procedures used were the U.S. EPA Stationary Source Testing Method 25A for VOCs and Method 18 for methane, ethanol and acetaldehyde determinations. Method 25A was used to quantify total hydrocarbons (THC). Method 18 was employed to quantify methane and two of the most prevalent VOC compounds (acetaldehyde and ethanol) in the bakery emission stream. Flow rates were measured using U.S. EPA Methods 1-4 and were used to calculate emission rates of the above gas stream components.

As a part of the test program, process conditions were monitored by a separate U.S. EPA contractor. Research Triangle Institute (RTI) monitored parameters such as product type, production rates, yeast concentration, proofing time and others. This report will only present the emissions data collected by Radian and will not include any process information. A separate report completed by RTI will incorporate the emission values presented in this report with the specific bakery process information.

Two sets of emission data were calculated. The first set presents VOC as ethanol emissions calculated using the Method 25A and Method 18 methane test results. (Ethanol concentrations typically made up over 98% of the total ethanol and acetaldehyde concentrations). The second data set presents emission rates of ethanol and acetaldehyde calculated from the Method 25A and the Method 18 ethanol and acetaldehyde test results.

VOC as ethanol emissions were determined by first averaging concentrations of THC over the respective test period. Non-methane hydrocarbon

concentrations were then determined by removing the methane concentration from the THC values. VOC as ethanol concentrations were determined by dividing the non-methane hydrocarbon concentration by the ethanol carbon equivalent correction factor (CECF). The CECF was empirically determined during and following the test program. The VOC as ethanol concentrations were then multiplied by the respective stack gas flow rates to determine VOC as ethanol emission rates.

Separate emissions rates of ethanol and acetaldehyde were calculated using both the Method 25A THC and Method 18 test results. The average ethanol-to-THC ratio was multiplied times the average THC concentration to determine an average ethanol concentration and formulate a larger averaging data base within the testing time period. Average acetaldehyde concentrations were calculated in the same manner. This procedure assumed that the proportion of ethanol to THC and acetaldehyde to THC remained constant throughout the test period. This assumption did not prove always to be true; however, concentrations determined in this manner were very similar to concentrations determined by averaging the Method 18 results alone. Results from both calculation methods are presented. Ethanol and acetaldehyde emission rates were then calculated by multiplying the average concentrations by the stack gas flow rates.

### **1.1 VOC as Ethanol Emissions**

Site 3 emissions ranged from 3.4 - 4.7 lbs/hr from the Bun oven to 7.5 - 16.5 lbs/hr for the bread oven. A complete listing of all test results is given in Section 3.0 and in the attached Appendices.

### **1.2 Ethanol and Acetaldehyde Emissions**

The Site 3 ethanol emissions ranged from 3.3 - 4.3 lbs/hr for the Bun oven and 4.9 - 16.0 lbs/hr for the Bread oven. The corresponding acetaldehyde rates were 0.21 - 0.26 lbs/hr for the Bun oven and 0.29 - 0.37 lbs/hr for the Bread oven.

### 1.3 Data Quality Assurance

The majority of reference method QA acceptance criteria were met during this test program. There were 10 days of testing using two THC monitoring systems. Method 25A daily calibration drift did not exceed the criterion of  $\pm 3\%$  on either of the Site 3 test days. Over 150 Method 25A calibration error checks were performed during the test program. The majority of these calibration error checks met the Method 25A criterion of  $\pm 5\%$  of the gas concentration. Method 25A sample bias checks, as well as O<sub>2</sub> leak checks were also completed.

Method 18 QA/QC procedures were also followed. Initial and final calibrations were performed. Calibrations for ethanol and acetaldehyde were all completed using 3 to 5 calibration points. Multi-point calibrations were also performed on methane for low concentrations on all of the test days ( $< 900$  ppmC). On both Site 3 test days, a single point calibration was used on higher methane values. This procedure was not expected to effect data quality.

Sample bias checks were routinely conducted on the Method 18 sampling system and the majority verified acceptable non-biased sampling. However, some checks revealed sample bias caused by the loss of heat in the heated sample tubing adjacent to the gas chromatograph (GC). These data points were invalid and testing was discontinued until the problem was remedied and a successful bias check had been completed. More is discussed on this matter in Section 6.0.

### 1.4 Recommendations for Further Work

Further work is recommended to further characterize bakery emissions and to improve the test method. Compounds other than ethanol and acetaldehyde were not detected by the Method 18 analyses. However, trace ( $< 10$  ppmv) levels of other

compounds may be present in the bakery stream and although these compounds would not be expected to increase VOC emission rates, it would be interesting to identify them.

Another area which could be further examined is the comparison of Method 18 GC results to the Method 25A THC results. It was expected that the concentration of THC detected by the Method 25A analyzer would exceed the concentrations of the three targeted VOC compounds. However, throughout this test program, a higher concentration of compounds was determined by the GC than by the THC monitor. Comparisons were made by first correcting concentrations of each compound determined from the GC analysis from parts per million by volume (ppmv) to ppmv as Carbon (ppmC). This was done using the previously mentioned CECF of 1.42 for ethanol, 1.23 for acetaldehyde, and 1 for methane. The sum of the three corrected GC concentrations were then divided by the THC concentration. Typically, comparisons resulted in values of 120-140% of GC vs THC values. This error may be a result of inaccuracy in the CECF as it was applied to the sample gas matrix. Matrix effects may have somehow lowered the THC response (CECF) for ethanol as compared to the ethanol response in a dry, nitrogen calibration gas. Further work examining this Method 18 and Method 25A results comparison could be examined.

## 2.0 INTRODUCTION

### 2.1 Overview

The U.S. Environmental Protection Agency (U.S. EPA) has been requested to develop an alternative control technique (ACT) guidance document for controlling Volatile Organic Carbon (VOC) emissions from commercial baking operations. Interest has also been expressed in recalculating the AP-42<sup>1</sup> emission factors for bakery VOC emissions. Ethanol (C<sub>2</sub>H<sub>5</sub>OH) is the primary pollutant emitted from commercial bakeries.<sup>2</sup> Ethanol along with Carbon Dioxide (CO<sub>2</sub>) is produced during the yeast metabolic process. Previous test data from bakeries has also revealed the presence of acetaldehyde (CH<sub>3</sub>CHO).<sup>2</sup> Therefore, in conjunction with the development of an ACT document and new AP-42 emission factors, the U.S. EPA has contracted Radian Corporation to perform emissions testing of several commercial bakeries in order to gather the necessary background emissions data. This report will present the results of the U.S. EPA Bakeries test program for Site 3.

The test procedures used were the U.S. EPA Stationary Source Testing Method 25A for VOCs and Method 18 for methane, ethanol and acetaldehyde determinations. Method 25A was used to quantify total hydrocarbons (THC). Method 18 was employed to quantify methane and two of the most prevalent VOC compounds (acetaldehyde and ethanol) in the bakery emission stream. By combining both procedures, the VOC emissions were fully characterized.

As a part of this data gathering phase, U.S. EPA contracted Research Triangle Institute (RTI) to monitor the baking process parameters during the emissions

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<sup>1</sup>Compilation of Air Pollutant Emission Factors, Section 6.13, U.S. EPA (1972).

<sup>2</sup>Background Documentation for AP-42, Section 6.13, Bakeries, PES for U.S. EPA (1972).

tests. Items such as dough mixing process, fermentation (proofing) time, yeast concentration, production rates and others were monitored. However, this report will only present emissions data, that will be used with the process and production rate data to develop emission factors that will be presented in a separate document.

## **2.2 Test Objectives**

The objectives of this test program was to determine VOC emission rates as well as ethanol and acetaldehyde emission rates. The data could then be used to determine of which air pollution control techniques would be effective for the bakery industry. As discussed above, it was also desirable to correlate the emissions data with process data to update and/or verify the emission factors for commercial bakeries.

## **2.3 Test Methods**

Because each oven had at least two stacks, concentrations of THC were continuously and simultaneously monitored on each stack using two THC continuous emissions monitoring systems (CEMS). The THC data was typically recorded on every 10 seconds a computer disk. The resulting THC data were then averaged over each period of time corresponding to a distinct segment of the process operation (i.e., 30 minute sandwich bread baking process). Methane, ethanol and acetaldehyde concentrations were measured semi-continuously using discrete analyses by a Gas Chromatograph/Flame Ionization Detector (GC/FID). One GC/FID analyzer was used for this test program. One analysis of methane, acetaldehyde, and ethanol could be completed every 10 minutes; therefore, a full oven characterization could be completed every 20 minutes (2 stacks per oven).

Method 25A and Method 18 required extracting a sample stream of the gas from the stack through a heated Teflon® tube. A portion of the sample was directed to a THC analyzer which quantified THC on a real-time basis by a Flame Ionization

Detector (FID). The THC analyzer processes unconditional gas samples; therefore, concentrations are characterized ppmv, on a wet basis. A portion of the remaining gas stream was directed to the Method 18 gas chromatograph. The GC column separated individual hydrocarbons which were quantified with the FID.

Gas flow rate was determined by using the U.S. EPA Method 2. This method called for measuring the velocity of the gas stream and by multiplying it by the stack cross-sectional area, a volumetric flow rate was determined. Method 2 also called for point location determination to be made by Method 1, CO<sub>2</sub> and O<sub>2</sub> concentrations by Method 3 and moisture content by Method 4.

#### **2.4            Data Reduction**

As previously discussed, two sets of emission data were calculated. The first set presents VOC as ethanol emissions calculated using the Method 25A and the Method 18 methane test results. The second data set presents emission rates of ethanol and acetaldehyde calculated from the Method 25A and the Method 18 ethanol and acetaldehyde test results. The data reduction methods used are summarized in the following paragraphs.

Method 25A requires THC data to be reported in units of parts per million as Carbon (ppmC). Preliminary THC concentrations in units of ppmv as the calibration compound (i.e., propane) are multiplied by that respective compound's carbon equivalent correction factor (CECF) to correct the units to ppmC. The CECF for methane, ethane and propane are 1, 2 and 3, respectively. For example, if the Method 25A monitor was calibrated with propane, all resulting concentrations would be multiplied by the propane CECF of 3 to correct the concentration from ppmv as propane to ppmC. The THC values can be converted to ppmv of the compound of interest if 1) the specific CECF is known, and 2) the compound proportion of THC is known. For this test program, the THC monitors were calibrated with methane which has a CECF of 1, so the resulting

THC data was already in units of ppmC. However, correcting the THC concentration to VOC as ethanol concentration did require dividing the average non-methane THC concentration by the ethanol CECF. This process assumed that the non-methane hydrocarbons were made up entirely of ethanol. The resulting VOC as ethanol concentrations were then multiplied by the stack gas flow rates in order to determine VOC as ethanol emission rates.

Ethanol and acetaldehyde emissions were also calculated. Average ethanol and acetaldehyde concentrations were calculated by averaging the multiple Method 18 analytical results. However, only three Method 18 data points (per compound) were typically acquired per hour. In order to increase the number of data points in a given time period, the continuous Method 25A data was also used. An average ethanol-to-THC proportion from the above three analyses was calculated and then multiplied by the average THC value to calculate an average ethanol concentration. This method assumes that the ethanol-to-THC proportion is constant throughout the test run. Acetaldehyde calculations were performed in the same manner.

All data reduction procedures are fully explained in Section 7.0

## **2.5 Report Organization**

A summary of the test results is presented in Section 3, a description of typical Oven Configurations and Sampling Locations is given in Section 4, and Sampling and Analytical Procedures are discussed in Section 5. Quality Assurance (QA) is presented in Section 6, and Data Reduction Procedures in Section 7. All field data and supporting calculations are included in the Appendices.

### **3.0 EMISSIONS RESULTS SUMMARY**

This section will present the final results for the U.S. EPA Bakery Site 3 emissions test program. All raw data and calculations are included in the Appendices.

#### **3.1 Test Program Summary**

Four test sites were tested using Method 25A for THC determinations and Method 18 for methane, ethane, ethanol and acetaldehyde concentrations determinations. One of the test objectives was to quantify the VOC emissions which represent only the photochemically reactive volatile organic compounds. Non-reactive compounds such as methane and ethane are subtracted from the THC concentrations for determining VOC concentrations. The VOC concentrations and emissions for this test report were calculated by assuming that all of the non-methane hydrocarbons detected by the Method 25A tests were comprised of ethanol. This was consistently observed at all four test sites as ethanol concentrations determined from the Method 18 analyses typically made up over 98% of the total ethanol and acetaldehyde concentrations (target VOCs).

In Section 3, two sets of emissions data are given. The first data set presents emissions of VOC as ethanol as discussed above. The VOC concentration as ethanol was calculated by dividing the non-methane hydrocarbon concentration in units of ppmC by the ethanol THC Carbon Equivalent Correction Factor. The CECF was determined by observing the response of the THC analyzer to known concentrations of ethanol. The second data set presents emissions of ethanol and acetaldehyde emissions determined from the Method 18 ethanol and acetaldehyde results and the THC results. Emissions were calculated by multiplying the respective stack gas concentrations by the stack gas flow rate by the methods discussed above. All calculations are shown in Section 7.0.

Methane concentrations were higher than expected during the test program which did not allow for the resolution of the ethane GC peak at three of the test sites. However, ethane concentrations were expected to be fairly low and so the error in determining VOC is expected to be minimal.

The emissions of both direct- and indirect-fired ovens were measured (see Section 4.1.2) while baking a variety of bakery products. Production rate is the most critical factor related to the quantity of bakery VOC emissions. However, as discussed in the previous section, no product information or process data will be given in this report. The general category of ovens tested will be identified, differentiating direct-fired from indirect-fired and bread from bun ovens.

Thirty test runs were conducted for a typical sample period of 1 hour. Some of the runs were shorter than an hour due to the stoppage of the product being baked. Emissions was measured from only a single product at one time. Time periods when the ovens were in transient conditions, either from start up/shut down occurrences or from product changes or gaps in the product feed, were not included in the reported data base. However, all of the field data is included in the Appendices.

A general description of the commercial baking process and bakery ovens along with the types of ovens tested at each test site is given in Section 4. A total of two or three stacks were tested simultaneously from each oven. The total oven emissions were calculated by totaling the emissions from each of the stacks. Emissions from comfort hood stacks (see Figure 4-1) were not originally intended to be tested. However, it was noticed during the Site 2 test program that these emissions represented a significant portion of the total oven emission rates and from that point on, comfort hood emissions were tested.

### **3.2            Site 3 Test Results**

A small bun oven and another small oven designated for baking bread were tested at Site 3. The bun oven was identified as indirect-fired with three stacks. Two of the three stacks were designated for the two burners and the third (exhauster) stack vented oven gases. During normal operation, the main flow damper on this oven was closed and only 50-100 acfm of stack gas flow was present during testing. The tests were conducted with one sampling/THC analytical system on the exhauster stack and alternating the other sample/THC system from "Burner 1" and "Burner 2".

### **3.2.1 Site 3 Test Log**

Nine emissions test runs were conducted on June 22 and 24, 1992. Runs 13, 14, and 18 were conducted on the Bun oven. Runs 15-17 and 19-21 were conducted on the Bread oven. Table 3-1 presents a summary of the Site 3 sampling activities.

### **3.2.2 Site 3 VOC as Ethanol Emissions Test Results**

Table 3-2 presents the VOC as ethanol test results. The table presents THC concentrations (including methane) as well as VOC concentrations derived by removing the methane concentrations from the THC values (ppmC/wet). Concentrations of VOCs are also given in ppmv as ethanol, calculated as discussed above. Emission rates from each stack are calculated from the VOC as ethanol concentrations. The total oven VOC emissions are then calculated by totaling the emissions from both vent stacks.

### **3.2.3 Site 3 Ethanol and Acetaldehyde Emission Test Results**

Table 3-3 presents the emission rates and concentrations of ethanol and acetaldehyde and presents in two ways. The first method reports the ethanol concentration determined by averaging the results of the Method 18 analyses. The

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**Table 3-1**

**Site 3 Bakery VOC Emissions Test Log EPA Bakeries (1992)**

Run	Date	Sampling Time	Oven & Product Designation	Number of GC injections	
				Front	Rear
13	6/22/92	10:49-11:11	Bun I'	2	2
14	6/22/92	11:32-11:59	Bun I	2	1
15	6/22/92	12:03-13:31	Bread J	6	4
16	6/22/92	14:07-15:11	Bread K	4	3
17	6/22/92	15:46-16:42	Bread L	3	3
18	6/24/92	10:15-11:15	Bun M	4	3
19	6/24/92	11:42-12:10	Bread N	1	2
20	6/24/92	14:39-15:26	Bread K	3	2
21	6/24/92	16:01-17:08	Bread L	3	4

Table 3-2. VOC Emissions Assuming 100 % Ethanol  
EPA Bakeries, Site 3 (1992)

Run	Run 13			Run 14			Run 15	
	Exhauster	Burner 1	Burner 2	Exhauster	Burner 1	Burner 2	Oven	Burner
THC Conc. (ppmC/wet)	1422.7	1223.7	1051.8	1043.0	838.5	829.8	1878.2	946.2
<b>Methane Concentrations</b>								
Methane Conc. (ppmv/wet) <sup>1</sup>	2.3	12.1	8.0	0.5	NO GC	4.0	496.1	427.1
Methane/THC Ratio	0.002	0.009	0.007	0.0005	NO GC	0.005	0.244	0.529
Methane Conc. (ppmC/wet) <sup>2</sup>	2.845	11.01	7.363	0.522	0 <sup>a</sup>	4.149	458.3	500.5
<b>VOC Emissions</b>								
VOC Conc. (ppmC/wet) <sup>3</sup>	1419.9	1212.7	1044.4	1043.0	838.5	825.7	1419.9	445.7
VOC Conc. as Ethanol (ppmv/wet) <sup>4</sup>	999.9	854.0	735.5	734.5	590.5 <sup>a</sup>	581.4	999.9	313.8
VOC Emission Rate as Ethanol (lb/hr) <sup>4</sup>	0.24	2.07	2.26	0.18	1.43	1.78	11.55	1.13
Total VOC Emissions as Ethanol (lbs/hr) <sup>4</sup>	4.739			3.390			12.676	

1 Values calculated from average methane concentrations determined from multiple GC analyses.

2 Values calculated from average Methane to THC ratios (CH<sub>4</sub>/THC) incorporating both GC and THC analyses:

3 Methane Conc. = Avg (CH<sub>4</sub> / THC<sub>i</sub>) \* (Avg THC)

4 VOC Conc. = Avg (1 - CH<sub>4</sub> / THC<sub>i</sub>) \* (Avg THC)

4 VOC Conc. as Ethanol = (VOC Conc) / 1.42 VOC Emissions as Ethanol = (VOC Conc. as Ethanol) \* Flow; where 1.42 is the empirically derived carbon equivalent correction factor

a GC analyses was not performed for this location; therefore, the VOC concentration was assumed to be 100 % of the THC conc.

Table 3-2. VOC Emissions Assuming 100 % Ethanol, (cont.)  
EPA Bakeries, Site 3 (1992)

Run	Run 16		Run 17		Run 18		
	Oven	Burner	Oven	Burner	Exhauster	Burner 1	Burner 2
THC Conc. (ppmC/wet)	2323.2	951.9	2353.3	943.9	1221.6	939.7	924.4
<b>Methane Concentrations</b>							
Methane Conc. (ppmv/wet) <sup>1</sup>	506.9	1236.3	679.3	1656	1.7	5.2	6.8
Methane/THC Ratio	0.198	0.868	0.320	0.991	0.001	0.006	0.007
Methane Conc. (ppmC/wet) <sup>2</sup>	460.0	826.2	753.1	935.4	1.222	5.638	6.471
<b>VOC Emissions</b>							
VOC Conc. (ppmC/wet) <sup>3</sup>	1863.2	125.7	1600.2	8.5	1220.4	934.1	917.9
VOC Conc. as Ethanol (ppmv/wet) <sup>4</sup>	1312.1	88.5	1126.9	6.0	859.4	657.8	646.4
VOC Emission Rate as Ethanol (lb/hr) <sup>4</sup>	15.15	0.32	13.02	0.02	0.20	1.59	1.98
Total VOC Emissions as Ethanol (lbs/hr) <sup>4</sup>	15.473		13.038			3.782	

1 Values calculated from average methane concentrations determined from multiple GC analyses.

-- Values calculated from average Methane to THC ratios (CH4/THC) incorporating both GC and THC analyses:

2 Methane Conc. = Avg(CH4<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC)

3 VOC Conc. = Avg(1 - CH4<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC)

4 VOC Conc. as Ethanol = (VOC Conc) / 1.42 VOC Emissions as Ethanol = (VOC Conc. as Ethanol) \* Flow;  
where 1.42 is the empirically derived carbon equivalent correction factor

**Table 3-2. VOC Emissions Assuming 100 % Ethanol, (cont.)  
EPA Bakeries, Site 3 (1992)**

Run	Run 19		Run 20		Run 21	
	Oven	Burner	Oven	Burner	Oven	Burner
THC Conc. (ppmC/wet)	2027.6	1090.2	2513.6	966.2	2552.1	1002.1
<b>Methane Concentrations</b>						
Methane Conc. (ppmv/wet) <sup>1</sup>	1274.5	1875.0	515.3	1475.3	705.8	839.7
Methane/THC Ratio	0.566	1.638	0.206	1.106	0.271	0.735
Methane Conc. (ppmC/wet) <sup>2</sup>	1147.6	1785.7	517.8	1068.6	691.6	736.5
<b>VOC Emissions</b>						
VOC Conc. (ppmC/wet) <sup>3</sup>	880.0	-695.5	1995.8	-102.4	1860.5	265.6
VOC Conc. as Ethanol (ppmv/wet) <sup>4</sup>	619.7	88.5 <sup>a</sup>	1405.5	88.5 <sup>a</sup>	1310.2	187.0
VOC Emission Rate as Ethanol (lb/hr) <sup>4</sup>	7.16	0.32	16.23	0.32	15.13	0.67
Total VOC Emissions as Ethanol (lbs/hr) <sup>4</sup>	7.475 <sup>a</sup>		16.551 <sup>a</sup>		15.804	

<sup>1</sup> Values calculated from average methane concentrations determined from multiple GC analyses.

<sup>2</sup> Values calculated from average Methane to THC ratios (CH<sub>4</sub>/THC) incorporating both GC and THC analyses:

<sup>3</sup> Methane Conc. = Avg (CH<sub>4</sub> / THC<sub>i</sub>) \* (Avg THC)

<sup>4</sup> VOC Conc. = Avg (1 - CH<sub>4</sub> / THC<sub>i</sub>) \* (Avg THC)

<sup>5</sup> VOC Conc. as Ethanol = (VOC Conc) / 1.42 VOC Emissions as Ethanol = (VOC Conc. as Ethanol) \* Flow;

where 1.42 is the empirically derived carbon equivalent correction factor

<sup>a</sup> High methane results resulted in negative VOC concentrations; therefore, VOC conc. as Ethanol for these runs/rear stack, were assumed to be identical to Run 16, rear stack which was tested while baking an identical product.

**Table 3-3. Ethanol and Acetaldehyde Emissions Test Results  
EPA Bakeries, Site 3 (1992)**

Run	Run 13			Run 14			Run 15				
	Exhauster	Burner 1	Burner 2	Exhauster	Burner 1	Burner 2	Exhauster	Burner 1	Burner 2	Oven	Burner
THC Conc. (ppmC/wet)	1422.7	1223.7	1051.8	1043.0	838.5	829.8	1878.2	946.2			
<b>Ethanol Emissions</b>											
Ethanol Conc. (ppmv/wet) <sup>1</sup>	1281.9	840.6	680.5	853.9	573.6	573.6	832.7	71.6			
Ethanol Conc. (ppmv/wet) <sup>2</sup>	1298.9	807.6	671.0	852.1	562.6	556.8	820.8	90.8			
Ethanol/THC Ratio	0.913	0.66	0.638	0.817	0.671 <sup>a</sup>	0.671	0.437	0.096			
Ethanol Emission Rate (lb/hr) <sup>1</sup>	0.31	2.04	2.09	0.20	1.39	1.76	9.62	0.26			
Ethanol Emission Rate (lb/hr) <sup>2</sup>	0.31	1.96	2.06	0.20	1.36	1.71	9.48	0.33			
Total Ethanol Emission Rate (lbs/hr) <sup>2</sup>	4.325			3.275			9.806				
<b>Acetaldehyde Emissions</b>											
Acetaldehyde Conc. (ppmv/wet) <sup>1</sup>	25.30	70.6	34.50	18.47	40.7	40.7	23.20	5.10			
Acetaldehyde Conc. (ppmv/wet) <sup>2</sup>	25.61	67.79	33.97	18.46	40.00	39.58	22.54	23.94			
Acetaldehyde/THC Ratio	0.018	0.055	0.032	0.018	0.048	0.048	0.012	0.025			
Acetaldehyde Emission Rate (lb/hr) <sup>1</sup>	0.006	0.164	0.101	0.004	0.094	0.119	0.256	0.018			
Acetaldehyde Emission Rate (lb/hr) <sup>2</sup>	0.006	0.157	0.100	0.004	0.093	0.116	0.249	0.082			
Total Acetaldehyde Emission Rate (lbs/hr) <sup>2</sup>	0.263			0.213			0.331				

<sup>1</sup> Values calculated from average concentrations determined from multiple GC analyses.

<sup>2</sup> Values calculated from average Ethanol/THC and Acetaldehyde/THC ratios (ETOH/THC and AA/THC) incorporating

both GC and THC analyses: ETOH Conc. = Avg (ETOH<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); ETOH Emissions = (Avg ETOH Conc.) \* Flow

AA Conc. = Avg (AA<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); AA Emissions = (Avg AA Conc.) \* Flow

<sup>a</sup> Assumed value taken from similar location.

**Table 3-3. Ethanol and Acetaldehyde Emissions Test Results (cont.)  
EPA Bakeries, Site 3 (1992)**

Run Stack Location	Run 16		Run 17		Run 18		
	Oven	Burner	Oven	Burner	Exhauster	Burner 1	Burner 2
THC Conc. (ppmC/wet)	2323.2	951.9	2353.3	943.9	1221.6	939.7	924.4
<b>Ethanol Emissions</b>							
Ethanol Conc. (ppmv/wet) <sup>1</sup>	1105.7	86	997	82.7	954.8	811	595.6
Ethanol Conc. (ppmv/wet) <sup>2</sup>	971.1	56.8	1061.3	53.8	984.6	796.9	594.4
Ethanol/THC Ratio	0.418	0.060	0.451	0.057	0.806	0.848	0.643
Ethanol Emission Rate (lb/hr) <sup>1</sup>	12.77	0.31	11.52	0.30	0.23	1.96	1.83
Ethanol Emission Rate (lb/hr) <sup>2</sup>	11.22	0.20	12.26	0.19	0.23	1.93	1.82
Total Ethanol Emission Rate (lbs/hr) <sup>2</sup>	11.420		12.452			3.989	
<b>Acetaldehyde Emissions</b>							
Acetaldehyde Conc. (ppmv/wet) <sup>1</sup>	31.40	6.98	22.50	5.55	20.10	35.4	50.00
Acetaldehyde Conc. (ppmv/wet) <sup>2</sup>	31.60	5.14	26.12	7.36	20.77	36.74	50.84
Acetaldehyde/THC Ratio	0.014	0.005	0.011	0.008	0.017	0.039	0.055
Acetaldehyde Emission Rate (lb/hr) <sup>1</sup>	0.347	0.024	0.249	0.019	0.005	0.082	0.147
Acetaldehyde Emission Rate (lb/hr) <sup>2</sup>	0.349	0.018	0.289	0.025	0.005	0.085	0.149
Total Acetaldehyde Emission Rate (lbs/hr) <sup>2</sup>	0.367		0.314			0.239	

<sup>1</sup> Values calculated from average concentrations determined from multiple GC analyses.

<sup>2</sup> Values calculated from average Ethanol/THC and Acetaldehyde/THC ratios (ETOH/THC and AA/THC) incorporating both GC and THC analyses: ETOH Conc. = Avg (ETOH<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); ETOH Emissions = (Avg ETOH Conc.) \* Flow  
AA Conc. = Avg (AA<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); AA Emissions = (Avg AA Conc.) \* Flow

**Table 3-3. Ethanol and Acetaldehyde Emissions Test Results (cont.)  
EPA Bakeries, Site 2 (1992)**

Run Stack Location	Run 19		Run 20		Run 21	
	Oven	Burner	Oven	Burner	Oven	Burner
THC Conc. (ppmC/wet)	2027.6	1090.2	2513.6	966.2	2552.1	1002.1
<b>Ethanol Emissions</b>						
Ethanol Conc. (ppmv/wet) <sup>1</sup>	460.5	46.2	S	1609	S	229.4
Ethanol Conc. (ppmv/wet) <sup>2</sup>	411.6	37.2	1383.2 <sup>a</sup>	123.7	1297.8 <sup>a</sup>	183.4
Ethanol/THC Ratio	0.203	0.0341	S	0.128	S	0.183
Ethanol Emission Rate (lb/hr) <sup>1</sup>	5.32	0.17	S	5.78	S	0.82
Ethanol Emission Rate (lb/hr) <sup>2</sup>	4.75	0.13	15.98	0.44	14.99	0.66
Total Ethanol Emission Rate (lbs/hr) <sup>2</sup>	4.887		15.976 <sup>a</sup>		14.990 <sup>a</sup>	
<b>Acetaldehyde Emissions</b>						
Acetaldehyde Conc. (ppmv/wet) <sup>1</sup>	28.40	3.52	25.7	4.20	14.3	14.30
Acetaldehyde Conc. (ppmv/wet) <sup>2</sup>	25.35	3.38	25.64	4.73	29.35	11.52
Acetaldehyde/THC Ratio	0.013	0.003	0.010	0.005	0.012	0.012
Acetaldehyde Emission Rate (lb/hr) <sup>1</sup>	0.314	0.012	0.284	0.014	0.158	0.049
Acetaldehyde Emission Rate (lb/hr) <sup>2</sup>	0.280	0.012	0.283	0.016	0.324	0.040
Total Acetaldehyde Emission Rate (lbs/hr) <sup>2</sup>	0.292		0.300		0.364	

<sup>1</sup> Values calculated from average concentrations determined from multiple GC analyses.

<sup>2</sup> Values calculated from average Ethanol/THC and Acetaldehyde/THC ratios (ETOH/THC and AA/THC) incorporating both GC and THC analyses: ETOH Conc. = Avg(ETOH<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); AA Conc. = Avg(AA<sub>i</sub>/THC<sub>i</sub>) \* (Avg THC); ETOH Emissions = (Avg ETOH Conc.) \* F  
AA Emissions = (Avg AA Conc.) \* Flow

S = Suspect GC Analysis

<sup>a</sup> due to the invalidated ethanol GC results, this value was calculated as follows: {(VOC Conc.) - (AA Conc \* 1.23)} / 1.42 where 1.23 and 1.42 are the carbon equivalent correction factors for AA:CH4 and Ethanol:CH4, respectively.

second method multiplies the average ethanol-to-THC ratio by the average THC value to determine average ethanol concentrations. The second method assumes a constant ethanol-to-THC proportion and by using the continuous THC data base (THC values every minute), incorporates a much larger data base for averaging. Ethanol emissions are calculated from concentrations determined by both methods. However, the total oven emissions were determined from concentrations using the THC data. Acetaldehyde values were calculated similarly. All data reduction procedures is given in Section 7.

### 3.2.4 Site 3 Method 25A and Method 18 Results

This section presents the results from the Method 18 analyses. The Method 25A THC concentrations are given for same time period that the GC injections were made. Typically, three injections were made during a test run at a specific sample location. The concentrations were then averaged. Some GC injections were made that did not fall into the test run time-frame. Results from these analyses are presented in the tables but are not included in the averages. Ethanol-to-THC and acetaldehyde-to-THC ratios were calculated for each injection as well. The ethanol and acetaldehyde values were not corrected to ppmC for this calculation; therefore, these values cannot be considered volumetric proportions of the THC stream. Their purpose was to be multiplied by the average THC value to calculate average methane, ethanol, and acetaldehyde concentrations. This allowed ethanol and acetaldehyde concentrations to be calculated without incorporating the additional methane analysis.

Finally, a comparison of the total concentration of the three target compounds detected by the GC was made with the THC values for each discrete injection. This parameter is not required by the reference method QA procedures, but it was originally thought to be an indication what proportion of THC the three target compounds represented. It was expected that the sum of the GC concentrations would be somewhat lower than the total THC concentration taking into account trace concentrations of organics in the gas stream that were not detected by the GC analyses.

However, this comparison may not be sufficiently accurate. The average ratio is calculated as follows:

$$\left( \frac{\overline{\text{GC}}}{\overline{\text{THC}}} \right) = \frac{\sum_{i=1}^N \frac{\text{GC}_i}{\text{THC}_i}}{N} \times 100$$

where:

- $\text{THC}_i$  = THC concentrations determined from the Method 25A monitor at the same time as the GC injection (ppmC)  
 $N$  = Number of GC injectors in the time period.

The units from the GC analyses have to be corrected to the same units as the THC concentrations (ppmC) as follows:

$$\text{GC}_i = \left( \frac{[\text{ETOH}]_i}{1.42} + \frac{[\text{AA}]_i}{1.23} + [\text{CH}_4]_i \right)$$

where:

- $[\text{ETOH}]_i$  = Ethanol concentration determined from a single GC analysis (ppmv/wet)  
 1.42 = Ethanol THC Carbon Equivalent Correction Factor (empirically derived)  
 $[\text{AA}]_i$  = Acetaldehyde concentration determined from a single GC analysis (ppmv/wet)  
 1.23 = Acetaldehyde THC Carbon Equivalent Correction Factor (empirically derived)  
 $[\text{CH}_4]_i$  = Methane concentration determined from a single GC analysis (ppmv/wet).

NOTE: The methane CECF is 1.0.

The CECFs used for this test program were determined by challenging the THC analyzer with known, certified concentrations of ethanol and acetaldehyde and recording the response. For example, if a 200 ppmv ethanol gas standard responded as 300 ppmC THC, then the ethanol CECF was 1.5. The CECFs were determined over the entire range of concentrations observed during the test program. It is difficult to predict whether the THC analyzer responded to the ethanol in the bakery sample gas matrix the same (quantitatively) as to ethanol in a clean, dry calibration gas. Both sample gas moisture levels and O<sub>2</sub> levels were different than the calibration gas matrix (dry, N<sub>2</sub> balance). The unexpected high GC/THC ratios (> 100%) may have resulted from a variability in the actual sample CECF.

Tables 3-4 and 3-5 present the Method 25A and Method 18 analytical results from the oven stacks and burner stacks, respectively.

The Site 3 Method 25A and Method 18 results are presented graphically for Runs 13-21 in Figures 3-1 through 3-9, respectively. Method 18 concentrations have been corrected to ppmC for these plots.

### **3.2.5 Site 3 Stack Gas Flow Rates**

Table 3-6 present the stack gas flow rates determined for the Site 2 oven stacks. Flows were not corrected to a dry basis since Method 25A and 18 concentrations were determined on a wet basis and emissions calculations required both flows and concentrations be consistently on the same basis (wet or dry). Moisture content values are included in the Appendix.

Table 3-4. Method 25A and Method 18 Emissions Tests Results, Front (Oven) Stacks, EPA Bakeries, Site 3 (1992)

FRONT/OVEN STACK									
RUN	TIME	METHOD 25A THC RESULTS <sup>a</sup> (ppmC/wet)	METHOD 18 GC RESULTS			GC/THC RATIO <sup>b</sup> (%)	THC PROPORTIONS <sup>c</sup>		
			ETHANOL (ppmv/wet)	METHANE (ppmv/wet)	ACET-ALDEHYDE (ppmv/wet)		ETH/THC RATIO	CH4/THC RATIO	AA/THC RATIO
13	10:58:08	1404.4	1281.9	2.31	25.3	132.0	0.913	0.002	0.018
<b>13</b>	<b>AVG</b>	<b>1422.7</b>	<b>1281.9</b>	<b>2.3</b>	<b>25.3</b>	<b>132.0</b>	<b>0.913</b>	<b>0.002</b>	<b>0.018</b>
NA	11:16:38	386.2	388.9	0.83	8.82	146.0	1.007	0.002	0.023
14	11:36:38	1036.9	854.3	0.46	18.11	119.2	0.824	0.000	0.017
14	11:54:38	1054.3	853.4	0.58	18.83	117.2	0.809	0.001	0.018
<b>14</b>	<b>AVG</b>	<b>1028.5</b>	<b>853.9</b>	<b>0.5</b>	<b>18.5</b>	<b>118.2</b>	<b>0.817</b>	<b>0.00050</b>	<b>0.018</b>
15	12:03:38	1683.4	670.2	660.8	10.8	96.6	0.398	0.393	0.006
15	12:21:25	1413.4	752.2	180.4	22.4	90.3	0.532	0.128	0.016
15	12:40:25	2547.6	1246.1	655.3	33.1	96.8	0.489	0.257	0.013
15	12:58:25	2286.5	851.95	740.3	25.4	86.7	0.373	0.324	0.011
15	13:07:55	1655.8	935.5	23.3	22.93	83.3	0.565	0.014	0.014
15	13:25:55	2040.4	540.2	716.3	24.37	74.2	0.265	0.351	0.012
<b>15</b>	<b>AVG</b>	<b>1878.2</b>	<b>832.7</b>	<b>486.1</b>	<b>23.2</b>	<b>88.0</b>	<b>0.437</b>	<b>0.244</b>	<b>0.012</b>
16	14:14:27	2248.0	1285.4	567	30	108.1	0.572	0.207	0.013
16	14:32:27	2133.1	1362.7	375.6	32.1	110.2	0.639	0.176	0.015
16	14:50:27	2250.4	1029.9	578	32.2	92.4	0.458	0.211	0.014
<b>16</b>	<b>AVG</b>	<b>2323.2</b>	<b>1226.0</b>	<b>506.9</b>	<b>31.4</b>	<b>103.6</b>	<b>0.556</b>	<b>0.198</b>	<b>0.014</b>
NA	15:27:27	1104.5	132.95	900	7.71	99.4	0.120	0.671	0.007
17	15:45:27	1787.4	577	700	19.69	86.4	0.323	0.392	0.011
17	16:03:27	2381.8	1067	742	29	96.3	0.448	0.312	0.012
17	16:21:57	2310.3	1348	596	33.4	110.4	0.583	0.258	0.014
<b>17</b>	<b>AVG</b>	<b>2353.3</b>	<b>997.3</b>	<b>679.3</b>	<b>27.4</b>	<b>97.7</b>	<b>0.451</b>	<b>0.320</b>	<b>0.013</b>

<sup>a</sup> THC averages calculated from the full CEM data base (not just the above entries)

<sup>b</sup> GC/THC RATIO = (ETHOH/1.42+AA/1.23+CH4)/THC \* 100 where: 1.42 = Ethanol CECF, 1.23 = Acetaldehyde CECF

<sup>c</sup> THC proportions were calculated as: ETH/THC = ppmv ethanol/ppmC THC, CH4/THC = ppmv CH4/ ppmC THC, AA/THC = ppmv acetaldehyde/ ppmC THC

NA = Not Applicable. Values were not used in the run averages.

Table 3-4. Method 25A and Method 18 Emissions Tests Results (cont), Front (Oven) Stacks, EPA Bakeries, Site 3 (1992).

FRONT/OVEN STACK										
RUN	TIME	METHOD 25A THC RESULTS <sup>a</sup> (ppmC/wet)	METHOD 18 GC RESULTS			GC/THC RATIO <sup>b</sup> (%)	THC PROPORTIONS <sup>c</sup>			
			ETHANOL (ppmv/wet)	METHANE (ppmv/wet)	ACET-ALDEHYDE (ppmv/wet)		ETH/THC RATIO	CH4/THC RATIO	AA/THC RATIO	
NA	16:39:57	2452.9	435	691.0		28.82	54.8	0.177	0.282	0.012
18	10:17:09	1122.3	905	1.1		18.9	116.7	0.806	0.001	0.017
18	10:34:59	1105.3	889	2.1		19.6	116.6	0.804	0.002	0.018
18	10:52:49	1326.0	1070	1.8		21.9	116.8	0.807	0.001	0.017
<b>18</b>	<b>AVG</b>	<b>1221.6</b>	<b>955</b>	<b>1.7</b>		<b>20.1</b>	<b>116.7</b>	<b>0.806</b>	<b>0.001</b>	<b>0.017</b>
NA	11:19:39	2135.1	733	531.0		19.3	74.7	0.343	0.249	0.009
NA	11:37:29	677.1	234	405.0		12.3	111.1	0.346	0.598	0.018
19	11:55:49	2234.9	579	779.0		30.8	71.7	0.253	0.341	0.013
19	12:13:39	2234.7	342	1770.0		26	102.4	0.153	0.792	0.012
<b>19</b>	<b>AVG</b>	<b>2027.6</b>	<b>461</b>	<b>1274.5</b>		<b>28.4</b>	<b>87.1</b>	<b>0.203</b>	<b>0.566</b>	<b>0.013</b>
NA	14:23:59	2277.0	155	792.0		13.9	45.2	0.068	0.348	0.006
20	14:41:59	2520.7	90	225.0		15.7	14.8	0.036	0.089	0.006
20	15:00:19	2696.4	367	669.0		33.2	45.7	0.136	0.248	0.012
20	15:18:29	2325.9	430	652.0		28.1	55.8	0.185	0.280	0.012
<b>20</b>	<b>AVG</b>	<b>2513.6</b>	<b>296</b>	<b>515.3</b>		<b>25.7</b>	<b>38.7</b>	<b>0.119</b>	<b>0.206</b>	<b>0.010</b>
NA	15:36:19	1583.6	221	1759.1		11.3	131.8	0.140	1.111	0.007
21	15:54:39	1904.1	205	406.0		22.5	38.1	0.108	0.213	0.012
21	16:13:09	2791.3	225	820.0		28.7	42.1	0.081	0.294	0.010
21	16:32:19	2701.7	884	761.0		31.7	76.1	0.327	0.282	0.012
21	16:50:09	2821.3	354	836.0		27.3	48.6	0.125	0.296	0.010
<b>21</b>	<b>AVG</b>	<b>2552.1</b>	<b>417</b>	<b>705.8</b>		<b>27.6</b>	<b>51.2</b>	<b>0.160</b>	<b>0.271</b>	<b>0.011</b>

<sup>a</sup> THC averages calculated from the full CEM data base (not just the above entries)

<sup>b</sup> GC/THC RATIO = (ETOH/1.42+AA/1.23+CH4)/THC \* 100 where: 1.42 = Ethanol CECF  
1.23 = Acetaldehyde CECF

<sup>c</sup> THC proportions were calculated as: ETH/THC = ppmv ethanol/ppmC THC, CH4/THC = ppmv CH4/ ppmC THC, AA/THC = ppmv acetaldehyde/ ppmC THC  
NA = Not Applicable. Values were not used in the run averages.

Table 3-5. Method 25A and Method 18 Emissions Tests Results, Rear (Oven) Stacks, EPA Bakeries, Site 3 (1992)

REAR/BURNER STACK									
RUN	TIME	METHOD 25A THC RESULTS <sup>a</sup> (ppmC/wet)	METHOD 18 GC RESULTS			GC/THC RATIO <sup>b</sup> (%)	THC PROPORTIONS <sup>c</sup>		
			ETHANOL (ppmv/wet)	METHANE (ppmv/wet)	ACET-ALDEHYDE (ppmv/wet)		ETH/THC RATIO	CH4/THC RATIO	AA/THC RATIO
13	10:49:08	1066.7	680.5	8.0	34.5	95.3	0.638	0.007	0.032
<b>13</b>	<b>AVG -B2<sup>d</sup></b>	<b>1051.8</b>	<b>680.5</b>	<b>8.0</b>	<b>34.5</b>	<b>95.3</b>	<b>0.638</b>	<b>0.007</b>	<b>0.032</b>
13	11:07:08	1273.8	840.6	12.1	70.6	101.5	0.660	0.009	0.055
<b>13</b>	<b>AVG -B1<sup>d</sup></b>	<b>1223.7</b>	<b>840.6</b>	<b>12.1</b>	<b>70.6</b>	<b>101.5</b>	<b>0.660</b>	<b>0.009</b>	<b>0.055</b>
14	11:45:38	854.9	573.6	4.0	40.7	101.6	0.671	0.005	0.048
<b>14</b>	<b>AVG -B2<sup>d</sup></b>	<b>854.9</b>	<b>573.6</b>	<b>4.0</b>	<b>40.7</b>	<b>101.6</b>	<b>0.671</b>	<b>0.005</b>	<b>0.048</b>
15	12:12:25	53.6	0.0	24.9	3.0	53.3	0.000	0.465	0.055
15	12:31:25	1318.5	107.1	751.5	6.6	69.1	0.081	0.570	0.005
15	12:49:25	140.3	28.3	71.9	5.2	84.4	0.202	0.513	0.037
15	13:16:55	1514.3	150.8	860.2	5.8	71.4	0.100	0.568	0.004
<b>15</b>	<b>AVG</b>	<b>946.2</b>	<b>71.6</b>	<b>427.1</b>	<b>5.1</b>	<b>69.6</b>	<b>0.096</b>	<b>0.529</b>	<b>0.025</b>
NA	13:44:55	1521.6	113.1	863.0	4.9	67.7	0.074	0.567	0.003
16	14:23:27	1253.0	43.6	784.0	7.5	68.2	0.035	0.626	0.006
16	14:41:27	1086.4	63.4	895.0	6.8	91.4	0.058	0.824	0.006
16	14:59:42	1757.6	150.9	2030.0	6.6	128.2	0.086	1.155	0.067
<b>16</b>	<b>AVG</b>	<b>951.9</b>	<b>86.0</b>	<b>1236.3</b>	<b>7.0</b>	<b>95.9</b>	<b>0.080</b>	<b>0.868</b>	<b>0.026</b>
NA	15:08:27	1519.8	744.9	872.0	31.5	129.5	0.490	0.472	0.021
NA	16:30:57	297.0	0.0	683.0	5.2	232.1	0.000	2.300	0.018
17	15:18:27	1547.0	145.6	1890.0	4.9	135.9	0.094	0.547	0.003
17	15:36:27	1675.9	79.2	1980.0	5.2	125.2	0.047	1.181	0.003
17	15:54:27	1018.9	42.0	824.0	6.3	87.5	0.041	0.809	0.006
17	16:12:57	1352.8	64.0	1930.0	5.5	149.9	0.047	1.427	0.004
<b>17</b>	<b>AVG</b>	<b>943.9</b>	<b>82.7</b>	<b>1656.0</b>	<b>5.5</b>	<b>124.6</b>	<b>0.057</b>	<b>0.991</b>	<b>0.004</b>

<sup>a</sup> THC averages calculated from the full CEM data base (not just the above entries)

<sup>b</sup> GC/THC RATIO = (ETOH/1.42+AA/1.23+CH4)/THC \* 100 where: 1.42 = Ethanol CECF  
1.23 = Acetaldehyde CECF

<sup>c</sup> THC proportions were calculated as: ETH/THC = ppmv ethanol/ppmC THC, CH4/THC = ppmv CH4/ ppmC THC,

<sup>d</sup> B1 = Burner 1. B2 = Burner 2 (Bun Oven)

AA/THC = ppmv acetaldehyde/ ppmC THC

NA = Not Applicable. Values were not included in the test run average.

Table 3-5. Method 25A and Method 18 Emissions Tests Results (cont), Rear (Oven) Stacks, EPA Bakeries, Site 3 (1992).

REAR/BURNER STACK									
RUN	TIME	METHOD 25A THC RESULTS <sup>a</sup> (ppmC/wet)	METHOD 18 GC RESULTS			GC/THC RATIO <sup>b</sup> (%)	THC PROPORTIONS <sup>c</sup>		
			ETHANOL (ppmv/wet)	METHANE (ppmv/wet)	ACET-ALDEHYDE (ppmv/wet)		ETH/THC RATIO	CH4/THC RATIO	AA/THC RATIO
18	11:01:49	954.6	672.2	5.7	43.2	106.2	0.704	0.006	0.045
18	10:26:09	891.8	519.0	7.9	56.8	91.4	0.582	0.009	0.064
<b>18</b>	<b>AVG - B2<sup>d</sup></b>	<b>924.4</b>	<b>595.6</b>	<b>6.8</b>	<b>50.0</b>	<b>96.8</b>	<b>0.643</b>	<b>0.007</b>	<b>0.054</b>
18	10:43:59	866.1	562.0	8.0	49.1	100.0	0.649	0.009	0.057
18	11:10:49	1011.6	1060.0	2.5	21.6	151.7	1.048	0.003	0.021
<b>18</b>	<b>AVG - B1<sup>d</sup></b>	<b>939.7</b>	<b>811.0</b>	<b>5.2</b>	<b>35.4</b>	<b>125.9</b>	<b>0.848</b>	<b>0.006</b>	<b>0.039</b>
NA	11:28:39	1782.3	82.8	2050.0	3.3	121.8	0.046	1.150	0.002
19	11:46:39	793.6	23.4	1680.0	3.0	216.3	0.029	2.117	0.004
19	12:04:49	1786.6	69.0	2070.0	4.1	121.6	0.039	1.159	0.002
<b>19</b>	<b>AVG</b>	<b>1090.2</b>	<b>46.2</b>	<b>1875.0</b>	<b>3.5</b>	<b>169.0</b>	<b>0.034</b>	<b>1.638</b>	<b>0.003</b>
NA	14:15:09	1126.7	27.9	1820.0	4.5	165.5	0.025	1.615	0.004
NA	14:32:49	78.2	19.9	56.9	3.3	114.0	0.254	0.727	0.042
20	14:51:09	444.8	56.7	396.0	4.4	108.3	0.127	0.890	0.010
20	15:09:39	1635.2	230.0	2010.0	3.6	143.2	0.141	1.229	0.002
20	15:27:29	1684.6	196.0	2020.0	4.7	136.8	0.116	1.199	0.003
<b>20</b>	<b>AVG</b>	<b>966.2</b>	<b>160.9</b>	<b>1475.3</b>	<b>4.2</b>	<b>129.4</b>	<b>0.128</b>	<b>1.106</b>	<b>0.005</b>
NA	15:45:29	214.6	48.4	104.0	2.4	81.9	0.226	0.485	0.485
21	16:03:39	495.4	80.1	1760.0	3.5	379.1	0.162	3.553	0.007
21	16:21:59	1322.0	447.0	804.0	32.2	111.8	0.338	0.608	0.024
21	16:41:29	1202.5	187.0	881.0	4.9	95.8	0.156	0.733	0.004
21	16:58:59	964.7	54.3	834.0	5.9	95.2	0.056	0.864	0.006
<b>21</b>	<b>AVG</b>	<b>1002.1</b>	<b>229.4</b>	<b>839.7</b>	<b>14.3</b>	<b>101.0</b>	<b>0.183</b>	<b>0.735</b>	<b>0.012</b>

<sup>a</sup> THC averages calculated from the full CEM data base (not just the above entries)

<sup>b</sup> GC/THC RATIO = (ETOH/1.42+AA/1.23+CH4)/THC \* 100 where: 1.42 = Ethanol CECF  
1.23 = Acetaldehyde CECF

<sup>c</sup> THC proportions were calculated as: ETH/THC = ppmv ethanol/ppmC THC, CH4/THC = ppmv CH4/ ppmC THC,

<sup>d</sup> B1 = Burner 1. B2 = Burner 2 (Bun Oven)

AA/THC = ppmv acetaldehyde/ ppmC THC

NA = Not Applicable. Values were not included in the test run average.

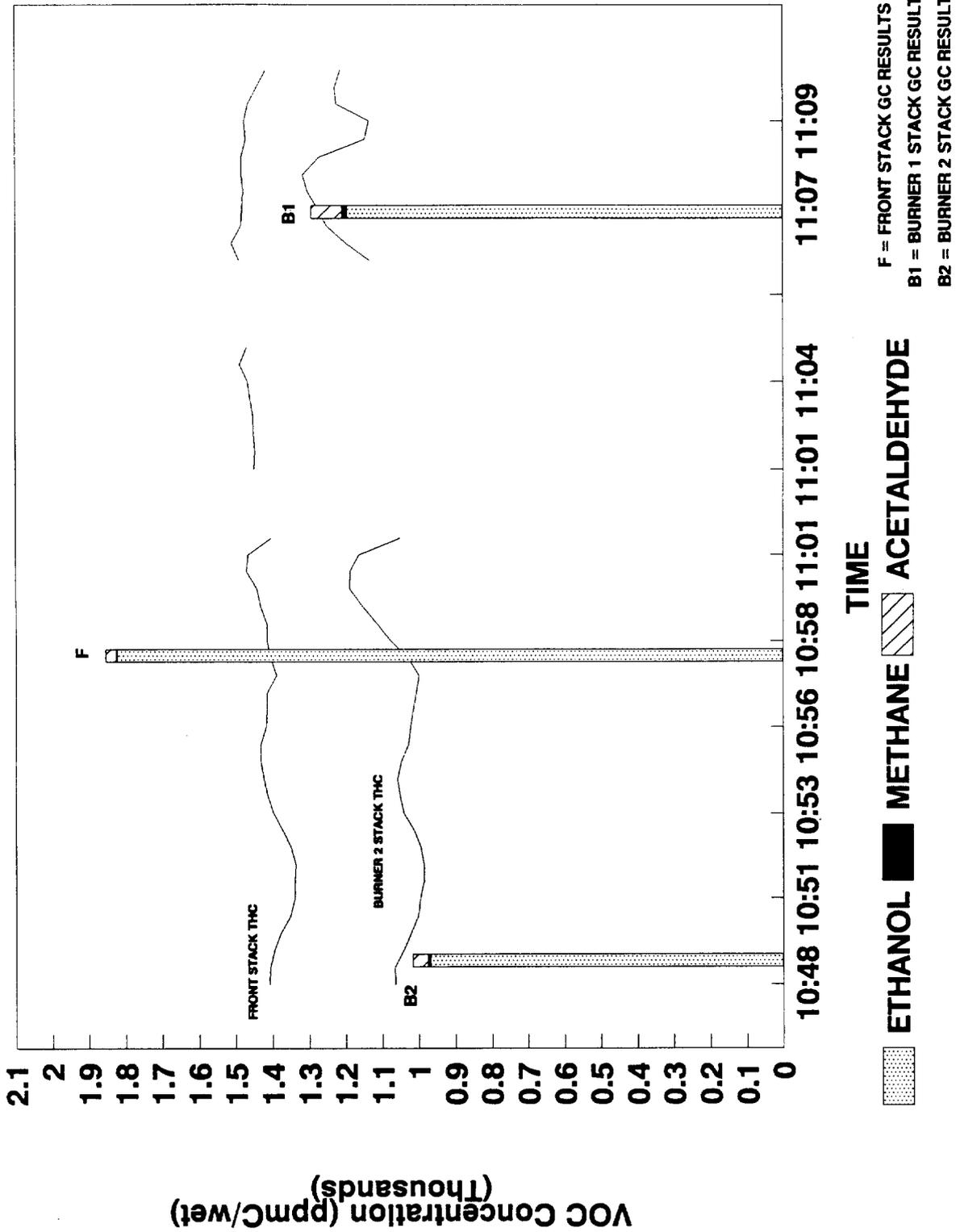


Figure 3-1. Run 13 Method 25A and Method 18 Results (adjusted to ppmC) .

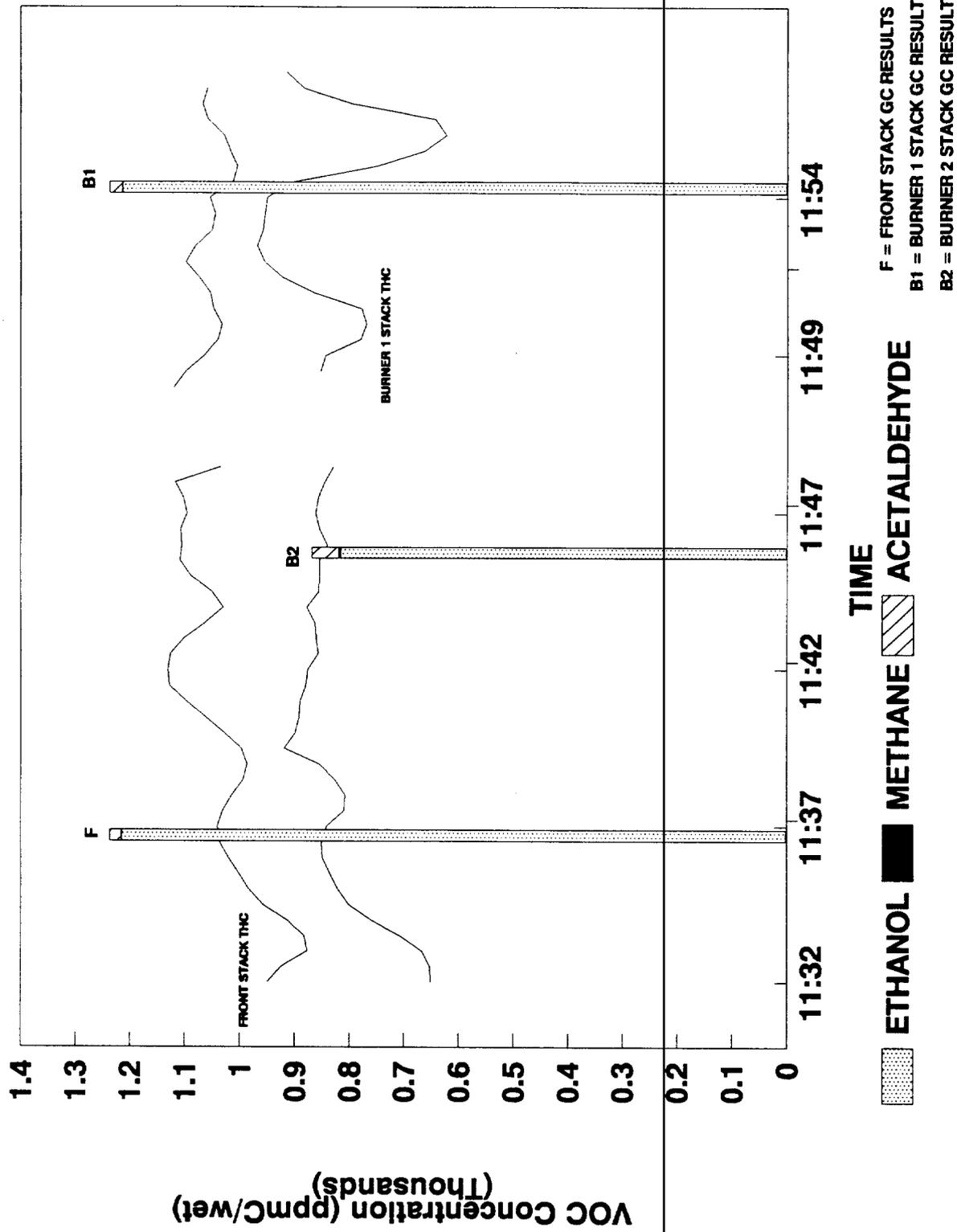


Figure 3-2. Run 14 Method 25A and Method 18 Results (adjusted to ppmC) .

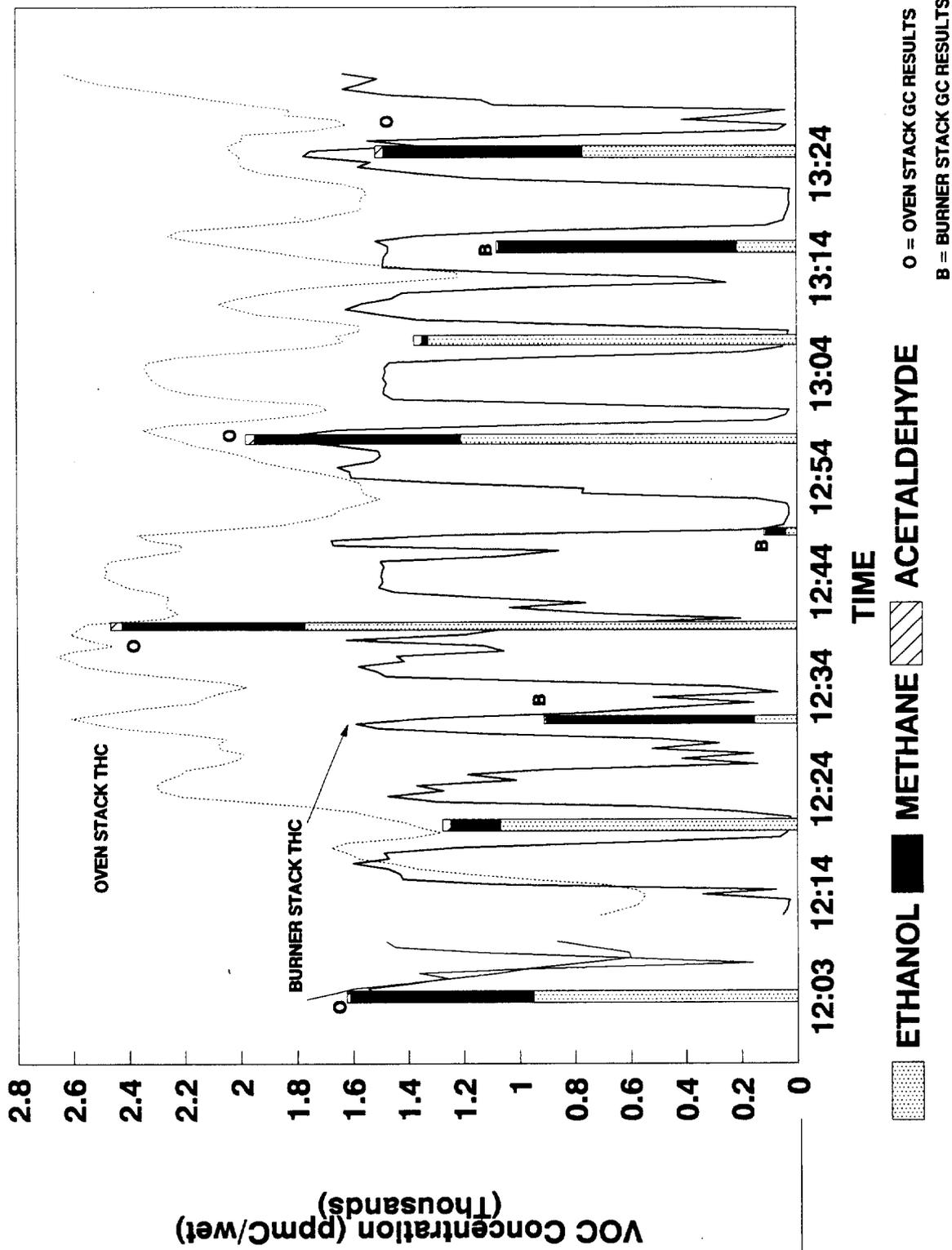


Figure 3-3. Run 15 Method 25A and Method 18 Results (adjusted to ppmC) .

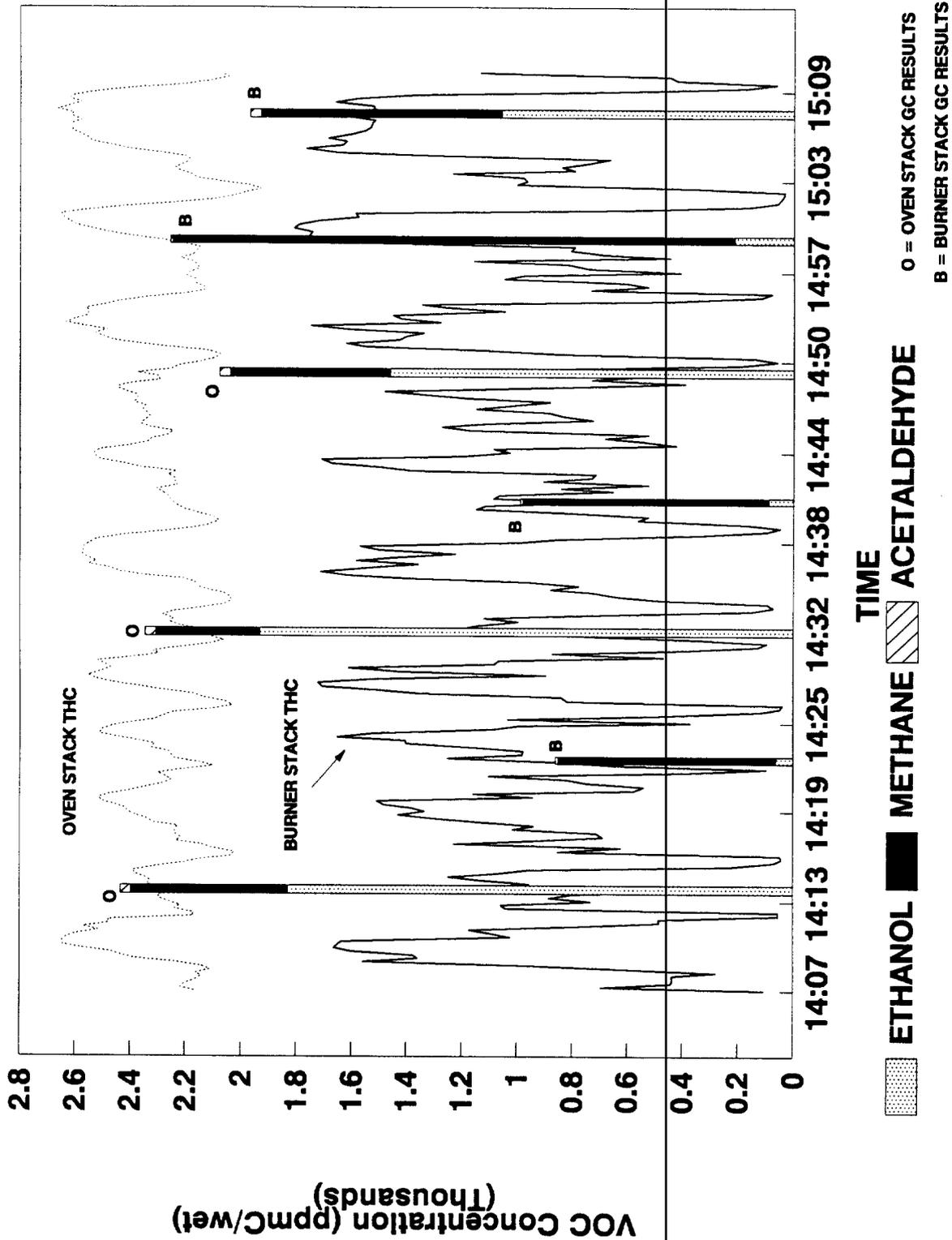


Figure 3-4. Run 16 Method 25A and Method 18 Results (adjusted to ppmC) .

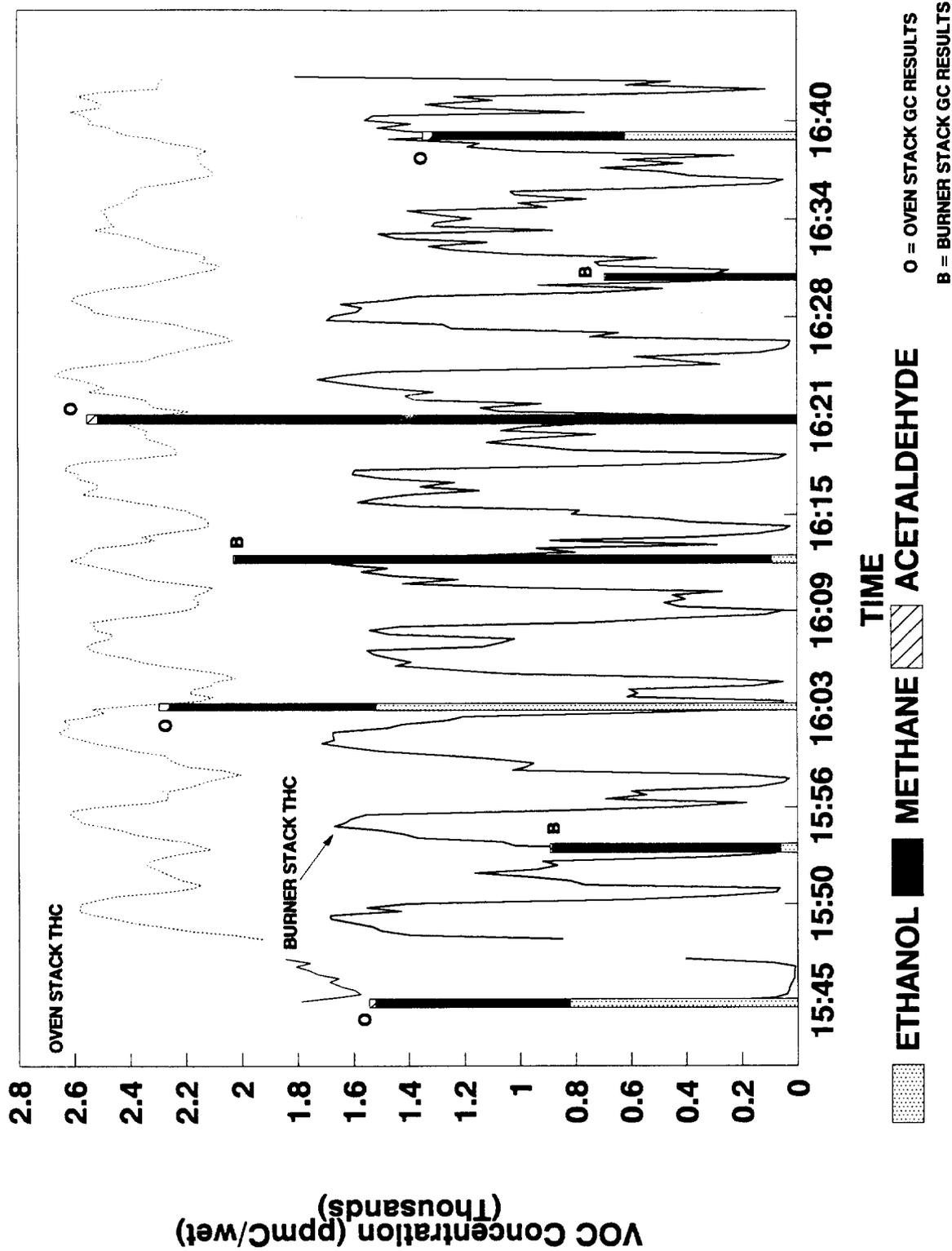


Figure 3-5. Run 17 Method 25A and Method 18 Results (adjusted to ppmC) .

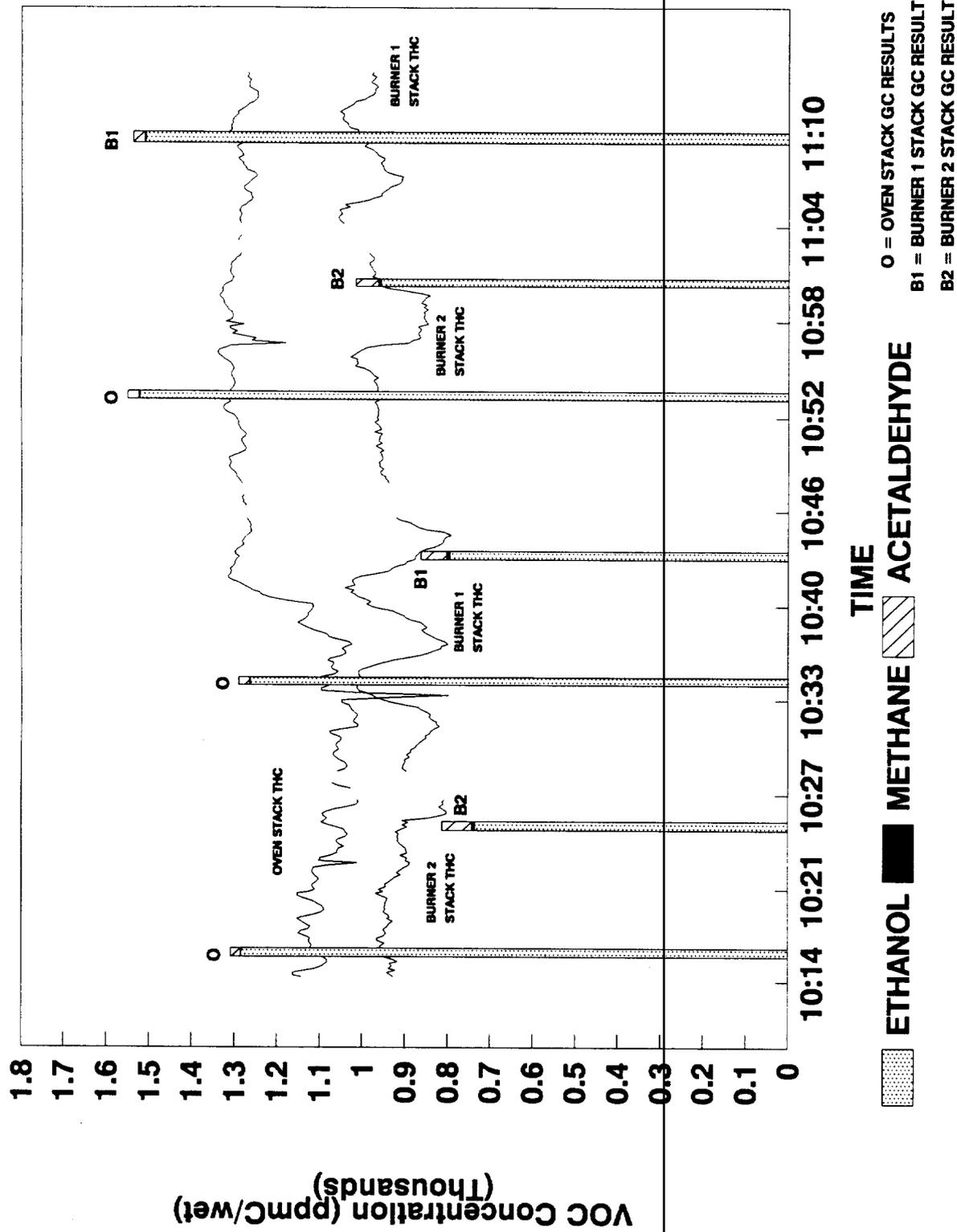


Figure 3-6. Run 18 Method 25A and Method 18 Results (adjusted to ppmC) .

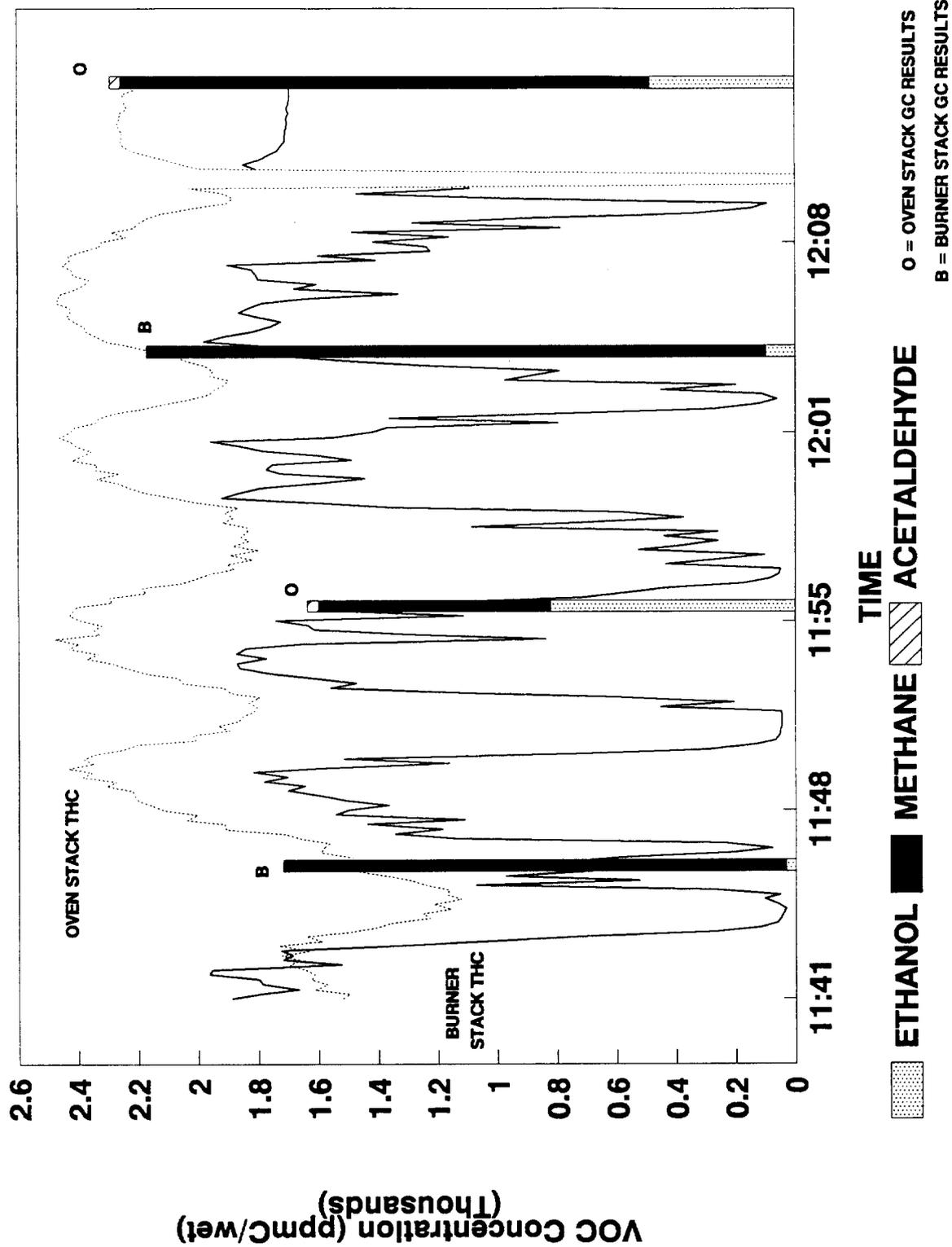


Figure 3-7. Run 19 Method 25A and Method 18 Results (adjusted to ppmC) .

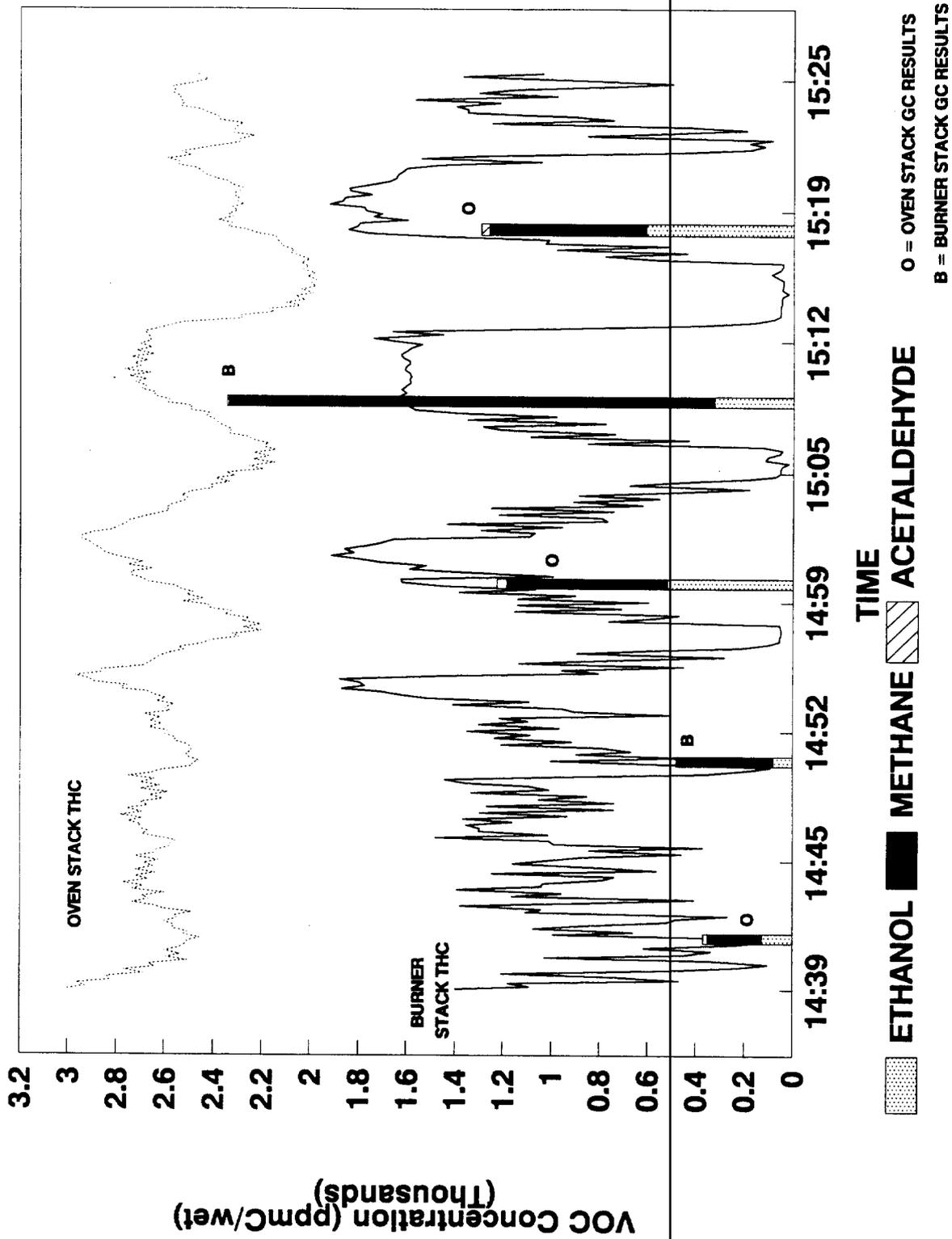


Figure 3-8. Run 20 Method 25A and Method 18 Results (adjusted to ppmC) .

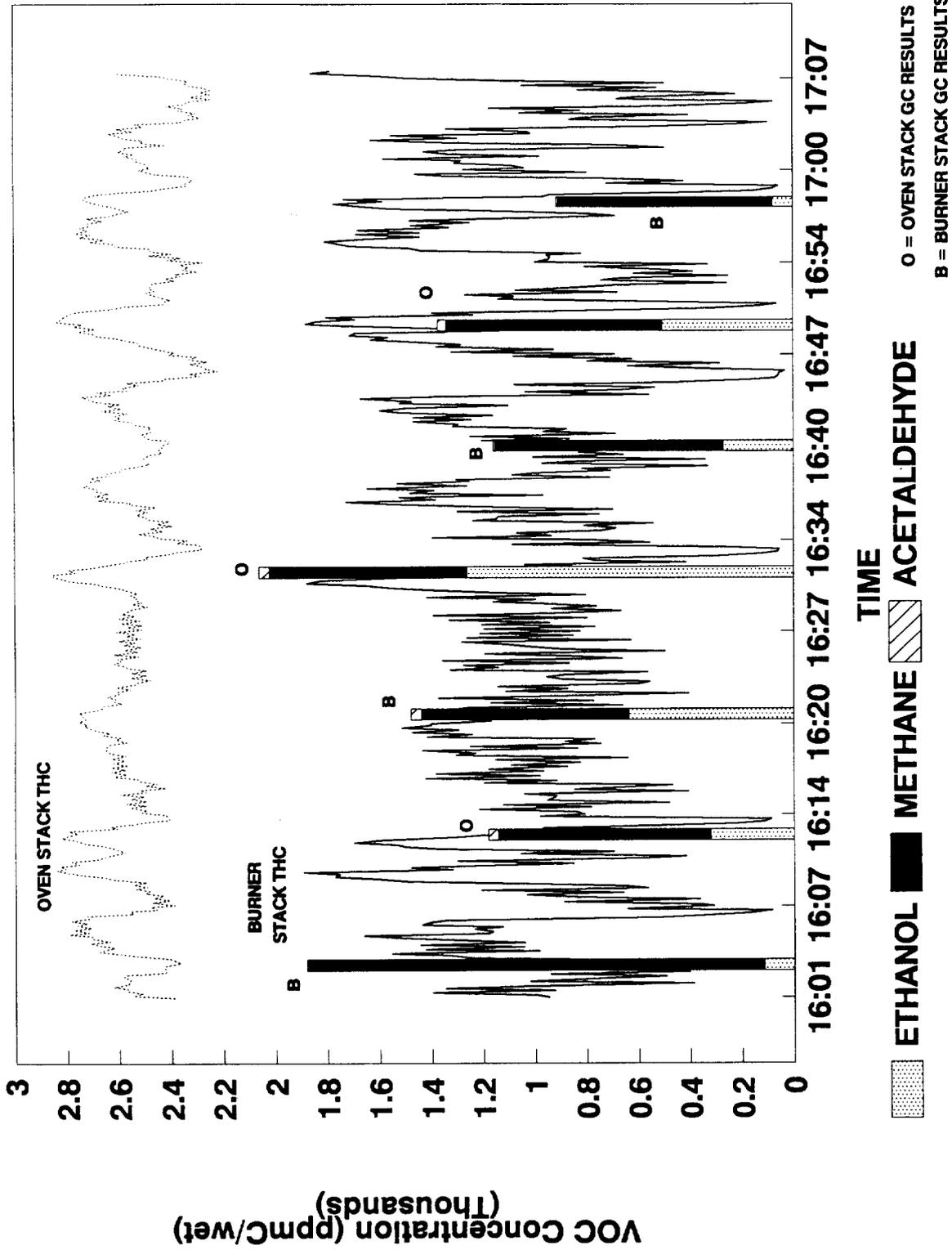


Figure 3-9. Run 21 Method 25A and Method 18 Results (adjusted to ppmC) .

**Table 3-6. Summary of Flue Gas Sampling Parameters  
Site 3 (1992)**

Run Number	Location	Stack Gas Temperature (deg F)	Barometric Pressure (in. Hg)	Stack Gas Static Pressure (in H <sub>2</sub> O)	Volumetric Flow Rate (acfm)	Volumetric Flow Rate (scfm)
Run 13	Exhauster	104	29.75	0	35.8	33.1
	Burner 1	451	29.75	-0.07	587.03	336.88
	Burner 2	486	29.75	-0.07	773	427
Run 14	Exhauster	104	29.75	0	35.8	33.1
	Burner 1	451	29.75	-0.07	587.03	336.88
	Burner 2	486	29.75	-0.07	773	427
Run 15	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501
Run 16	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501
Run 17	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501
Run 18	Exhauster	104	29.75	0	35.8	33.1
	Burner 1	451	29.75	-0.07	587.03	336.88
	Burner 2	486	29.75	-0.07	773	427
Run 19	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501
Run 20	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501
Run 21	Oven	304	29.75	0	2,349	1,613
	Burner	401	29.75	0	822	501

### 3.3

#### Carbon Equivalent Correction Factor Determination

Table 3-7 presents the ethanol carbon equivalent correction factor (CECF) determination. As discussed before, the CECF is the relative response of the THC analyzer in units of ppmC to known concentrations of ethanol. The CECF was determined for both ethanol and acetaldehyde by observing the response of the THC analyzer in units of ppmC to known gas concentrations of the two target compounds. The observed response was divided by the known concentration to determine the CECF value. This was done both in the field and in the laboratory. Ethanol challenges were made in the field at only one concentration (typically 200 ppmv); therefore, it was decided to develop the ethanol CECF over a much wider range of concentrations that were encountered in the field. The CECF value used for this test program was determined in the laboratory using a wide range of ethanol concentration. The average CECF for ethanol was determined to be 1.42. The on-site ethanol QC challenges are presented in Section 6.0.

Table 3-8 presents the acetaldehyde CECF determination. This procedure was performed in the field with a single concentration of acetaldehyde. Only relatively low sample concentrations were observed during the test program (< 50 ppmv); therefore, extensive CECF development did not need to be completed. The acetaldehyde CECF used for this test program was 1.23.

Table 2-7. In-House Ethanol Carbon Equivalent Correction Factor Determination. EPA Bakeries (1992)

Ethanol QC Gas Conc. (ppmC)	Instrument Response (ppmC)	Carbon Equivalent Correction Factor
498	628	1.26
1000	1294	1.29
1470	2055	1.40
2000	2773	1.39
1470	2022	1.38
1470	2097	1.43
498	732	1.47
1000	1499	1.50
1470	2287	1.56
2000	2997	1.50
	AVG	1.42

Table 2-8. Acetaldehyde Carbon Equivalent Correction Factor Determination. EPA Bakeries (1992)

Site	Test Day	Ethanol QC Gas Conc. (ppmC)	System 1		System 2	
			THC Instrument Response (ppmC)	Carbon Equivalent Correction Factor	THC Instrument Response (ppmC)	Carbon Equivalent Correction Factor
1	2	82.5	101.5	1.23	103.5	1.25
3	2	82.5	98.9	1.20	101	1.22
4	3	82.5	103.5	1.25	107	1.30
4	4	82.5	DOWN		100.5	1.22
			AVG	1.23	AVG	1.26

## **4.0 OVEN CONFIGURATIONS AND SAMPLING LOCATIONS**

This section presents a general discussion of the oven stack locations, sampling port locations, and flow traverse point locations. Specific information is given for the Site 3 test program. The U.S. EPA Method 1 guidelines were used to determine the majority of test locations measuring gas flow rates. Method 25A and 18 samples were taken from the same port that the flow measurements were made. The sample point was located near the centroid of the duct (centrally located 10% area of the stack cross-section). All locations were at least 2 diameters upstream from the gas discharge to the atmosphere as required in Method 25A.

### **4.1 General Process Description**

The following sections present a general description of the baking process and commercial baking ovens. It is not within the scope of this document to present detailed process information or production rates; therefore, these descriptions are only meant to familiarize the reader of the general principles and equipment used in the commercial baking industry.

#### **4.1.1 Baking Process Description<sup>1</sup>**

Bread baking at large commercial bread bakeries is a highly-mechanized process consisting of high-speed production lines with ovens capable of baking 20,000 pounds or more of bread per hour. The process starts with the mixing of flour, water, sugar, and yeast to form dough, thereby initiating a long series of complex biochemical changes which ends in the oven where the bread is baked.

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<sup>1</sup> Compilation of Air Pollutant Emission Factors (AP-42), Chapter 13.01, Bread Baking (Final Draft 1991)

There are four basic types of dough mixing processes: sponge dough, straight dough, brew, and continuous mix ("no-time"). These processes vary in the manner in which the various dough ingredients are mixed which determines the fermentation time available. Fermentation time can vary from 20 minutes or less for the continuous mix or "no-time" process, to 5 hours or more in the sponge dough process. The continuous mix or "no-time" process consists of mixing all of the dough ingredients at the same time; therefore, the fermentation time is minimized by using processing agents and higher temperatures. Sponge dough is formed when two-thirds of the flour, part of the water and the yeast are initially mixed and allowed to ferment before the remaining ingredients are added.

The baking process actually occurs in the oven which causes expansion of the loaf to final volume, crust formation, yeast and enzymatic activity inactivation, coagulation of dough proteins, partial gelatinization of starch, and reduction of loaf moisture. All of these processes are necessary to produce high quality, saleable bread products. To accomplish all of these product and process effects in the proper sequence, commercial bread ovens have between three and eight temperature gradient zones which are maintained in critical balance. Oven rise, which determines the final loaf volume and internal texture, occurs during the first 5-6 minutes of baking. Thermal degradation of the yeast occurs when the internal bread temperature reaches 140-145 °F which stops the fermentation process. Protein is denatured between 140-180 °F. At the end of the process, browning and crust color develop while ethanol and moisture are evaporated to cool the loaf and prevent the internal temperature from reaching the boiling point of water.<sup>2</sup>

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<sup>2</sup>J. W. Stitley, Baking Technology, Oven Emissions and Control Devices, American Institute of Baking, Manhattan, KS (1986).

There are three fundamental oven types: tunnel, tray, and spiral. Tunnel ovens, as shown in Figure 4-1 are long horizontal ovens where dough enters at one end and is conveyed to the opposite end where it exits as bread. Tray ovens as shown in Figure 4-2 are also horizontal; however, the dough enters the oven and exits on the same side after being conveyed the length of the oven. The tray is lowered to a second level and then conveyed to the exit near where it entered. In spiral ovens, dough enters at the top corner of the oven and is conveyed in a downward spiral to the bottom corner of the oven where it exits through an opening diagonally lower from where it entered the oven. No spiral ovens were tested during this test program. Tunnel and tray ovens typically contain three to five exhaust stacks with one stack typically used for purging the oven of natural gas during ignition and the remaining stacks used during normal baking operations. In contrast, spiral ovens usually contain just one stack which is used during both purging and normal operations.<sup>3</sup>

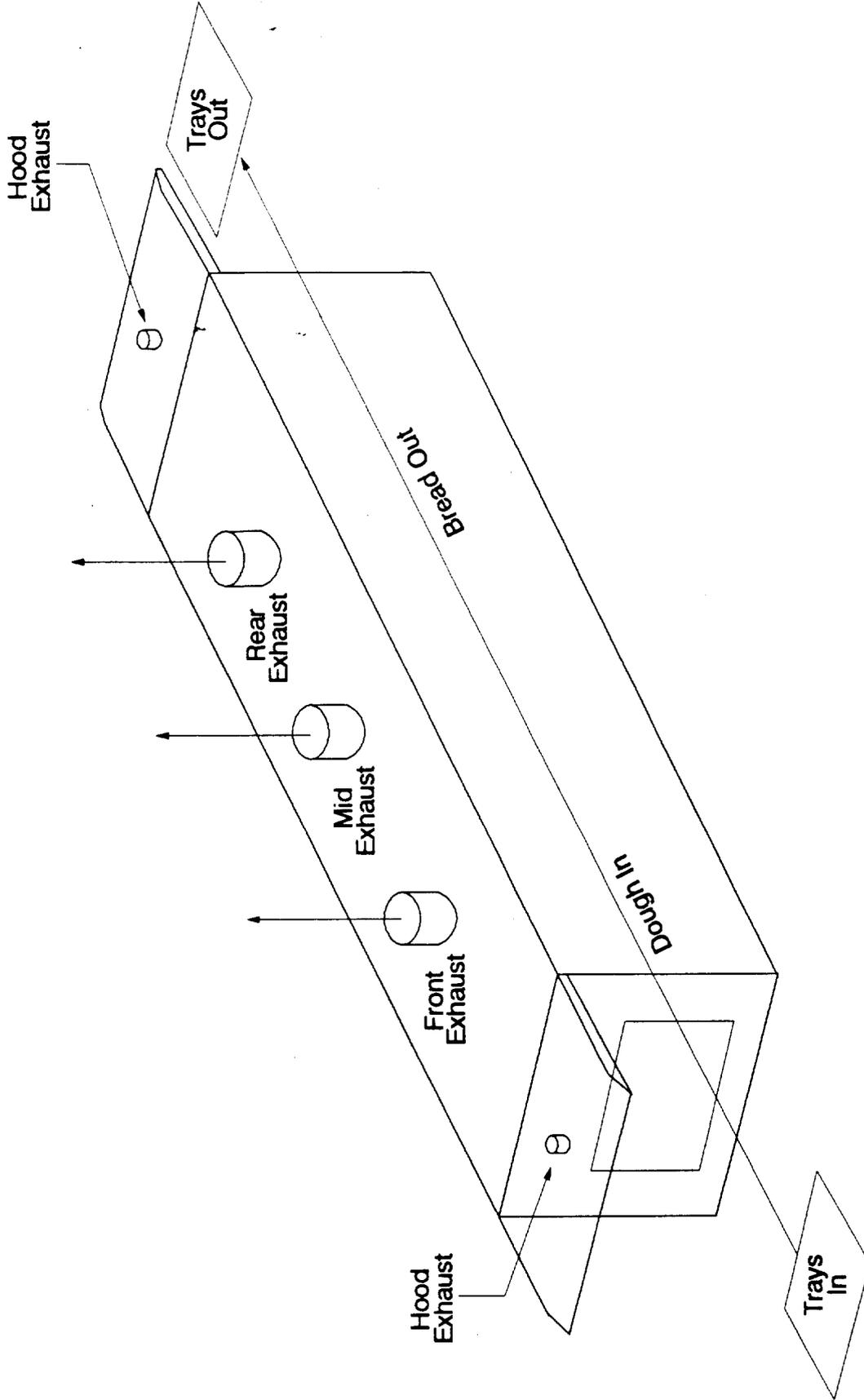
#### 4.1.2 Oven Heating Systems<sup>4</sup>

Ovens may be divided into two general categories according to the manner in which they are heated, namely, direct-fired ovens and indirect-fired ovens. A third category makes use of semi-direct heating. In direct-fired ovens, the burners are located directly within the baking chamber and are usually ribbon type and burn natural gas. Modern ovens normally feature banks of ribbon burners located both above and below the baking surface, across the path of travel of the baking trays or oven band. Most such ovens are equipped with an external forced-air agitation system to augment the naturally formed convection currents within the baking chamber.

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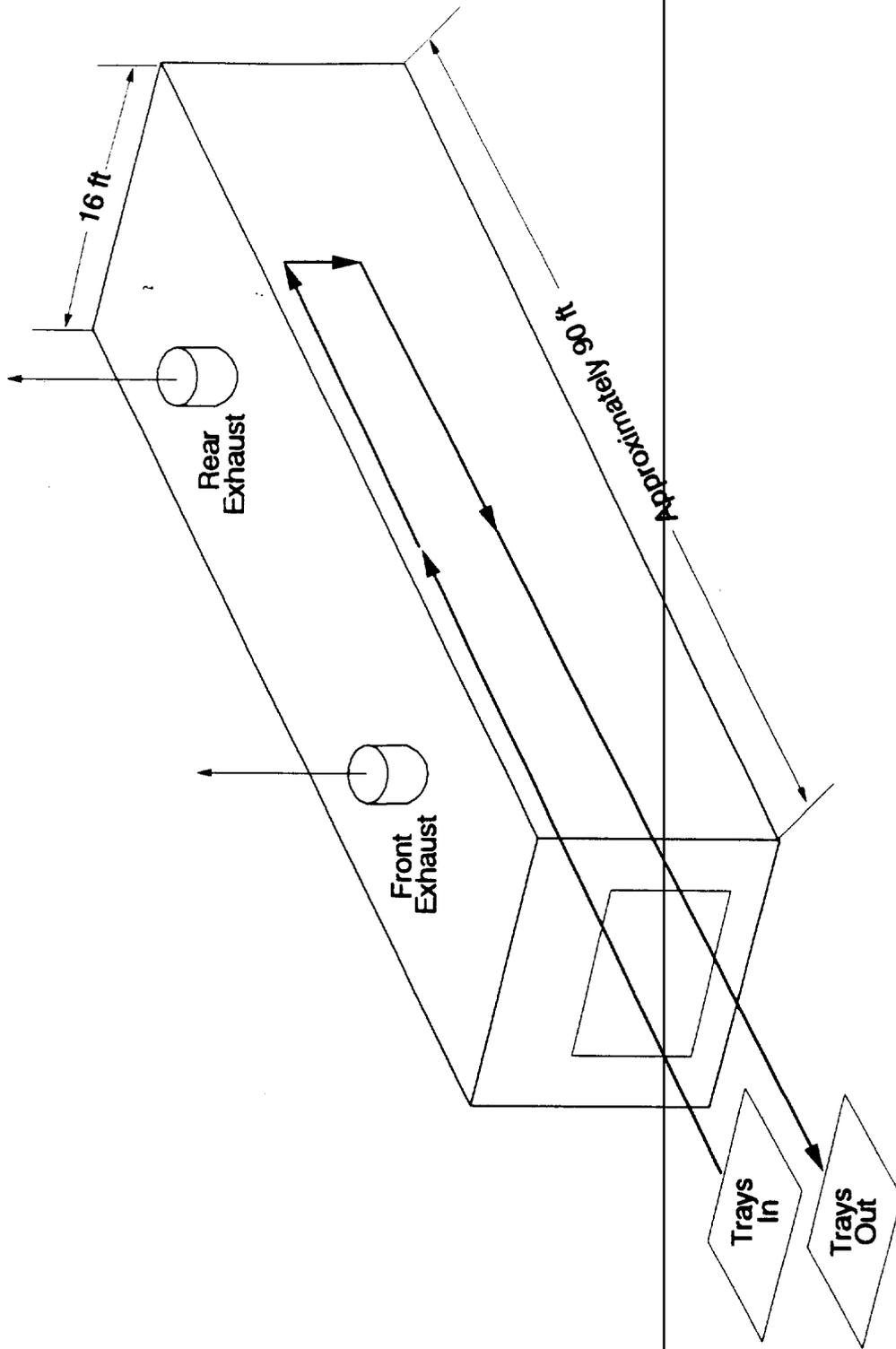
<sup>3</sup>BAAQMD Staff Report Supporting Adoption of Rule 8-42 (July 1988).

<sup>4</sup> The Science of Baking, Lesson 26 Bakery Ovens, American Institute of Baking (no date)



4-4

**Figure 4-1. Generalized Schematic of a "Tunnel" Type Baking Oven  
EPA Bakeries (1992)**



**Figure 4-2. Generalized Schematic of a "Tray" Type Baking Oven  
EPA Bakeries (1992)**

In indirect-fired ovens, the combustion chamber is isolated from the baking chamber. The heat is transferred from the hot combustion gases to the baking chamber by means of flues or radiator tubes. In these ovens, the products of combustion do not enter the baking chamber and thus do not come into direct contact with the baking products. The heat is generated by single high-capacity burners (one burner for each oven zone) and radiant heat is supplied by the flues and radiators within the baking chambers. Forced air agitation systems and improved oven efficiency are a general feature of indirect-fired ovens.

Semi-direct fired ovens (which are also referred to as semi-indirect fired ovens) closely resemble indirect-fired ovens in their use of separate combustion chambers and of radiator tubes for the heat transfer. In their case, however, the radiator tubes have either thin slots or small holes that allow the hot combustion gases to enter the baking chamber. These gases create convection currents whose intensity can be controlled by means of baffles. Thus, semi-direct fired ovens combine the advantages of both convection and radiant heat transfers.

## **4.2            Test Program Overview**

This section will present a general discussion of the oven types and sample locations from all four sites. However, specific information will only be presented for the Site 3 facility.

This test program involved measuring the emissions from both direct- and indirect-fired ovens. Some of the indirect fired units had their heat exchanger tubes drilled out to promote better heating efficiency. However, maintenance records were incomplete and plant personnel were uncertain whether this had been completed or not. In some instances, maintenance personnel stated that their indirect-fired ovens had not been drilled out and yet high concentrations of unburned methane (> 1000 ppmv) were

detected in the stack gases. So a strict direct/ indirect firing classification was not always possible.

Another important facet of the test program was that during steady-state operation, the gas flow in some of the stacks would almost be completely shut off with a flow damper to prevent oven heat loss. The Method 25A and 18 tests would detect fairly high concentrations of THC (> 1000 ppmC) while flow rates would be minimal (< 100 cfm), resulting in fairly low emissions rates. The flow damper positions were always verified to ensure they were the same during both flow measurement tests and the Method 25A and 18 tests.

The majority of ovens tested had two stacks venting exhaust gases. If both stacks vented oven (baking) gases (i.e., direct-fired), they were referred to as the front stack and the rear stack depending on their respective location. Front stacks were located near the end of the oven where the bread dough entered, and the rear stacks were on the opposite end.

Indirect-fired ovens also typically had two stacks with one stack exhausting the oven gases and the other exhausting the burner gases. Gases from the burner stack were expected to be comprised mainly of unburned hydrocarbons (i.e. methane). However as previously mentioned, oven maintenance records were sometimes incomplete and what was expected to be purely a burner exhaust gas stream, was sometimes comprised of significant portions of gases from the baking processes (i.e. ethanol and acetaldehyde).

The majority of stacks were small roof vent ducts with an inside diameter (ID) ranging from 12 to 16 inches. As shown in Figures 4-1 and 4-2, the stacks were typically arranged in a straight line (i.e., in line with the orientation of the oven). Most had rain caps installed over the opening which was typically 6-15 feet above the roof. All stacks were accessed from the roofs of the facilities and sample ports were located

from 2-6 feet above the roof line. A 1.75 inch hole in the duct walls allowed for full insertion of the Method 25A and 18 sample probe. Two ports were located 90° apart at the same elevation. The sample port that was not being used was always capped off to prevent any ambient air from diluting the sample stream.

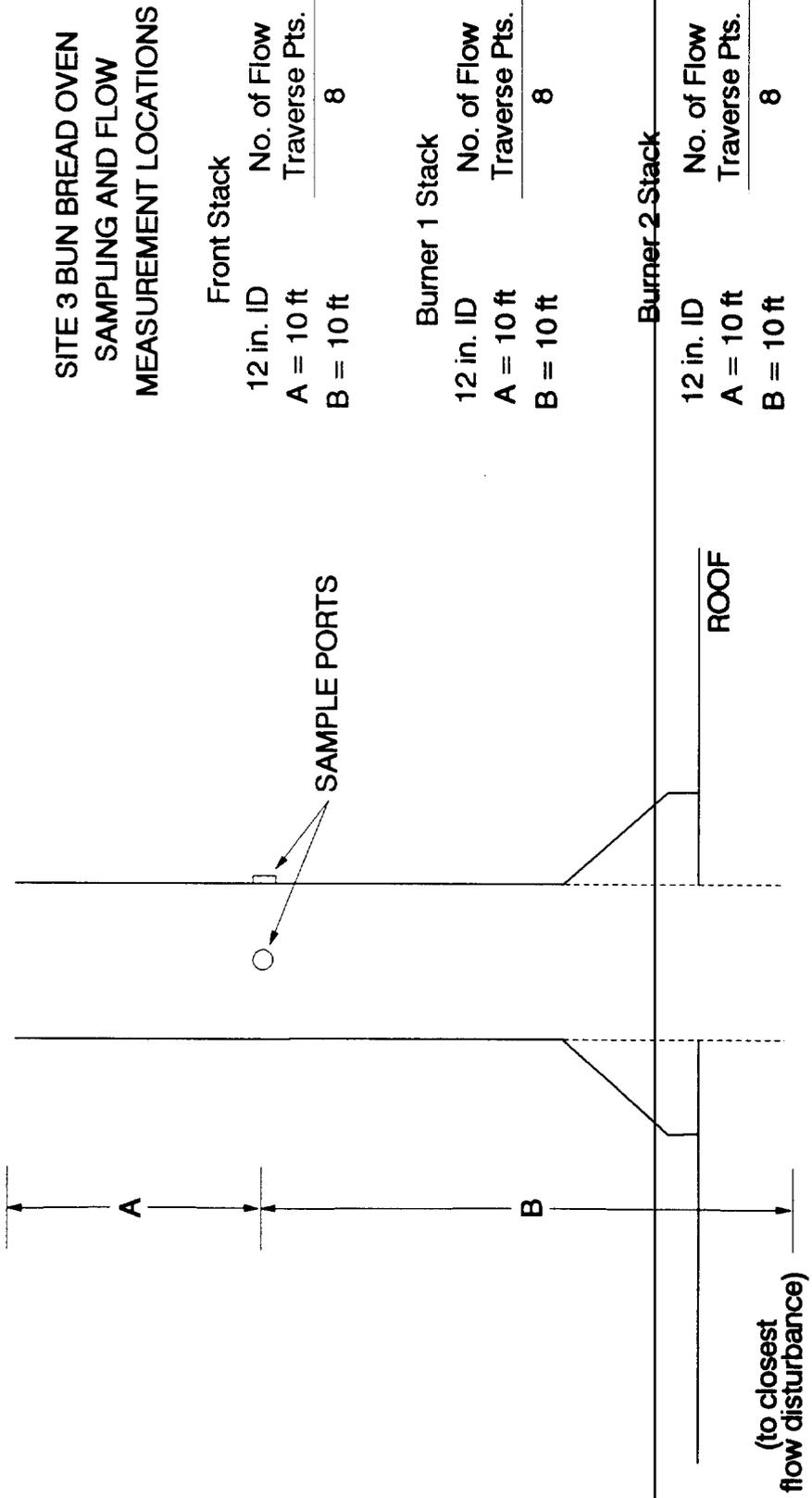
Approximately 100 to 150 feet of heated Teflon® tubing was used to transport the gas sample from the stack to the mobile continuous emissions monitoring (CEM) vehicle that was typically parked adjacent to the bakery wall. In cases where there were three stacks originating from the oven, one sampling probe/heat trace system would be alternated from the second and third stack.

A general description of sample locations for the Site 3 test program is presented according to the respective test site in the following section.

#### **4.3 Site 3 Sample Locations**

A small bun and a small oven designated for baking bread was tested at Site 3. Both ovens were tested with the CEM trailer located in the same parking location. The bun oven was identified as indirect-fired with three stacks. Two of the stacks were designated for the two burners and the third stack was an exhauster which vented oven gases. During normal operation the main flow damper on this oven was closed. The stack gas flow was 50-100 acfm during testing. The tests were conducted keeping one sample/THC analytical system on the exhauster stack and alternating the other sample/THC system from "Burner 1" and "Burner 2".

The sampling locations for the Bun oven are shown in Figure 4-3. The burner stacks were oriented about 10-15 feet apart on the oven longitudinal axis with the Burner 1 stack closer to the rear of the oven. The length of heat trace used for all Site 3 stacks was 150 feet. Both burner stacks were 12-inches ID with no rain caps. Ports were located 10-feet (10 diameters) downstream and 10-feet (10 diameters) upstream from the



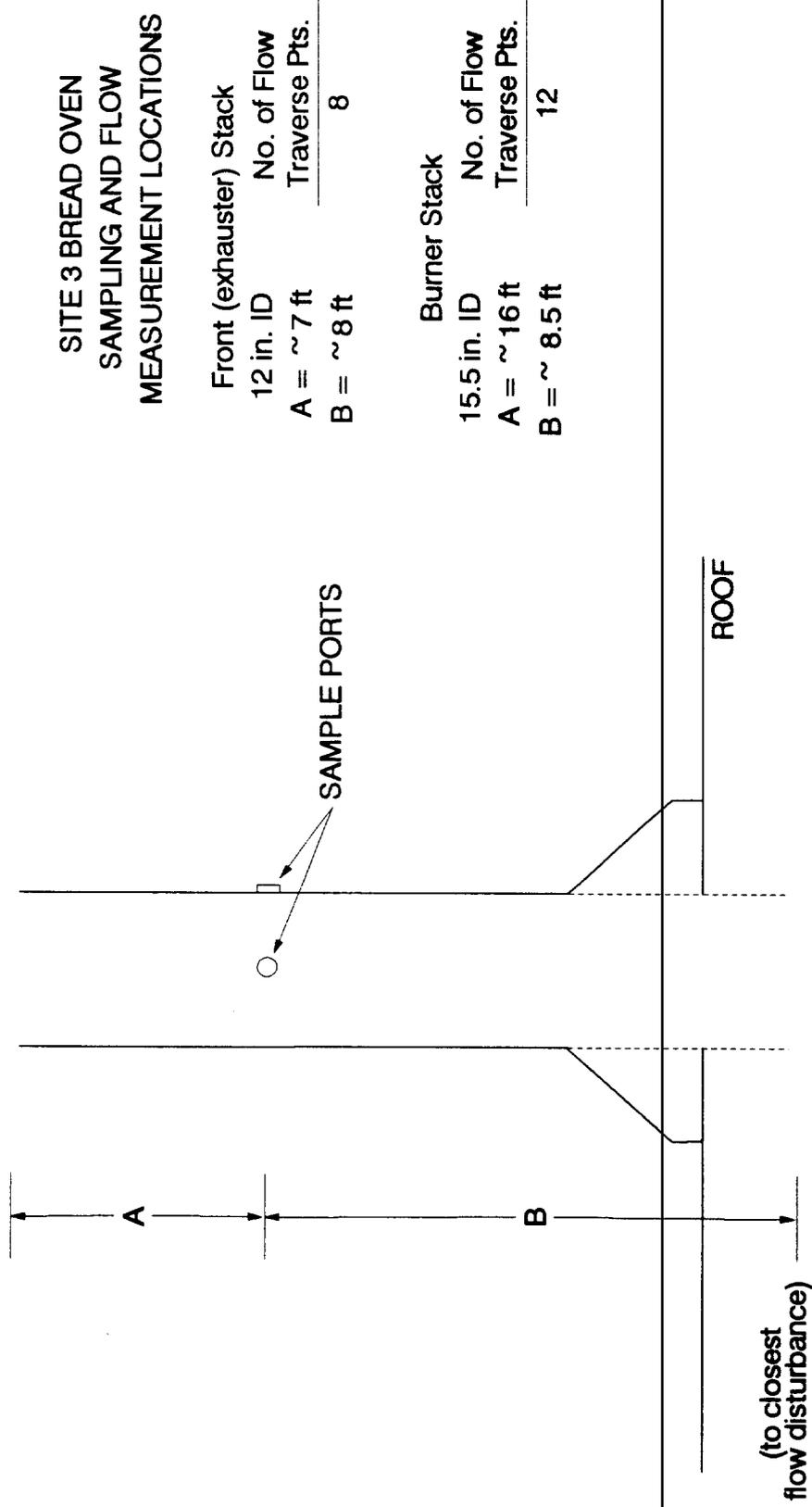
**FIGURE 4-3. SITE 3 BUN OVEN STACK CONFIGURATION  
EPA BAKERIES (1992)**

closest flow disturbances. Flow was measured at 8 traverse points.

The bun exhauster stack was 12-inches ID. Ports were located 10-feet (10 diameters) downstream and 10-feet (10 diameters) upstream of the nearest flow disturbances. The measured flow rates were approximately 50-100 fpm which necessitated the use of a hot-wire anemometer for flow measurement. Flow was measured at 8 traverse points.

The Bread oven at Site 3 sampling locations are shown in Figure 4-4. This oven was also indirect-fired. There was a single burner stack and a single oven vent stack located approximately 30 feet apart along the longitudinal axis. The burner stack was 15.5 inches ID with a rain cap located on top. Ports were located 8.5-feet (6.6 diameters) downstream and 16-feet (12.4 diameters) upstream from the closest flow disturbances. Twelve traverse points were used for measuring flow rates.

The oven stack was 12-inches ID with a rain cap located on top. Ports were located 8 ft (8 diameters) downstream and 7 ft (7 diameters) upstream from the closest flow disturbances. Eight traverse points were used for measuring flow rates.



**SITE 3 BREAD OVEN  
SAMPLING AND FLOW  
MEASUREMENT LOCATIONS**

**Front (exhauster) Stack**  
12 in. ID      No. of Flow  
A = ~ 7 ft      Traverse Pts.      8  
B = ~ 8 ft

**Burner Stack**  
15.5 in. ID      No. of Flow  
A = ~ 16 ft      Traverse Pts.      12  
B = ~ 8.5 ft

**FIGURE 4-4. SITE 3 BREAD OVEN STACK CONFIGURATION  
EPA BAKERIES (1992)**



## **5.0 SAMPLING AND ANALYTICAL METHODS**

This section briefly summarizes the procedures used for sampling and analysis. Procedures are presented for Method 25A testing in Section 5.1, Method 18 procedures in Section 5.2, and Methods 1-4 procedures in Section 5.3. The detailed protocols can be found in the U.S. EPA reference methods located in the appendices.

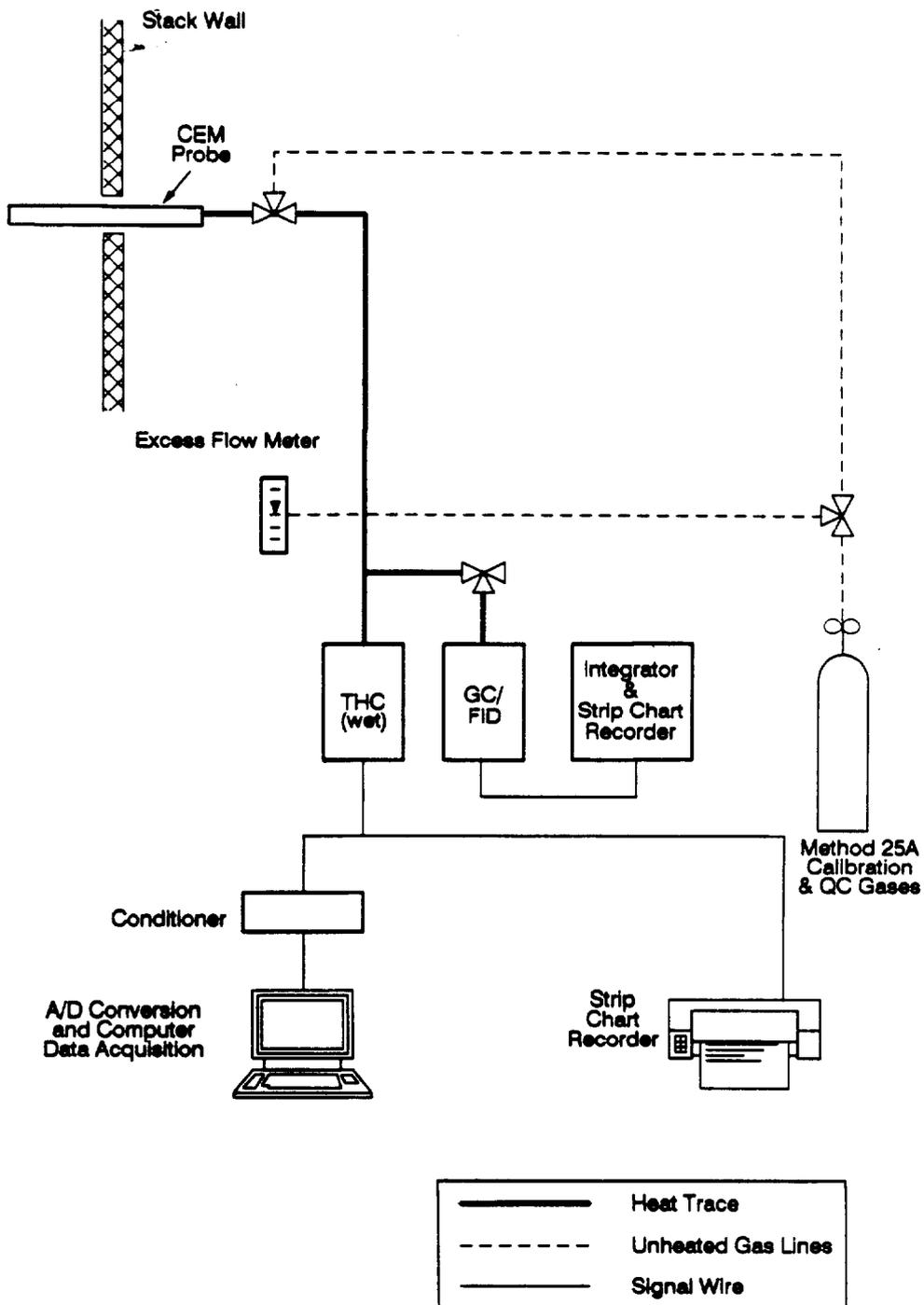
### **5.1 Method 25A Sampling and Analysis for THC**

Total hydrocarbon concentration was determined on a continuous basis using the U.S. EPA Method 25A procedure. Procedures incorporate QA/QC protocols stipulated as "Measurement System Performance Specifications" in the reference methods. The QA parameters will be reported in Section 6.0 while the QC procedures are fully detailed in the test plan written for this test program.

The following discussion presents Sample Extraction Equipment and Procedures in Section 5.1.1, THC Analyzers and Operating Principal in Section 5.1.2, Data Acquisition Procedures in Section 5.1.3, Instrument Calibration in Section 5.1.4, and an Example Daily Operating Procedure in Section 5.1.5.

#### **5.1.1 Sample Extraction Equipment and Procedure**

A continuous gas sample was extracted from the stack and transported to the analyzer through a heated Teflon® sample line (heat trace). The gas only came into contact with inert materials such as stainless steel, glass, or teflon. The sample gas temperature was maintained above 100°C (212°F) so that there was no condensation of moisture or hydrocarbons in the tubing. A generalized schematic of a typical extractive system is shown in Figure 5-1.



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**Figure 5-1. General Schematic of Method 18/25A Extractive Stack Gas Sampling System**

The probe was used to extract gas from the stack was constructed of a short length of stainless steel or teflon tubing. The gas was extracted using a heated head pump that was placed just upstream of the THC analyzer. An excess flow dump was also upstream from the analyzer, so that the gas in the analyzer would not be under any back pressure created by the sample pump.

In addition to one heated sample tube for sample gas extraction, a separate tube was run from the calibration gas cylinders to the probe. This tube was connected to the system with a 3-way valve (calibration valve) at the junction of the probe and the heat trace. This allowed for leak checks, sample bias checks and calibration drift checks to be completed, as was discussed in Section 6. These procedures required a calibration or QC gas be directed to the probe and back through the entire sampling system. The difference between the resulting values and the values observed when the gas was passed directly to the instrument is referred to as sample bias. When the bias was above acceptable limits, corrective actions were implemented.

### **5.1.2 THC Analyzers and Analytical Principles**

The THC analyzers used in Method 25A procedures employ a flame ionization detector (FID) to quantify the quantity of THC. As the flue gas enters the detection chamber, the hydrocarbons are combusted in a hydrogen flame. The ions and electrons formed in the flame enter an electron gap, decrease the gas resistance, and permit a flow in an electric circuit. The resulting current is proportional to the instantaneous concentration of the total hydrocarbons. These analyzers are not selective between species; however, different hydrocarbon species respond differently in the FID. Straight chain hydrocarbons (alkanes), alkenes, and aromatics respond in proportion to the number of carbons atoms in the molecule. For example, 100 ppmv propane ( $C_3H_8$ ) responds approximately the same as 300 ppm methane ( $CH_4$ ). When measuring THC of these type of compounds, there are no substantial inaccuracies in reporting THC as ppmv as methane. However, oxygenated compounds such as ethanol ( $CH_3CH_2OH$ ) and

acetaldehyde ( $\text{CH}_3\text{CHO}$ ) have a depressed response so that what appears to be 300 ppmv as methane may actually be 1200 ppmv ethanol. The resulting THC concentrations as ppmC were adjusted to ppmv ethanol or ppmv acetaldehyde based on the results of the Method 18 analysis.

### **5.1.3 Data Acquisition**

The signal from the analyzer is typically an analog voltage response (i.e., 0-5 volts). The meter panel on the front of the instrument usually translates the voltage signal to concentration units (i.e., ppmv). However for long term data acquisition, the voltage signals coming from the electrical output leads need to be translated to actual concentration data. The system used to perform this function is known as the data acquisition system or DAS. This process will either be accomplished with the use of a strip chart recorder (SCR) or a computerized system. A SCR is the simplest procedure; however additional man hours were needed to reduce the SCR trace to individual readings (i.e., 1/minute). If a computerized version is used, the analog signal is converted to a digital signal and directed to a computer so that the signal was translated to concentration units and saved to magnetic media. For this test program, a computerized DAS was used and a SCR was used as a back-up system.

### **5.1.4 Instrument Calibration**

Calibrations were performed by passing known concentrations of a hydrocarbon gas standard through the instrument and recording the associated response. A response factor was then calculated and used to adjust sample gas responses to concentration units. Typical calibration calculations were completed as shown in Section 7. The THC instrument was calibrated twice daily. The first calibration was used to determine the response factor, and the second calibration was performed after completing the test runs so that calibration drift can be determined and the test data corrected for drift (if necessary). Calibrations were completed on a two point basis:

zero gas (generally N<sub>2</sub>), and a high-range or "span" gas. Methane was used as the calibration gas, and the concentrations were reported as ppmv methane which are the same as ppmv Carbon (ppmC). The gas was certified by the manufacturer guaranteeing the concentration within  $\pm 2\%$  accuracy.

Other QC operations were also performed to verify the accuracy of the data produced. These operations included calibration drift and calibration error determinations. Additional procedures such as linearity check, sample bias, leak checks, and gas stratification were also performed. These are further discussed in Section 6.

### **5.1.5 Example Daily Operating Procedure**

The following is a detailed standard operating procedure for calibrating and operating the CEMS:

1. Turn on computer and printer, put printer on-line, and load the DAS program. Be sure that the THC instrument has been on with the FID flame lit for several hours.
2. Synchronize watch with sample location leaders.
3. Turn on strip chart recorders (SCR) and make appropriate notes on charts and in logbook (write down all procedures and observations in logbook and on SCRs as the day progresses).
4. Open all calibration gas cylinders so that they may be introduced to the instruments.
5. Perform daily pre-test leak check on CEMs as discussed in Section 6. If a zero gas is used for this procedure, zero all instruments at this time. Enter these values in the computer calibration routine. Be sure to check and maintain all flows throughout calibration and operation.
6. Introduce the THC span gas.

7. Make adjustments to the THC instrument as required and enter the value into the computer calibration routine.
8. Introduce QC gases to instruments to determine calibration error. Record at least one minute of data for each. If the QC gas response is not within  $\pm 5\%$  of the calibration gas value, the operator will recalibrate the instrument, or perform other corrective actions.
9. Begin sampling routine, with the computer on standby.
10. Start the data acquisition system when signaled by radio that system is in stack.
11. Carefully check all flows and pressures during the operation of the instruments and watch for apparent problems in any of the instruments, such as unusual readings or unreasonable fluctuations.
12. Stop the data acquisition system at the end of the test when signaled.
13. Perform the final calibration (Repeat Steps 5-8) except make no adjustments to the system. This procedure was completed through the calibration valve so that gas is extracted through the entire system.
15. Calculate calibration drift.

All QA/QC procedures are fully explained in Section 6.

## 5.2 Method 18 for Determining Ethanol and Acetaldehyde Concentrations

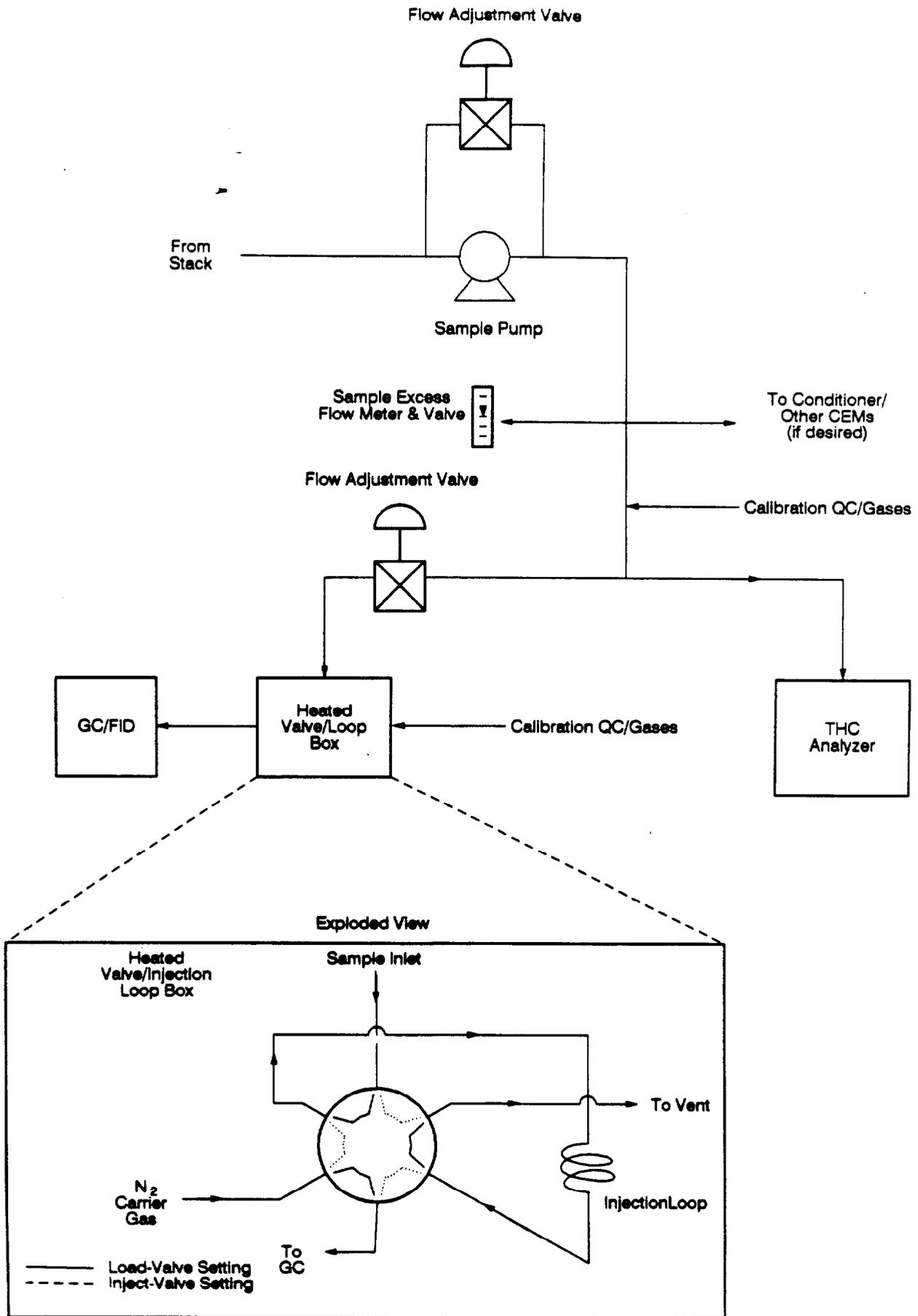
The following sections summarize the sampling and analytical protocols for Method 18 testing procedures targeted for ethanol and acetaldehyde.

### **5.2.1 Sample Collection**

A slip stream of sample gas was taken off the main heat trace line and directed to the GC injection loop as shown in Figure 5-2. Discrete GC injections were made to quantify the gas phase concentration of the two target analytes. This was accomplished by first allowing the gas to vent through the injection loop. Then the injection valve was turned so that the sample gas in the loop is directed into the GC/FID. The number of sample injections in a given testing time frame was determined based on how long it takes for the target compounds to elute from the GC column to the detector. This period of time is known as the retention time (RT). If other compounds are contained in the gas which elute at much longer RT than the target species, they may interfere with the later analyses and the column may have to be periodically cleaned. This is done by raising the oven temperature for a period of time. Cleaning the column decreases the number of GC injections that can be performed during the run time.

### **5.2.2 Sample Analysis**

The U.S. EPA Method 18 analysis is performed using a GC/FID to separate hydrocarbon species present in the exhaust gas stream. The FID employed in the GC works in a similar manner to that discussed in Section 5.1.2. By using a column filled with a sorbent, the various hydrocarbons in a given gas stream were separated so that the instantaneous concentrations measured relate to a specific hydrocarbon. Before sampling the source gas, the GC/FID system was calibrated with standard gas mixtures containing the hydrocarbons of interest. The calibration procedure established both calibration curves (response factors) and retention times for the hydrocarbons. The retention times were used to identify similar compounds in the source samples and the calibration curve was used to quantify the concentrations of the hydrocarbons.



**Figure 5-2. General Schematic of Method 18 Sample Injection System**

To use Method 18 effectively, standards were prepared to include concentrations over the entire range expected. For ethanol, a suitable collection of standards for bakery emissions concentrations are 0, 200, 800, 2000 and 8000 ppmv ethanol. If stack concentrations are higher than the highest standard, then either higher standards need to be prepared or purchased or the sample needs to be diluted with a gas tight syringe. Levels of acetaldehyde were expected to be less than 100 ppmv, therefore, standards of 0, 20, and 80 ppmv acetaldehyde were used.

The response and retention times of the individual hydrocarbons were recorded on a strip chart recorder. An integrator was used to measure peak areas and compile retention times and area counts. The peaks on the integrator recording were identified from the established retention times for each hydrocarbon of interest and the associated concentrations determined using the calibration curve as a reference.

The column and conditions were as follows:

- Column - 80/120 Carbopack B AW/6.6% Carbowax 20M;
- Carrier Gas - N<sub>2</sub>; and
- Temperature - 30°C (isothermal).

### 5.3 Determination of Volumetric Gas Flow Rates

Determination of gas flow rate incorporates the designation of traverse points by the U.S. EPA Method 1, the measurement of average duct gas velocity by Method 2, the measurement of gas molecular weight by Method 3, and the determination of gas moisture content by Method 4. The following sections discuss those procedures, and the U.S. EPA methods are included in the Appendices.

### **5.3.1 Method 2 Flow Rate by Pitot Tube**

Methods 2 calls for flow determination by measuring the velocity pressure with either an S type pitot or a standard pitot. The following discussion presents the principals of a Method 2 flow determination.

The pitot tube measurements in the ducts were obtained by moving the pitot tube and thermocouple to each of the traverse points designated in Method 1. The velocity pressure and temperature readings at each of those points were recorded. A static duct pressure determined at a single sample point was usually sufficient. This was accomplished by first rotating the pitot tube perpendicular to the flow (as in the cyclonic flow check) until the pressure reading was zero. One leg of the tubing was then disconnected from the manometer and the static pressure was compared against ambient pressure. If the positive tube was left attached to the manometer and the reading was positive, then the overall static was positive. If the negative leg was left attached, and the reading was positive, then the static was negative. The average duct gas velocity and volumetric flow rate was then calculated as shown in Section 7.

### **5.3.2 Method 3 Molecular Weight Determination**

The U.S. EPA Method 3 describes the procedures for obtaining the molecular weight of gas being sampled, which was necessary for the flow calculation. The composite molecular weight of the gas was determined from the relative amounts of individual constituents of the gas stream. In most cases, these principal constituents are oxygen, nitrogen, and carbon dioxide. Some stack gases, however, contain a significant amount of volatile organic or other compounds which can be included in the calculation.

The concentrations of O<sub>2</sub> and CO<sub>2</sub> were determined by a Fyrite analyzer. The molecular weights of such compounds were multiplied by their relative concentrations as shown in Section 7. The products were summed to give the dry

molecular weight of the gas being emitted. The final wet molecular weight calculation required gas moisture content values.

### **5.3.3 Method 4 Stack Gas Moisture Content**

Method 4 is the U.S. EPA method for establishing the moisture content of a stack gas. There are two recognized ways to obtain this moisture content. The first measures the amount of direct condensation of gas moisture in an impinger train. An alternate approximation technique used for stack gases with a temperature lower than 59°C (138°F) employs a wet-bulb/dry-bulb measurement.

Method 4 explains how a sample of the gas is drawn into impingers and condensed using an ice bath. Following the condensation impingers is a desiccant impinger (filled with silica gel) which removes the remaining non-condensed moisture from the gas stream. At the end of the test, the volume of the gas was measured with a dry gas meter and recorded; the impinger weights and silica gel weights were also measured and recorded. These data were used to calculate the percent moisture in the gas stream.

It is important to perform sampling train leak checks at the start and finish of sampling as well as before and after a port change. The method only calls for a post-test leak check but completion of a pre-test leak check indicates that the post-test check was successful as well. To leak check the assembled train, the nozzle end was capped off and a vacuum was pulled in the system of 1 inch Hg higher than the highest measured vacuum. When the system is evacuated, the volume of gas flowing through the system was timed for 60 seconds. The leak rate was required to be less than 4% of the sample rate or 0.02 cfm, whichever was less. After the leak rate was determined, the cap was slowly removed from the nozzle end until the vacuum drops off, and then the pump was turned off.

If the leak rate requirement is not met, the train can be systematically checked by first capping the train at the filter, at the first impinger, etc., until the leak is located and corrected. In the event that a final leak rate is found to be above the minimum acceptable rate upon removal from a port, the run may be rejected.

When the sampling train was ready for operation, the leak rates and sampling stop/start times were recorded on the sampling test log. Other events that occur during sampling, such as pitot cleaning, thermocouple malfunctions, or any other unusual occurrences, were recorded on the test log.

## **6.0 QUALITY ASSURANCE/QUALITY CONTROL**

Specific Quality Assurance/Quality Control (QA/QC) procedures were completed during the test program to ensure the production of useful and valid data throughout the course of the project.

Section 6.1 presents a summary of the QA program and parameters attained. The definitions of the terminology used in conjunction with QA/QC information is presented in Section 6.2. Section 6.3 presents the QA parameters for Method 25A tests. Section 6.4 presents the QA parameters for the Method 18 analyses. Section 6.5 presents a discussion of the carbon equivalent correction factors as well as a comparison of the two methods.

### **6.1 QA Summary**

The majority of reference method QA acceptance criteria were met during this test program. There were 10 days of testing using two THC monitoring systems (20 system days). Method 25A daily calibration drift did not exceed the criterion of  $\pm 3\%$  on nineteen of the twenty system days. The Site 1, Day 1 Method 25A test data exhibited calibration drift of 3.2% and the drift was corrected by assuming linear drift between the initial and final calibration. Method 25A calibration error was determined extensively over the course of the test program. Over 150 calibration error checks were performed during the test program and the majority these checks met the Method 25A criterion of  $\pm 5\%$  of the gas concentration. Method 25A sample bias checks, as well as O<sub>2</sub> leak checks, were also completed. The majority of these QA parameters met the acceptance limits.

Extensive Method 18 QA/QC procedures were also followed. Initial and final calibrations were performed. Calibrations for ethanol and acetaldehyde were all completed using from 3 to 5 calibration points. Multi-point calibrations were also

performed on methane for low concentrations on all of the test days (< 900 ppmC). On five of the test days, a single point calibration was used on higher methane values. This was due to the detector "overranging". After checking the methane values determined from a single point calibration against a multi-point calibration curve, no substantial difference was found.

Sample bias checks were also extensively conducted on the Method 18 sampling system. The majority of checks verified acceptable non-biased sampling. However, some bias checks revealed sample bias caused by the loss of heat in the heated tubing adjacent to the GC. These data points were invalid and testing was not continued until the problem was remedied and a successful bias check had been completed.

## **6.2**        **Definitions**

The overall QA/QC objective was to ensure precision, accuracy, completeness, comparability, and representativeness for each major measurement parameter called for in this test program. The terms used to define the QA/QC objectives are designed as follows:

- **Data Quality**: The characteristics of a product (measurement data) that bear on its ability to satisfy a given purpose. These characteristics are defined as follows:
  - **Precision** - A measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. Precision can be expressed in terms of the standard deviation (or the relative standard deviation).
  - **Accuracy** - The degree of agreement of a measurement (or an average of measurements of the same thing), X, with an accepted reference or true value, T, usually expressed as the difference between two values, X-T, or the difference as a percentage of the reference or true value,  $100 (X-T)/T$ , and

sometimes expressed as a ratio, X/T. Accuracy is a measure of the bias in a system.

- Completeness - A measure of the amount of valid data obtained from a measurement system compared with the amount that was expected to be obtained under prescribed test conditions.
- Comparability - A measure of the confidence with which one data set can be compared with another.
- Representativeness - The degree to which data accurately and precisely represent a characteristic of a population, variations of a parameter at a sampling point, or an environmental condition.
- Quality Control: The overall system of activities whose purpose is to provide a quality product or service: for example, the routine application of procedures for obtaining prescribed standards of performance in the monitoring and measurement process.
- Quality Assurance: A system of activities whose purpose is to provide assurance that the overall quality control is being done effectively. The completion of QA procedures generates indicating parameters that are a measurement of the general quality of the data.

### **6.3 Method 25A Sampling and Analytical QA Parameters**

#### **6.3.1 Calibration Drift**

The Method 25A Calibration drift values are given in Table 6-1.

#### **6.3.2 Calibration Error**

The calibration error checks are presented in Table 6-2. Table 6-3 presents on-site response THC response to ethanol QC challenges.

**Table 6-1**

**Method 25A Calibration Drift EPA Bakeries (1992)**

Site	Day	System 1 Drift (% of Range)		System 2 Drift (% of range)	
		Zero Drift	Span Drift	Zero Drift	Span Drift
1	1	0.04	3.22	0.03	-0.69
1	2	-0.01	-0.01	0.16	0.39
2	1	0.09	-0.13	0.04	-0.2
2	2	ND	-1.34	ND	-2.57
3	1	0.07	0.02	-0.14	-0.61
3	2	ND	-0.06	ND	-0.2
4	1	0.17	-0.08	-0.01	0.16
4	2	0.08	0.04	0.04	-0.47
4	3	0.03	-0.13	0.04	0.14
4	4	-0.09	-0.05	-0.01	-0.24

Note: Full range of analyzer was 0-10,000 ppmC. All calibrations performed with methane.

ND = Not determined

Table 6-2. Method 25A Calibration Error Results.  
EPA Bakeries, Site 1 (1992)

Methane QC Gas Conc. (ppmC)	System 1		System 2	
	THC Instrument Response (ppmC)	Calibration Error (%)	THC Instrument Response (ppmC)	Calibration Error (%)
SITE 1 - DAY 1				
2000	2039	2.0	2124	6.2
803	805	0.2	GC DOWN	NA
80.2	81.9	2.1	GC DOWN	NA
199.1	198.4	-0.4	GC DOWN	NA
0	4.3	NA	20.3	NA
0	2.7	NA	12.9	NA
2000	1982	-0.9	1963	-1.9
199.1	199.5	0.2	209.3	5.1
2000	1981	-1.0	2089	4.5
803	804.2	0.1	853.5	6.3
199.1	204.3	2.6	224	12.5
SITE 1 - DAY 2				
2000	2014	0.7	1980	-1.0
803	801	-0.2	807	0.5
199.1	197	-1.1	210	5.5
80.2	77.3	-3.6	89.6	11.7
2000	2003	0.2	1937	-3.2
0	3.7	NA	14	NA
2000	1990	-0.5	1986	-0.7
803	805	0.2	803	0.0
199.1	202	1.5	206	3.5

Table 6-2. Method 25A Calibration Error Results, (cont).  
 EPA Bakeries, Site 2 (1992)

Methane QC Gas Conc. (ppmC)	System 1		System 2	
	THC Instrument Response (ppmC)	Calibration Error (%)	THC Instrument Response (ppmC)	Calibration Error (%)
SITE 2 - DAY 1				
1490	1512.6	1.5	1514.2	1.6
798	812.9	1.9	814.2	2.0
199.1	213.6	7.3	217.6	9.3
3980	3979.6	-0.0	4013.4	0.8
199.1	215.9	8.4	204.9	2.9
798	807.6	1.2	748.6	-6.2
1490	1496.5	0.4	1436.1	-3.6
3980	3931.3	-1.2	3752.8	-5.7
1490	1493.1	0.2	1515.3	1.7
80.2	90.9	13.3	92.5	15.3
80.2	89.7	11.8	87.5	9.1
80.2	89	11.0	88.5	10.3
0	11.1	NA	1.5	NA
80.2	90	12.2	86.8	8.2
798	809.7	1.5	772.4	-3.2
199.1	212	6.5	217.9	9.4
1490	1505.1	1.0	1524.3	2.3
3980	3966.9	-0.3	3953.9	-0.7
0	9.2	NA	4.1	NA
SITE 2 - DAY 2				
199.1	209.3	5.1	206.3	3.6
798	782.6	-1.9	801.2	0.4
1490	1467.5	-1.5	1488.9	-0.1
2000	2041.4	2.1	1936.4	-3.2
2000	2099.5	5.0	1937.6	-3.1
3980	3924	-1.4	3836.6	-3.6
80.2	97.7	21.8	86.8	8.2
199.1	159.4	-19.9	102	-48.8
798	813.2	1.9	754.8	-5.4
1490	1481.1	-0.6	1428.9	-4.1
2000	2008	0.4	2031	1.6
3980	3846	-3.4	3723	-6.5

Table 6-2. Method 25A Calibration Error Results, (cont).  
EPA Bakeries, Site 3 (1992)

Methane QC Gas Conc. (ppmC)	System 1		System 2	
	THC Instrument Response (ppmC)	Calibration Error (%)	THC Instrument Response (ppmC)	Calibration Error (%)
SITE 3 - DAY 1				
798	817	2.4	769.7	-3.5
1490	1490	0.0	1390	-6.7
0	1.9	NA	3.4	NA
1490	1490.3	0.0	1419	-4.8
1490	1491.5	0.1	1429.2	-4.1
2000	2030.7	1.5	2071.6	3.6
0	7.1	NA	-14.1	NA
SITE 3 - DAY 2				
0	1.16	NA	-1.5	NA
80.2	77.7	-3.1	68.1	-15.1
199.1	198	-0.6	183	-8.1
80.2	75.3	-6.1	82.5	2.9
199.1	198.4	-0.4	188.4	-5.4
2000	2023	1.2	1909	-4.6
2030	2011	-0.9	1944	-4.2
798	801.5	0.4	783.2	-1.9
3960	3948	-0.3	3849	-2.8
80.2	77.2	-3.7	81.5	1.6
199.1	197.5	-0.8	189.7	-4.7
798	798	0.0	789.4	-1.1
2000	2016	0.8	1874	-6.3
3960	3945	-0.4	3847.2	-2.8
0	-1.97	NA	23.8	NA
1490	1484.5	-0.4	1518.8	1.9

Table 6-2. Method 25A Calibration Error Results, (cont).  
 EPA Bakeries, Site 3 (1992)

Methane QC Gas Conc. (ppmC)	System 1		System 2	
	THC Instrument Response (ppmC)	Calibration Error (%)	THC Instrument Response (ppmC)	Calibration Error (%)
SITE 4 - DAY 1				
3960	3964	0.1	3966	0.2
80.2	72.9	-9.1	64.4	-19.7
199.1	180.7	-9.2	179.9	-9.6
80.2	60.1	-25.1	60	-25.2
0	-21.8	NA	-6.6	NA
798	810.2	1.5	801.9	0.5
1490	1507.4	1.2	1504.8	1.0
2000	2036	1.8	1939	-3.1
SITE 4 - DAY 2				
3960	3954	-0.2	3960.4	0.0
1490	1506.7	1.1	1506.1	1.1
0	2.1	NA	5.1	NA
80.2	84.5	5.4	75.2	-6.2
199.1	207	4.0	192.6	-3.3
798	804.9	0.9	804.8	0.9
1490	1499	0.6	1509	1.3
2000	2030.2	1.5	1943.2	-2.8
3960	3938	-0.6	3981	0.5
0	8.3	NA	4.05	NA
3960	3964	0.1	3912	-1.2
200	201.6	0.8	192.2	-3.9
200	205.1	2.5	194.3	-2.8
80.2	83.8	4.5	82.9	3.4

Table 6-2. Method 25A Calibration Error Results, (cont).  
EPA Bakeries, Site 3 (1992)

Methane QC Gas Conc. (ppmC)	System 1		System 2	
	THC Instrument Response (ppmC)	Calibration Error (%)	THC Instrument Response (ppmC)	Calibration Error (%)
SITE 4 - DAY 3				
3960	3963	0.1	3958	-0.1
3960	3949	-0.3	3873	-2.2
0	-0.7	NA	-0.3	NA
3960	3954	-0.2	3941	-0.5
0	14.5	NA	-0.2	NA
3960	3936.5	-0.6	3930.6	-0.7
0	-0.96	NA	-2.7	NA
3960	3967.2	0.2	3988.9	0.7
199.1	202	1.5	189.3	-4.9
0	2.7	NA	3.8	NA
3960	3947	-0.3	3974	0.4
3960	3964	0.1	3969	0.2
3960	3948	-0.3	3990	0.8
798	796.5	-0.2	808.9	1.4
1490	1486.6	-0.2	1516.6	1.8
2030	2017.3	-0.6	2019.1	-0.5
SITE 4 - DAY 4				
199.1	202	1.5	187.7	-5.7
798	803	0.6	799.7	0.2
2030	2034.8	0.2	2032.8	0.1
80.2	84.4	5.2	67.6	-15.7
0	0.6	NA	-10.8	NA
0	-3.9	NA	-4.6	NA
199.1	200.2	0.6	187.4	-5.9
200	206.8	3.4	191.7	-4.2
2030	2034.6	0.2	2047.5	0.9
0	5.3	NA	-0.8	NA
199.1	199.6	0.3	193.7	-2.7
80.2	766	855.1	76.3	-4.9
0	-2.4	NA	-0.9	NA
80.2	77.8	-3.0	75.5	-5.9
199.1	196	-1.6	183.8	-7.7
798	793.2	-0.6	774.6	-2.9
80.2	83.5	4.1	75.1	-6.4
199.1	202.6	1.8	187.1	-6.0
798	796	-0.3	794.9	-0.4

**Table 6-3. On-Site Ethanol QC Challenges to the Method 25A THC Monitor  
EPA Bakeries (1992)**

Site	Test Day	Ethanol QC Gas Conc. (ppmC)	System 1		System 2	
			THC Instrument Response (ppmC)	Carbon Equivalent Correction Factor	THC Instrument Response (ppmC)	Carbon Equivalent Correction Factor
1	1	200	267.5	1.34	238.4	1.19
1	1	200	275.5	1.38	280.5	1.40
1	2	10000	11862	1.19	13569	1.36
1	2	2000	2852	1.43	2948	1.47
1	2	2000	2421	1.21	2731	1.37
1	2	200	272	1.36	274	1.37
			AVG	1.32	AVG	1.36
2	1	200	305.9	1.53	295.5	1.48
2	1	200	310.6	1.55	259.9	1.30
			AVG	1.54	AVG	1.39
3	1	200	320	1.60	283	1.42
3	1	200	302.4	1.51	277	1.39
3	1	498	763.2	1.53	720	1.45
3	1	498	759.6	1.53	694.9	1.40
3	1	498	756.6	1.52	756.6	1.52
3	2	200	307	1.54	286.2	1.43
3	2	200	300.1	1.50	316	1.58
3	2	498	755.5	1.52	765.7	1.54
			AVG	1.53	AVG	1.46
4	1	200	313.5	1.57	299.1	1.50
4	3	200	309.1	1.55	307.6	1.54
4	3	200	313.4	1.57	306.3	1.53
4	3	200	300	1.50	302	1.51
4	4	200	304.6	1.52	307.9	1.54
4	4	200	312.8	1.56	304.1	1.52
4	4	200	297.8	1.49	298.9	1.49
4	4	200	296.8	1.48	304.4	1.52
4	4	200	308.4	1.54	297.2	1.49
4	4	200	DOWN		300.2	1.50
			AVG	1.53	AVG	1.51

#### **6.4**            **Method 18 QA Parameters**

All calibration data from the Method 18 analyses is included in the Appendices. Both an initial and final calibration were performed on each day. Excessive drift was not found during any of the test days.

##### **6.4.1**            **Sample Bias**

Table 6-4 presents the Method 18 sample bias checks for Sites 2-4. The Site 1 bias check results are included in the appendices.

**Table 6-4. Method 18 Sample Bias Checks  
EPA Bakeries (1992)**

IND. NO.	Site/Day	Oven Location	Stack/ System Location	GAS CONC.(ppm)	GC ANALYTICAL RESULT	(%) DIFF	COMMENTS
190	4/1		Rack	80.2 METHANE	97.4	21	
191	4/1		Table	80.2 METHANE	84.7	5.6	
192	4/1		Rack	199.1 METHANE	200.5	0.7	
193	4/1		Table	199.1 METHANE	201.2	1	
194	4/1		Rack	80.2 METHANE	80	-0.2	
195	4/1		Rack	80.2 METHANE	78.1	-2.6	
196	4/1		Rack	80.2 METHANE	76.1	-5.1	
208	4/1		Rack	798 METHANE	804	0.8	SINGLE PT RUN 284 (6/30/92)
209	4/1		Table	798 METHANE	810	1.5	SINGLE PT RUN 284 (6/30/92)
210	4/1		Rack	1490 METHANE	1502	0.8	SINGLE PT RUN 286 (6/30/92)
211	4/1		Table	1490 METHANE	1514	1.6	SINGLE PT RUN 286 (6/30/92)
212	4/1		Rack	2000 METHANE	2040	2	SINGLE PT RUN 287 (6/30/92)
213	4/1		Table	2000 METHANE	2003	0.1	SINGLE PT RUN 287 (6/30/92)
233	4/1		Rack	199.1 METHANE	196.3	-1.4	SINGLE PT RUN 288
234	4/1		Table	199.1 METHANE	194	-2.6	SINGLE PT RUN 288
235	4/1		Table	200 ETHANOL	207	3.5	
235	4/2		Rack	3980 METHANE	3898	-1.6	
236	4/2		Table	3980 METHANE	4026	1.2	
237	4/2		Rack	1490 METHANE	1499	0.6	
238	4/2		Table	1490 METHANE	1540	3.4	
269	4/2		Table	80.2 METHANE	64.9	-19	RUN ANOTHER CHECK AT SEVERAL LEVELS
270	4/2		Rack	199.1 METHANE	194.8	-2.2	
271	4/2		Table	199.1 METHANE	197.3	-0.9	
272	4/2		Table	798 METHANE	788	-1.2	SINGLE PT RUN #284
273	4/2		Rack	798 METHANE	797	-0.1	SINGLE PT RUN #284
274	4/2		Table	1490 METHANE	1515	1.7	SINGLE PT RUN #286
275	4/2		Rack	1490 METHANE	1534	3	SINGLE PT RUN #286
276	4/2		Table	2000 METHANE	2037	1.9	SINGLE PT RUN #287
277	4/2		Rack	2000 METHANE	2014	0.7	SINGLE PT RUN #287
298	4/2		Table	200 ETHANOL	212	6	

Table 6-4. Method 18 Sample Bias Checks (Cont)  
EPA Bakeries (1992)

INI. NO	Site/Day	Oven Location	Stack/ System Location	GAS CONC. (ppm)	GC ANALYTICAL RESULT	(%) DIFF	COMMENTS
27	2/1		Front	1490 METHANE	14.89	0.1	S.P., COMPARISON TO SYRINGE INJECTION RUN 28 SMALL BACKGROUND < 15ppm USED USED FINAL METHANE CAL.  PROBLEM/CHECK REPLACE PROBLEM/CHECK, RERUN/REPLACE BETTER/CHECK/REPLACE BETTER/CHECK/REPLACE REPLACEMENT REPLACEMENT O.K.  SINGLE PT. RUN #26
41	2/1	Bun	Rear	N2	485.121	NA	
45	2/1	Bun	Rear	80.2 METHANE	77	-3.9	
46	2/1	Bun	Rear	80.2 METHANE	78.8	-1.6	
47	2/1	Bun	Front a	80.2 METHANE	43.2	-46	
48	2/1	Bun	Front a	80.2 METHANE	56.3	-30	
49	2/1	Bun	Front a	80.2 METHANE	77	-3.9	
50	2/1	Bun	Front a	80.2 METHANE	78.8	-1.7	
51	2/1		b		78.7	-1.9	
52	2/1		b		78.8	-1.7	
68	2/1		Rear	80.2 METHANE	70.6	-12	
70	2/1		Front	798 METHANE	771	-3.4	
71	2/1		Rear	199.1 METHANE	189	-5	
72	2/1		Front	199.1 METHANE	188	-5.5	
73	2/1		Front	200 ETHANOL	204	2	
74	2/1		Rear	200 ETHANOL	209	4.5	
122	2/2		Front	80.2 METHANE	77.8	-2.9	
123	2/2		Front	80.2 METHANE	78.9	-1.6	
116	2/2		Front	2000 METHANE	1896	-5.2	
130	2/2		Front	798 METHANE	777	-2.6	
135	2/2		Front	2000 METHANE	2099	-5	
136	2/2		Rear	2000 METHANE	2012	-0.6	
137	2/2		Front	3980 METHANE	3975	-0.1	
131	2/2		Rear	798 METHANE	779	-2.4	

a Nitta Moore Heat Trace check.

New 1/4 inch H.T. jumper to replace Nitta Moore.

Table 6-4. Method 18 Sample Bias Checks (Cont)  
EPA Bakeries (1992)

INI NO	Site/Day	Oven Location	Stack/ System Location	GAS CONC. (ppm)	GC ANALYTICAL RESULT	(%) DIFF	COMMENTS
20	3/1	Bun	Burner	798 METHANE	799	0.1	SINGLE PT, RUN #19
21	3/1	Bun	Oven	798 METHANE	776	-2.8	SINGLE PT, RUN #19
26	3/1		Burner	200 ETHANOL	203	1.5	INITIAL CAL.
42	3/1		Oven	1490 METHANE	1512	1.5	SINGLE PT, RUN #45
43	3/1		Burner	1490 METHANE	1508	1.2	SINGLE PT, RUN #45
65	3/1		Burner	498 ETHANOL	482	-3.2	
66	3/1		Oven	498 ETHANOL	486	-2.4	
67	3/1			80.2 METHANE	88.6	10.5	
68	3/1			80.2 METHANE	86.7	8.1	
69	3/1			199.1 METHANE	214	7.5	
70	3/1			199.1 METHANE	213	7	
104	3/2		Burner	80.2 METHANE	73.1	-8.9	
105	3/2		Oven	80.2 METHANE	82.6	3	
106	3/2		Burner	199.1 METHANE	168	-15.6	RERUN
107	3/2		Burner	199.1 METHANE	196	-1.5	O.K.
108	3/2		Oven	199.1 METHANE	205	3	
124	3/2		Burner	80.2 METHANE	80.6	0.5	
125	3/2		Oven	199.1 METHANE	198	-0.5	
126	3/2		Burner	199.1 METHANE	199	0	
147	3/2		Burner	80.2 METHANE	89.9	12.1	PEAK WIDTH SUSPECT
148	3/2		Oven	80.2 METHANE	76.3	-4.9	
149	3/2		Burner	199.1 METHANE	201	1	
150	3/2		Oven	199.1 METHANE	201	1	
151	3/2		Burner	798 METHANE	800	0.2	SINGLE PT RUN #158
153	3/2		Burner	798 METHANE	705	-11.6	RUN MIOMER LEVELS
154	3/2		Burner	2000 METHANE	2027	1.3	SINGLE PT RUN #159
155	3/2		Oven	2000 METHANE	2027	1.3	SINGLE PT RUN #159
156	3/2		Burner	3960 METHANE	3978	0.4	SINGLE PT RUN #160
157	3/2		Oven	3960 METHANE	3973	0.3	SINGLE PT RUN #160
161	3/2		Burner	200 ETHANOL	204	2	
162	3/2		Oven	498 ETHANOL	511	2.6	RERUN
163	3/2		Burner	82.5 ACETALDEHYDE	81.6	-1.1	
164	3/2		Oven	82.5 ACETALDEHYDE	79.3	-3.9	

**Table 6-4. Method 18 Sample Bias Checks (Cont)  
EPA Bakeries (1992)**

INJ. NO.	Site/Day	Oven Location	Stack/ System Location	GAS CONC. (ppm)	GC ANALYTICAL RESULT	(%) DIFF	COMMENTS
391	4/4		Table	200 ETHANOL	152	-24	
398	4/4		Table	200 ETHANOL	175	-13	
419	4/4		Table	200 ETHANOL	181	-9.5	
421	4/4		Rack	80.2 METHANOL	82.7	3.1	
422	4/4		Table	80.2 METHANE	82.3	2.6	
423	4/4		Rack	199.1 METHANE	199.3	0.1	

## 7.0

## DATA REDUCTION PROCEDURES

The following section details the calculations used for the U.S. EPA Bakeries test program.

### 7.1 Emission Calculations

The objective of the U.S. EPA Bakeries test program was to determine emissions of Total VOC as well as emissions of two of the primary VOC constituents, namely ethanol and acetaldehyde. The emission calculations were done using several methods. All rates are in units of lbs/hr.

#### 7.1.1 VOC Emissions

Emission rates of VOC as ethanol were calculated by multiplying the average VOC as ethanol concentration by the stack gas flow rate as follows:

$$\text{VOC}_{\text{ETOH}}^{\circ} = [\overline{\text{VOC}_{\text{ETOH}}}] \times Q_a \times \left( \frac{P_s}{T_s \times R \times 10^6} \right)$$

Where:

$Q_a$  = Volumetric flow of stack gas (acf/hr)

$P_s$  = Absolute stack Pressure (in Hg)

$T_s$  = Stack Gas Temperature ( $^{\circ}\text{R}$ )

$R$  = Universal Gas Constant (21.85 in Hg-cf/lb-mole- $^{\circ}\text{R}$ )

## 7.1.2 Ethanol and Acetaldehyde Emissions

Ethanol and acetaldehyde emissions were calculated by multiplying the average concentration by the stack gas flow rates. Average concentrations were determined as shown in Section 7.2.2 through 7.2.5. Emission rates were calculated as follows:

$$E_{\text{ETOH}}^{\circ} = [\overline{\text{ETOH}}] \times Q_s \times \left( \frac{P_s}{T_s \times R \times 10^6} \right)$$

$$E_{\text{AA}}^{\circ} = [\overline{\text{AA}}] \times Q_s \times \left( \frac{P_s}{T_s \times R \times 10^6} \right)$$

## 7.2 Average VOC Concentration Calculations

The calculations used for determining concentrations are given in the following section.

### 7.2.1 Average VOC as Ethanol Concentration

The average VOC as ethanol concentration (ppmV as ethanol) was calculated as follows:

$$[\overline{\text{VOC}}]_{\text{ETOH}} = \frac{[\overline{\text{NMHC}}]}{1.42}$$

where:

1.42 = Ethanol Carbon Equivalent Correction Factor  
(i.e., 10 ppmv ethanol = 14 ppmC THC)

The average non-methane hydrocarbon concentration (ppmC/wet) was calculated as follows:

$$[\overline{\text{NMHC}}] = \left( 1 - \left[ \frac{[\text{CH}_4]}{[\text{THC}]} \right] \right) \times [\overline{\text{THC}}]$$

The average CH<sub>4</sub> to THC ratios (dimensionless) were calculated as follows:

$$\left[ \frac{[\text{CH}_4]}{[\text{THC}]} \right] = \frac{\sum_{i=1}^N \left( \frac{[\text{CH}_4]_i}{[\text{THC}]_i} \right)}{N}$$

where:

N = Number of GC injections during test period

[CH<sub>4</sub>]<sub>i</sub> = CH<sub>4</sub> concentration at the time of the GC injection  
(ppmC/wet)

[THC]<sub>i</sub> = THC concentration at the time of the GC injection  
(ppmC/wet)

The average THC concentration (ppmC/wet) was calculated as follows:

$$[\overline{\text{THC}}] = \frac{\sum_{i=1}^n [\text{THC}]_i}{n}$$

where:

n = Number of THC readings during the test period

### 7.2.2 Average Ethanol Concentration

The average ethanol concentration (ppmV/wet) using both the Method 18 ethanol and Method 25A THC results was calculated as follows:

$$[\overline{\text{ETOH}}]_{\text{THC}} = \left[ \frac{\overline{\text{ETOH}}}{\overline{\text{THC}}} \right] \times [\overline{\text{THC}}]$$

The average ethanol-to-THC ratios (ppmV/ppmC) were calculated as follows:

$$\left[ \frac{\overline{\text{ETOH}}}{\overline{\text{THC}}} \right] = \frac{\sum_{i=1}^N \left( \frac{[\text{ETOH}]_i}{[\text{THC}]_i} \right)}{N}$$

where:

$[\text{ETOH}]_i$  = Ethanol Concentration from GC analysis (ppmv/wet)

N = Number of GC injections

### 7.2.3 Average Ethanol Concentration By GC Only

The average ethanol concentrations (ppmV/wet) determined from the Method 18 analyses were calculated as follows:

$$\overline{[\text{ETOH}]_{\text{GC}}} = \frac{\sum_{i=1}^N [\text{ETOH}]_i}{N}$$

#### 7.2.4 Acetaldehyde Concentration By GC and THC

The average acetaldehyde concentration (ppmV/wet) determined using both the Method 18 acetaldehyde and Method 25A THC results was calculated as follows:

$$[\overline{\text{AA}}]_{\text{THC}} = \left[ \frac{\overline{\text{AA}}}{\overline{\text{THC}}} \right] \times [\overline{\text{THC}}]$$

The average acetaldehyde to THC ratios (ppmV/ppmC) were calculated as follows:

$$\left[ \frac{\overline{\text{AA}}}{\overline{\text{THC}}} \right] = \frac{\sum_{i=1}^N \left( \frac{[\text{AA}]_i}{[\text{THC}]_i} \right)}{N}$$

#### 7.2.5 Average Acetaldehyde Concentration By GC Only

The average acetaldehyde concentration (ppmV/wet) determined from the Method 18 analyses was calculated as follows:

$$[\overline{AA}]_{GC} = \frac{\sum_{i=1}^N [AA]_i}{N}$$

### 7.2.6 Comparison Of GC And THC Results

The comparison of the corrected sum of ethanol, acetaldehyde, and methane Method 18 concentrations to the THC concentration was determined as follows:

$$\left( \frac{\overline{GC}}{\overline{THC}} \right) = \frac{\sum_{i=1}^N \frac{GC_i}{THC_i}}{N} \times 100$$

where:

$THC_i$  = THC concentrations determined from the Method 25A monitor at the same time as the GC injection (ppmC).

$$GC_i = \left( \frac{[ETOH]_i}{1.42} + \frac{[AA]_i}{1.23} + [CH_4]_i \right)$$

where:

$[ETOH]_i$  = Ethanol concentration determined from a single GC analysis (ppmv/wet)

$[AA]_i$  = Acetaldehyde concentration determined from a single GC analysis (ppmv/wet)

$[CH_4]_i$  = Methane concentration determined from a single GC analysis (ppmv/wet)

### 7.3 Method 25A Calculations

This section briefly summarizes calculations used for the Method 25A analysis. The computer controlled data acquisition system scanned each channel approximately 1800 times per minute and stored periodic averages on disk and hard copy. The averaging computer period varied throughout the test program ranging from 10 seconds to 1 minute. Pre-test calibration, post-test calibration drift checks, and calibration error checks were saved on disk. Instrument drift was evaluated after the post-test calibration with an acceptable criterion of  $\pm 3$ . The computer DAS reported THC concentrations calculated as follows:

$$C_{\text{sample}} = \text{RSP}_{\text{sample}} \times \text{RFAC} + C_{\text{rsp}=0}$$

where:

- $C_{\text{sample}}$  = Observed concentration of sample gas (ppmv or %v, dry)
- $\text{RSP}_{\text{sample}}$  = Observed instrument sample voltage response (volts)
- $C_{\text{rsp}=0}$  = Calculated concentration corresponding to an instrument response of 0 volts ( Y intercept)
- $\text{RFAC}$  = Calibration response factor (slope)

$$\text{RFAC} = \frac{(\text{SPAN} - \text{ZERO})}{(\text{RSP}_{\text{span}} - \text{RSP}_{\text{zero}})}$$

where:

- $\text{SPAN}$  = Concentration of high (span) calibration gas (ppmv)
- $\text{ZERO}$  = Concentration of low (zero) calibration gas (ppmv)

$RSP_{span}$  = Observed instrument voltage response to the span calibration gas (volts)

$RSP_{zero}$  = Observed instrument voltage response to the zero calibration gas (volts)

Span and zero calibration drifts are calculated as follows:

$$\text{Drift} = \frac{(C_F - C_I)}{FULL\ RANGE} \times 100$$

where:

Drift = Span calibration drift (% of Scale)

Full Range = Full Range of the Instrument (i.e. 0-500 ppmv)

$C_F$  = Observed concentration predicted by the final calibration - (ppmv)

$C_I$  = Observed concentration predicted by the initial calibration (ppmv)

Average concentrations of THC were calculated for the test duration of interest.

### 7.3.1 Method 18 Data Reduction

The concentration of ethanol, acetaldehyde, methane and ethane in the stack gas was determined directly as parts per million by volume (ppmv) on a wet basis. An electronic integrator would convert the GC electrical peak signals to a peak area value. A linear regression was completed using calibration gas concentration versus peak area response. Sample responses (peak areas) were then used in the calibration regression to determine the respective concentration.

### 7.3.2 Manual Gas Sampling Methods

Calculations for determining flow rate, moisture content, and gas molecular weight are described in Figures 7-1 and 7-2.

**RADIAN SOURCE TEST  
EPA METHODS  
DEFINITION OF TERMS**

<b>Parameter</b>	<b>Units</b>	<b>Definition</b>
t	min.	Total Sampling Time
D <sub>n</sub>	in.	Sampling Nozzle Diameter
V <sub>m</sub>	ft <sup>3</sup>	Absolute Volume of Gas Sample Measured by DGM (uncorrected)
M <sub>w</sub>	g	Total Mass of Water Collected
M <sub>p</sub>	g	Total Mass of Particulate Collected
P <sub>m</sub>	in. Hg	Absolute Meter Pressure
ΔH	in. H <sub>2</sub> O	Average Static Pressure of DGM
T <sub>m</sub>	°F	Average Temperature of DGM
P <sub>bar</sub>	in. Hg	Barometric Pressure
%CO <sub>2</sub>	% vol-dry	Carbon Dioxide Content of Flue Gas
%O <sub>2</sub>	% vol-dry	Oxygen Content of Flue Gas
%N <sub>2</sub>	% vol-dry	Nitrogen Content of Flue Gas (by difference)
A <sub>s</sub>	ft <sup>3</sup>	Cross-sectional Area of Stack (Duct)
T <sub>s</sub>	°F	Temperature of Stack
P <sub>s</sub>	in. Hg	Absolute Stack Gas Pressure
Static	in. H <sub>2</sub> O	Stack Static Pressure
V <sub>m(std)</sub>	dscf	Volume of Gas Sampled at Standard, Dry Conditions <sup>a</sup>
V <sub>w</sub>	scf	Volume of Water Vapor in Gas Sample, Std

**Figure 7-1. Definition of Terms for Method 1-4 Calculations**

**RADIAN SOURCE TEST  
EPA METHODS  
DEFINITION OF TERMS  
(Continued)**

<b>Parameter</b>	<b>Units</b>	<b>Definition</b>
$B_{ws}$		Fraction of Water Vapor in Stack Gas
$M_d$		Fraction by Volume of Dry Gas in Gas Sample ( $1-B_{ws}$ )
$MW_d$	lb/lb mole	Molecular Weight of Dry Stack Gas, Dry Basis
$MW_s$	lb/lb mole	Molecular Weight of Stack Gas, Wet Basis
$C_p$		Pitot Coefficient (typically 0.84)
$C_s$	grains/ft <sup>3</sup>	Concentration of Particulate in Flue Gas
$E$	lb/hr	Emission Rate of Particulate
$Q_{sd}$	dry, ft <sup>3</sup> /min.	Average Stack Dry Volumetric Flow Rate
$V_s$	ft/sec	Velocity of Stack Gas
$Y$		Test Meter Calibration Coefficient
$\Delta P$	in. H <sub>2</sub> O	Stack Gas Velocity Pressure

**Figure 7-1. Continued**

**RADIAN SOURCE TEST  
EPA METHOD 2 - 5  
SAMPLE CALCULATION**

- 1) Volume of dry gas sampled at standard conditions (68°F, 29.92 in. Hg):

$$V_{m(\text{std})} = \frac{Y \times V_m \times 528 \times [P_{\text{bar}} + (\Delta H/13.6)]}{29.92 \times (T_m + 460)}$$

- 2) Volume of water vapor at standard conditions:

$$V_w = \frac{0.04715 \text{ ft}^3}{g \times M_w}$$

- 3) Fractional moisture content in stack gas:

$$B_{ws} = \frac{V_w}{V_{m(\text{std})} + V_w}$$

- 4) Mole fraction of dry stack gas:

$$M_d = 1 - B_{ws}$$

- 5) Absolute stack gas pressure:

$$P_s = P_{\text{bar}} + \frac{\text{Static}}{13.6}$$

**Figure 7-2. Example of Method 1-4 Calculations**

6) Average molecular weight of dry stack gas:

$$\text{Dry: } MW_d = (0.32 \times \%O_2) + (0.44 \times \%CO_2) + [0.28 \times (100 - (\%O_2 + \%CO_2))]$$

7) Stack gas velocity at stack conditions:

$$V_s = 85.49 \times 0.84 \times \sqrt{\Delta P} \times \sqrt{\frac{T_s + 460}{P_s \times MW_s}}$$

8) Average stack gas volumetric flow at dry, standard conditions:

$$Q_{sd} = V_s \times A_s \times M_d \times \frac{528 \times P_m}{T_s \times 29.92} \times \frac{60 \text{ sec}}{\text{min}}$$

Figure 7-2. Continued

## **APPENDIX C**

### **Site 3**

- C.1 Method 25A (THC) Log**
- C.2 Method 25A (THC) Data**
- C.3 Method 18 Analytical Summary**
- C.4 Method 18 Chromatogram**
- C.5 Field Flow Measurements Data Sheets**
- C.6 Field H<sub>2</sub>O Data Sheets**
- C.7 Flow Calculations**
- C.8 Test Log**
- C.9 Method 25A SCR Copies**

Method C.1

Method 25A (THC) Log

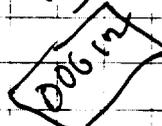
SIGNATURE CRP DATE \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT EPA/EMB Bukaris JOB NO. \_\_\_\_\_

SUBJECT THC LOG - MAIERS - SITE 3 SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

DAY 2 - SITE 3

(6/22/82)

<u>TIME</u>	<u>EVENT</u>	<u>RESULT</u>
10:20	CAL	0: 1490
1022 - 1040	Read Co oven Burner	T = R = (B#2)
1041 - 1045	788 QC	T = 817.9 R = 768.7
1048 - 1101	Read Co oven Read Co Burner 2	
1104 - 1110	Read Co oven Burner 1	
1126 - 1131	200 Ethanol	T 320.3 R = 283.0
1132 - 1148	Read Co 	oven = T Burner 2 = R
1149 - 1158	Read Co 	oven = T Burner 1 = R
1203 - 1331	<del>Polson</del> Polson "Diet Light Wheat"	oven = Rack Burner = Table
1331 - 1347	Transient	
1351 - 1556	1470 QC	T = 1490 R = 1390
1358	Recal	

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT \_\_\_\_\_ JOB NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

DAY 2 (cont) SITE 3 (6/26/92)

TIME	EVENT	RESULT
14:01	0 Gas QC	T = 1.9 R = 3.4
14:04-1405	1490 QC	T = 1480.3 R = 1418.0
1407-1511	10" Butth whip - Peterson	Burnout Over R
1511-1546	TRANSIENT	
1546-1642	14" Butth whip - Peterson	Burnout Over R
1644-1646	3280 QC	Gas Bottle Empty
1647-1649	1490 QC	T = 1491.5 R = 1429.2 ✓
1650-1653	200 Ethanol QC	T = 302.4 R = 277.4
1653-1656	2000 QC1	T = 2030.7 R = 2091.6
1704-1705	498 Ethanol	T = 763.2 R = 720.5
1709-1711	0 Gas QC	T = 7.1 R = -14.1 ✗
1718-1719	498 Ethanol	T = 759.6 R = 694.9

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT \_\_\_\_\_ JOB NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Page 1 (cont)

SITE 3 (6/22/12)

TIME

EVENT

RESULT

1730-31

498 Ethanol QC

T = 756.6

R = 756.6

1753-

Sample/QC

SIGNATURE CRP DATE \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT EPA/EMB Baker JOB NO. \_\_\_\_\_

SUBJECT THC Log - Meters - Site 3 SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Day 2 SITE 3 (6/24/82)

<u>TIME</u>	<u>EQUIP</u>	<u>RESULT</u>
09:58	Cul	0.1480
09:59-1001	Zero Gas	T = 1.16 R = 1.5
1002 - 1006	80.2 QC	T = 77.7 R = 68.1
1008 - 1014	199.1 QC	T = 198.0 R = 183.0
10:15 - 10:27	Readco	Over (T) = Barner (R) =
1028 - <del>1038</del> 1046	Readco	over T Barner (1) =
1046 - 1103	Readco	Over (T) Barner (2)
1104 - 1115	Readco	over Barner 1
11:16 - 11:41	TRANSIENT	
11:42 - 12:10	Peterson	Barner (T) Over (R)
12:22-12:25	80.2 QC	T = 75.3 R = 82.5
12:26-12:32	197.1 QC	T = 198.4 R = 188.4

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT \_\_\_\_\_ JOB NO. \_\_\_\_\_

SUBJECT \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

<u>TIME</u>	<u>EVENT</u>	<u>RESULT</u>
	DAY 2 (cont)	SITE 3 (6/24/92)
12:39	"B" cal	0 - 1480 span. 05? .02%
1248-1251	2000 QC	T = 2023 R = 1909
1251 - <del>1256</del> 1256	200 e-Manual	T = 302.1 R = 286.2
	2030 QC	T = 2011 R = 1844
1257-1259	298 QC	T = 801.5 R = 783.2
1302-1305	3960 QC	T = 3848 R = 3849
1307-1402	Peterson (KIND IS TRANSIENT? return hole then over)	Burial (T) drill (R)
1415-1439	TRANSIENT	
1439-1526	Peterson	(T) = (R) =
1526-1600	TRANSIENT	
1601-1707	Peterson	(T) (R)
1713	80.2 QC	T = 77.2 R = 81.5

DAY 2 (cont) SITE 3 (6/24/12)

TIME	EVENT	RESULT
1714 - 1717	189.1 QC	T = 187.5 R = 189.7
1718 - 1722	798 QC	T = 788.0 R = 789.4
1728:07 - 1732	2000 QC	T = 2016 R = 1874
1732 - 1736	3260 QC	T = 3845 R = 3847.2
1747 - 1749	200 Ethanol	T = 300.1 R = 316.1
1801:00 - 1805	W <sub>2</sub> QC	T = 1.97 R = 23.8
1800 - 1814	82.5 A.A.	T = 98.9 R = 101.0
1758 - 1800	498 Ethanol	T = 755.5 R = 765.7
1824	FINAL CAL	0.1470
	1490	
	1489.5	
	1518.8	
		T = 0.00
		R = 0.17
		span +.06
		0.29

Appendix C.2

Method 25A (THC) Data

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
09:03:42	-47.8432	-1.93968						
09:04:42	-47.9866	-1.97389						
09:05:42	-48.0937	-1.98870						
09:06:42	-48.1753	-1.99444						
09:07:42	-47.7024	-1.87379						
09:08:42	4089.973	388.8781						
09:09:42	831.9867	709.3164						
09:10:42	755.868	724.6825						
09:11:42	757.8665	736.8448						
09:12:42	770.6285	741.1468						
09:13:42	394.7205	370.3606						
09:14:42	90.89713	84.04536						
09:15:42	6.617074	1.377238						
09:16:42	15.49941	8.974648						
09:17:42	772.3284	684.5458						
09:18:42	821.2523	751.0015						
09:19:42	809.5637	752.1714						
09:20:42	708.0168	685.2773						
09:21:42	665.5768	661.887						
09:22:42	1975.375	1956.619						
09:23:42	2146.121	2171.53						
09:24:42	2148.007	1975.029						
09:25:42	2106.238	1981.57						
09:26:42	568.6359	561.9384						
09:27:42	23.66049	18.00838						
09:28:42	1309.136	1241.555						
09:29:42	1019.646	1004.042						
09:30:42	769.5557	729.6947						
09:31:42	2006.903	1909.729						
09:32:42	3845.868	3654.355						
09:33:42	3862.324	3583.426						
09:34:42	3920.87	3712.508						
09:35:42	1856.025	1867.444						
09:36:42	1551.914	1531.28						
09:37:42	1527.623	1486.386						
			OVEN			BURNER		
			ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
			(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
			=====			=====		
		READCO						
		OVEN						
		BURNER 2						
		SAMPLE						
10:22:38	1336.747	1190.208						
10:23:08	1266.944	949.5876						
10:23:38	1268.339	955.3824						
10:24:08	1277.518	968.2369						
10:24:38	1289.637	991.9884						
10:25:08	1294.19	1021.441						
10:25:38	1294.278	1066.698						
10:26:08	1316.6	1129.963						
10:26:38	1361.341	1170.816						





6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
11:07:08	1480.015	1273.834				840.6	12.08	70.6
11:07:38	1476.711	1302.56				ETH/THC	CH4/THC	AA/THC
11:08:08	1481.363	1316.37				ERR	ERR	ERR
11:08:38	1482.638	1269.776						
11:09:08	1470.789	1145.408						
11:09:38	1474.307	1135.046						
11:10:08	1464.59	1222.926						
11:10:38	1441.245	1227.702						
11:11:08	1416.325	1211.141						
	1472.485	1223.662						
		END						
11:11:38	1400.098	1150.608						
11:12:08	1363.542	1041.333						
11:12:38	1303.787	936.0345						
11:13:08	1211.526	803.8728						
11:13:38	1073.768	496.8482						
11:14:08	894.6726	389.8996						
11:14:38	735.6611	381.6217						
11:15:08	611.4138	315.8564						
11:15:38	506.176	263.3347						
11:16:08	434.6357	221.6648						
11:16:38	386.2221	186.2261	388.9	0.83	8.82			
11:17:08	337.8273	158.1615	ETH/THC	CH4/THC	AA/THC			
11:17:38	306.6997	129.1491	100.6933	0.214902	2.283660101			
11:18:08	283.4942	107.2753						
11:18:38	256.0406	95.94395						
11:19:08	239.1466	83.40245						
11:19:38	230.1915	76.74185						
11:20:08	220.0814	70.83774						
11:20:38	213.0286	65.88301						
11:21:08	209.9923	67.68884						
11:21:38	206.9172	74.90903						
11:22:08	203.9484	88.25711						
11:22:38	210.6913	114.4038						
11:23:08	225.1262	164.6028						
11:23:38	253.3593	242.8147						
11:24:08	299.6558	352.5186						
11:24:38	377.5904	455.4771						
11:25:08	492.8909	527.7652						
11:25:38	602.6826	586.6474						
11:26:08	530.6403	679.15						
11:26:38	329.7202	522.7698						
11:27:08	319.3692	287.6207						
11:27:38	315.9869	276.451						
11:28:08	314.616	305.5936						



6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
11:48:38	1119.507							341.0381
11:49:08	1098.402	852.9918						
11:49:38	1064.615	843.3903						
11:50:08	1040.105	779.5899						
11:50:38	1032.993	768.9005						
11:51:08	1048.061	777.8958						
11:51:38	1053.171	864.4339						
11:52:08	1073.645	922.4988						
11:52:38	1098.512	954.6619						
11:53:08	1081.664	968.5966						
11:53:38	1050.713	958.2826						
11:54:08	1045.355	954.3661						
11:54:38	1054.313	950.6748	853.4	0.58	18.83			
11:55:08	1013.186	900.6906	ETH/THC	CH4/THC	AA/THC			
11:55:38	1005.71	749.2424	80.94370	0.055012	1.785997137			
11:56:08	1017.627	663.7227						
11:56:38	1028.517	622.8699						
11:57:08	1058.305	642.7078						
11:57:38	1068.1	796.5486						
11:58:08	1059.892	882.4223						
11:58:38		914.8357						260.2535
AVG	1055.619	838.4661						
		END						
11:59:08	85.03035	916.7311						
11:59:38	1384.325	1044.114						
12:00:08	1444.018	1072.101						
12:00:38	1436.897	1039.826						
12:01:08	1449.578	831.5298						
12:01:38	1465.765	195.4221						
12:02:08	1487.941	162.7333						
12:02:38	1469.041	949.7057						
			OVEN			BURNER		
			ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
			(ppmV/wet (ppmV/wet (ppmV/wet) :			(ppmV/wet (ppmV/wet (ppmV/wet)		
	BURNER	OVEN	PETERSON SAMPLE			=====		
12:03:08	1452.657	1766.945						
12:03:38	1510.106	1683.43	670.2	660.8	10.8			
12:04:08	1546.84	1598.393	ETH/THC	CH4/THC	AA/THC			
12:04:38	1395.861	1424.712	39.81157	39.25319	0.641547317			
12:05:08	1260.231	1241.804						
12:05:38	1365.387	1075.401						
12:06:08	944.8478	971.9283						
12:06:38	159.8701	777.0341						
12:07:08	620.8464	601.5889						
12:07:38	1133.911	607.3264						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
12:08:08	1445.504	729.5186						
12:08:38	1481.296	866.5181						
12:12:25	53.57587	709.4116						
12:12:55	37.94704	632.7017				0	24.9	2.97
12:13:25	33.72022	576.3273				ETH/THC	CH4/THC	AA/THC
12:13:55	29.23079	557.4146				0	46.47614	5.543540403
12:14:25	340.4267	548.1689						
12:14:55	77.59718	577.5532						
12:15:25	1092.38	689.554						
12:15:55	1421.902	957.3948						
12:16:25	1431.664	1185.108						
12:16:55	1473.959	1362.266						
12:17:25	1600.919	1453.194						
12:17:55	1468.257	1576.303						
12:18:25	1487.913	1618.019						
12:18:55	1232.566	1676.023						
12:19:25	633.4641	1623.27						
12:19:55	64.74446	1384.653						
12:20:25	36.0027	1284.167						
12:20:55	30.7967	1358.863						
12:21:25	26.26653	1413.385	752.2	180.4	22.4			
12:21:55	24.40779	1510.991	ETH/THC	CH4/THC	AA/THC			
12:22:25	225.6529	1596.88	53.21975	12.76368	1.584847723			
12:22:55	537.3858	1751.79						
12:23:25	1294.741	1956						
12:23:55	1476.275	2212.65						
12:24:25	1273.051	2286.577						
12:24:55	1369.029	2301.924						
12:25:25	1011.579	2278.337						
12:25:55	1187.52	2216.297						
12:26:25	913.6742	2196.868						
12:26:55	144.1257	2068.036						
12:27:25	417.1275	2006.001						
12:27:55	159.035	1987.818						
12:28:25	522.0523	2071.852						
12:28:55	279.198	2078.477						
12:29:25	493.3214	2052.25						
12:29:55	1097.378	2190.824						
12:30:25	1508.921	2416.393						
12:30:55	1589.782	2515.267						
12:31:25	1318.497	2607.809				107.1	751.5	6.57
12:31:55	772.8573	2475.81				ETH/THC	CH4/THC	AA/THC
12:32:25	475.0312	2346.978				8.122885	56.99671	0.498294649
12:32:55	154.999	2165.415						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
12:33:25	518.4186	2128.895						
12:33:55	69.97709	2068.428						
12:34:25	245.4867	1978.783						
12:34:55	795.3628	2057.254						
12:35:25	1479.797	2258.939						
12:35:55	1513.426	2441.53						
12:36:25	1579.818	2567.577						
12:36:55	1413.291	2600.028						
12:37:25	1443.127	2657.791						
12:37:55	1054.571	2595.184						
12:38:25	1128.901	2456.462						
12:38:55	1622.644	2542.013						
12:39:25	1193.197	2605.573						
12:39:55	1055.923	2579.693						
12:40:25	873.4497	2547.609	1246.1	655.3	33.1			
12:40:55	204.7464	2276.731	ETH/THC	CH4/THC	AA/THC			
12:41:25	720.7962	2223.439	48.91252	25.72215	1.299257460			
12:41:55	1037.21	2262.9						
12:42:25	762.5325	2263.875						
12:42:55	1160.84	2256.503						
12:43:25	1448.823	2313.735						
12:43:55	1506.447	2403.189						
12:44:25	1490.407	2446.733						
12:44:55	1496.546	2487.402						
12:45:25	1494.632	2478.042						
12:45:55	1484.87	2485.617						
12:46:25	1499.195	2465.342						
12:46:55	1059.532	2350.15						
12:47:25	856.4601	2217.969						
12:47:55	1669.349	2208.416						
12:48:25	1676.087	2322.57						
12:48:55	1253.949	2367.945						
12:49:25	140.2847	2104.736				28.3	71.9	5.18
12:49:55	47.40233	1851.176				ETH/THC	CH4/THC	AA/THC
12:50:25	38.05404	1753.583				20.17326	51.25291	3.692491055
12:50:55	26.78532	1667.583						
12:51:25	27.96951	1636.58						
12:51:55	36.44591	1562.954						
12:52:25	146.343	1501.248						
12:52:55	771.7866	1557.652						
12:53:25	767.5957	1567.087						
12:53:55	1272.505	1568.067						
12:54:25	1604.563	1632.289						
12:54:55	1606.982	1733.254						
12:55:25	1651.387	1831.656						
12:55:55	1525.182	1932.061						
12:56:25	1498.195	1978.258						
12:56:55	1507.348	2058.446						

6/22/92 SITE 3 DAY 1

TIME	THC TABLE (ppmC)	THC RACK (ppmC)
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FRONT GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
----------------------	-------------------	----------------------------

REAR GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
----------------------	-------------------	----------------------------

12:57:25	1653.048	2160.092
12:57:55	1868.938	2219.124
12:58:25	1829.712	2286.514
12:58:55	1653.772	2347.801
12:59:25	973.5864	2248
12:59:55	108.8523	1980.374
13:00:25	39.89492	1773.34
13:00:55	29.04637	1688.113
13:01:25	721.8183	1718.418
13:01:55	1455.366	2006.461
13:02:25	1485.613	2185.188
13:02:55	1483.484	2254.535
13:03:25	1476.666	2297.503
13:03:55	1488.402	2317.499
13:04:25	1481.326	2329.406
13:04:55	1483.167	2341.238
13:05:25	1464.516	2329.966
13:05:55	901.132	2219.819
13:06:25	191.8895	1990.343
13:06:55	52.14293	1739.293
13:07:25	42.08542	1629.922
13:07:55	35.75949	1655.804
13:08:25	30.06516	1568.936
13:08:55	720.8793	1574.719
13:09:25	1364.24	1735.19
13:09:55	1498.345	1933.529
13:10:25	1622.733	2010.683
13:10:55	1563.534	2076.741
13:11:25	1461.302	2015.308
13:11:55	1419.833	1903.371
13:12:25	1006.865	1771.507
13:12:55	252.9122	1486.897
13:13:25	391.9581	1218.597
13:13:55	1069.799	1220.753
13:14:25	1491.411	1410.694
13:14:55	1485.058	1626.353
13:15:25	1483.835	1774.389
13:15:55	1469.769	1876.088
13:16:25	1470.799	2026.221
13:16:55	1514.269	2166.576
13:17:25	1364.79	2255.351
13:17:55	943.1761	2219.652
13:18:25	111	1952.36
13:18:55	46.9354	1751.685
13:19:25	39.57909	1658.183
13:19:55	32.19581	1567.955
13:20:25	26.54044	1560.972
13:20:55	28.86551	1571.464

851.95	740.3	25.4
ETH/THC	CH4/THC	AA/THC
37.25977	32.37679	1.110861337
935.5	23.3	22.93
ETH/THC	CH4/THC	AA/THC
56.49823	1.407171	1.384825740

150.8	860.2	5.76
ETH/THC	CH4/THC	AA/THC
9.958600	56.80628	0.380381557



6/22/92 SITE 3 DAY 1

TIME	THC TABLE (ppmC)	THC RACK (ppmC)
13:36:10	1480.486	2500.978
13:36:25	1488.909	2543.543
13:36:40	1481.511	2495.777
13:36:55	1481.18	2478.096
13:37:10	1460.74	2475.14
13:37:25	1463.078	2443.021
13:37:40	1479.329	2465.141
13:37:55	1475.859	2486.825
13:38:10	1475.644	2459.679
13:38:25	1477.643	2463.722
13:38:40	1480.44	2435.662
13:38:55	1470.019	2421.413
13:39:10	1479.385	2390.646
13:39:25	1481.269	2363.321
13:39:40	1491.921	2317.294
13:39:55	1487.415	2292.044
13:40:10	1497.301	2307.608
13:40:25	1498.089	2261.063
13:40:40	1485.564	2227.253
13:40:55	1486.045	2261.602
13:41:10	1475.936	2233.611
13:41:25	1489.875	2172.229
13:41:40	1506.755	2149.179
13:41:55	1513.458	2155.375
13:42:10	1514.887	1200.651
13:42:25	1510.183	1066.512
13:42:40	1504.572	632.7879
13:42:55	1511.611	358.525
13:43:10	1513.249	257.9832
13:43:25	1514.188	507.1778
13:43:40	1518.776	337.8215
13:43:55	1511.776	339.029
13:44:10	1492.16	332.8813
13:44:25	1488.301	-55.9020
13:44:40	1511.417	147.6025
13:44:55	1521.551	930.4424
13:45:10	1516.161	552.8619
13:45:25	1508.315	-56.2273
13:45:40	1499.528	-55.4997
13:45:55	1491.846	200.8024
13:46:10	1498.286	-55.4835
13:46:25	1499.249	147.4924
13:46:40	1498.524	-56.3195
13:46:55	1503.051	115.6368
13:47:10	1505.096	-55.8158
13:47:25	1394.946	883.8035
13:47:40	1625.578	-56.0036
13:47:55	1552.939	-55.7002

FRONT GC RESULTS  
 ETH-OH CH4 ACETALDEHYDE:  
 (ppmV/wet)(ppmV/wet)(ppmV/wet) :

REAR GC RESULTS  
 ETH-OH CH4 ACETALDEHYDE  
 (ppmV/wet)(ppmV/wet)(ppmV/wet)

113.1 863 4.9  
 ETH/THC CH4/THC AA/THC  
 7.433204 56.71844 0.322039813



6/22/92 SITE 3 DAY 1

TIME	THC TABLE (ppmC)	THC RACK (ppmC)
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FRONT GC RESULTS		
ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)

REAR GC RESULTS		
ETH-OH	CH4	ACETALDEHYDE
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)

14:00:14	1091.397	1101.309
14:00:15	1091.397	1101.309
14:00:15	1091.397	1101.309
14:00:27	3.785464	-14.8515
14:00:42	2.545983	-27.2759
14:00:57	2.057122	-29.1191
14:01:12	2.401205	-31.0541
14:01:27	2.478221	-32.0937
14:01:42	1.917981	-31.6262
14:01:57	0.326707	3.429045
14:02:12	1.700551	-33.9850
14:02:27	2.563307	-33.0748
14:02:42	17.86503	-25.2552
14:02:57	58.81898	-25.7455
14:03:12	173.444	-18.7754
14:03:27	725.8754	9.519057
14:03:42	1321.374	754.7512
14:03:57	1456.05	1135.801
14:04:12	1477.415	1358.463
14:04:27	1485.484	1373.647
14:04:42	1488.278	1431.876
14:04:57	1489.605	1426.312
14:05:12	1493.645	1387.124
14:05:27	1489.427	1410.8
14:05:42	1490.724	1438.699
14:05:57	1460.736	1442.122
14:06:12	813.9376	1366.626
14:06:27	962.2738	2081.127
14:06:42	383.808	2354.025
14:06:57	398.106	2257.538

OVEN		
ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)

BURNER		
ETH-OH	CH4	ACETALDEHYDE
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)

PETERSON - 10 INCH BATTER WHIP  
 BURNER OVEN SAMPLE

14:07:12	107.8352	2168.313
14:07:33	694.3593	2218.291
14:07:42	442.5805	2204.862
14:07:57	436.5071	2165.243
14:08:12	438.5706	2143.164
14:08:27	279.7015	2164.103
14:08:42	624.6627	2111.529
14:08:57	960.3663	2142.181
14:09:12	1559.698	2241.089
14:09:27	1360.348	2383.536
14:09:42	1378.97	2427.614
14:09:57	1600.816	2471.655
14:10:12	1663.558	2576.659
14:10:27	1650.595	2643.735

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
14:10:42	1636.142	2647.653						
14:10:57	1027.356	2631.431						
14:11:12	1091.91	2595.568						
14:11:27	1173.604	2516.076						
14:11:45	799.225	2567.192						
14:12:14	487.734	2475.744						
14:12:15	487.734	2475.744						
14:12:53	54.31996	2172.004						
14:12:53	54.31996	2172.004						
14:12:57	1043.124	2238.865						
14:13:12	1059.387	2219.742						
14:13:27	734.587	2259.104						
14:13:43	885.149	2294.976						
14:13:57	804.3253	2297.943						
14:14:12	331.8648	2228.69						
14:14:27	1144.388	2247.96	1285.4	567	30			
14:14:42	958.4623	2339.632	ETH/THC	CH4/THC	AA/THC			
14:14:57	1131.688	2327.197	57.18073	25.22286	1.334543319			
14:15:12	1250.396	2346.792						
14:15:27	1071.641	2384.563						
14:15:42	959.949	2389.289						
14:15:57	230.2624	2318.281						
14:16:12	69.43324	2205.408						
14:16:27	42.59377	2147.111						
14:16:42	49.3588	2034.618						
14:16:57	853.3417	2026.031						
14:17:12	624.9875	2102.861						
14:17:27	1230.294	2145.012						
14:17:42	961.6677	2234.626						
14:17:57	690.3165	2218.159						
14:18:12	712.8578	2241.134						
14:18:27	1017.242	2237.927						
14:18:42	940.8522	2228.479						
14:18:57	1119.505	2313.442						
14:19:12	1306.545	2338.824						
14:19:27	1433.252	2381.13						
14:19:42	1338.729	2408.848						
14:19:57	1384.518	2417.86						
14:20:12	1486.158	2453.313						
14:20:27	1510.43	2503.339						
14:20:42	944.7336	2514.9						
14:20:57	1160.954	2474.388						
14:21:12	578.907	2404.892						
14:21:27	542.1487	2346.832						
14:21:42	747.9092	2282.938						
14:21:57	823.0851	2251.965						
14:22:12	1105.555	2272.551						
14:22:27	395.0294	2298.644						



6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
14:34:42	641.0279	2038.734						
14:34:57	726.2375	2061.838						
14:35:12	879.8969	2116.354						
14:35:27	778.8118	2162.581						
14:35:42	967.5533	2165.843						
14:35:57	1399.678	2208.177						
14:36:12	1616.184	2338.836						
14:36:27	1712.71	2437.15						
14:36:42	1539.248	2473.208						
14:36:57	1360.269	2548.817						
14:37:12	1583.332	2524.179						
14:37:27	1450.682	2556.472						
14:37:42	1225.693	2572.343						
14:37:57	1501.575	2569.042						
14:38:12	1571.437	2567.985						
14:38:27	994.9797	2542.903						
14:38:42	852.7985	2523.906						
14:38:57	338.8456	2424.709						
14:39:12	95.51575	2291.955						
14:39:27	50.28589	2177.763						
14:39:42	165.818	2118.156						
14:39:57	563.2252	2082.485						
14:40:12	526.1109	2097.318						
14:40:27	806.127	2151.348						
14:40:42	1149.722	2198.672						
14:40:57	1116.433	2228.087						
14:41:12	638.3735	2244.758						
14:41:27	1086.39	2257.312				63.4	895	6.8
14:41:42	1065.63	2265.753				ETH/THC	CH4/THC	AA/THC
14:41:57	655.3754	2287.11				5.835841	82.38293	0.625926232
14:42:12	841.1294	2304.659						
14:42:27	526.6846	2230.445						
14:42:42	906.8898	2237.594						
14:42:57	732.0402	2241.148						
14:43:12	718.3139	2264.731						
14:43:27	1386.669	2235.182						
14:43:42	1501.336	2360.679						
14:43:57	1674.525	2421.809						
14:44:12	1709.206	2507.645						
14:44:27	1198.385	2525.435						
14:44:42	1028.771	2531.508						
14:44:57	1087.315	2507.69						
14:45:12	424.4966	2403.666						
14:45:27	548.9573	2332.339						
14:45:42	683.2882	2321.649						
14:45:57	526.2944	2261.35						
14:46:12	1170.183	2247.525						
14:46:27	1274.571	2327.679						

6/22/92 SITE 3 DAY 1

TIME	THC TABLE (ppmC)	THC RACK (ppmC)
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FRONT GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
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REAR GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
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14:46:42	1107.838	2362.709
14:46:57	726.5611	2349.201
14:47:12	835.1649	2327.847
14:47:27	886.6876	2338.298
14:47:42	1149.78	2356.366
14:47:57	1018.406	2346.761
14:48:12	881.9207	2385.937
14:48:27	1183.039	2372.714
14:48:42	1348.617	2378.295
14:48:57	1481.911	2413.097
14:49:12	832.0605	2455.235
14:49:27	393.7861	2404.444
14:49:42	729.4055	2294.225
14:49:57	546.5168	2298.833
14:50:12	535.0599	2373.607
14:50:27	834.7046	2250.351
14:50:42	196.645	2225.747
14:50:57	61.31669	2144.417
14:51:12	142.0604	2094.545
14:51:27	851.1241	2076.674
14:51:42	1126.708	2118.928
14:51:57	1548.837	2256.18
14:52:12	1622.517	2367.854
14:52:27	1429.635	2458.993
14:52:42	1406.862	2498.225
14:52:57	1341.935	2526.303
14:53:12	1608.461	2485.076
14:53:27	1750.348	2571.157
14:53:42	1280.539	2633.029
14:53:57	1423.526	2601.888
14:54:12	1452.199	2555.28
14:54:27	1047.818	2552.077
14:54:42	1255.63	2558.598
14:54:57	1348.188	2501.092
14:55:12	452.5817	2443.561
14:55:27	117.4362	2338.368
14:55:42	79.6282	2210.079
14:55:57	734.3234	2134.771
14:56:12	528.87	2133.808
14:56:27	606.7507	2167.417
14:56:42	1049.481	2162.443
14:56:57	975.8103	2198.777
14:57:12	410.2873	2190.177
14:57:27	743.7775	2151.949
14:57:42	816.7719	2159.64
14:57:57	1160.48	2178.95
14:58:12	447.6616	2219.144
14:58:27	686.2019	2175.26

1029.9	578	32.2
ETH/THC	CH4/THC	AA/THC
45.76619	25.68488	1.430887892

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
14:58:42	807.2528	2162.776						
14:58:57	793.4351	2150.721						
14:59:12	1543.421	2206.372						
14:59:27	1730.098	2287.846						
14:59:42	1757.605	2399.56				150.9	2030	6.66
14:59:57	1744.749	2482.082				ETH/THC	CH4/THC	AA/THC
15:00:12	1810.769	2546.776				8.585546	115.4980	0.37892473
15:00:27	1797.335	2596.869						
15:00:42	1724.036	2623.884						
15:00:57	1579.162	2642.287						
15:01:12	1590.611	2651.349						
15:01:27	610.9772	2557.949						
15:01:42	156.9583	2431.026						
15:01:57	60.61123	2249.526						
15:02:12	47.95826	2098.356						
15:02:27	38.59035	2029.313						
15:02:42	33.78433	1983.808						
15:02:57	367.2433	1931.441						
15:03:12	1004.551	1974.686						
15:03:27	967.5694	2071.021						
15:03:42	980.788	2162.782						
15:03:57	1236.859	2183.755						
15:04:12	793.2437	2220.663						
15:04:27	841.6489	2240.131						
15:04:42	745.8084	2201.086						
15:04:57	668.6243	2188.488						
15:05:12	1240.566	2201.091						
15:05:27	1651.951	2294.611						
15:05:42	1766.705	2409.183						
15:05:57	1634.602	2471.623						
15:06:12	1621.195	2542.366						
15:06:27	1688.722	2552.601						
15:06:42	1601.015	2580.547						
15:06:57	1553.355	2610.862						
15:07:12	1533.057	2612.456						
15:07:27	1530.12	2610.239						
15:07:42	1519.003	2578.566						
15:07:57	1624.866	2612.676						
15:08:12	1648.513	2609.295						
15:08:27	1519.813	2664.671				744.9	872	31.5
15:08:42	1523.268	2625.499				ETH/THC	CH4/THC	AA/THC
15:08:57	1663.098	2578.951				49.01260	57.37547	2.072623408
15:09:12	1585.036	2619.849						
15:09:27	1373.24	2601.689						
15:09:42	669.9451	2519.615						
15:09:57	169.7009	2395.163						
15:10:12	64.00494	2204.373						
15:10:27	422.6496	2111.291						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
15:10:42	449.4552	2049.131						
15:10:57	1138.136	2073.891						
AVG	951.9456	2323.231						
		END						
15:11:12	733.0953	2111.647						
15:11:27	1143.003	2108.615						
15:11:42	1488.057	2159.102						
15:11:57	1538.51	2262.105						
15:12:12	1532.797	2321.922						
15:12:27	1535.116	2373.518						
15:12:42	1522.162	2400.459						
15:12:57	1524.962	2400.798						
15:13:12	1531.889	2410.368						
15:13:27	1525.94	2392.373						
15:13:42	1520.33	2389.285						
15:13:57	1523.759	2388.08						
15:14:12	1525.313	2386.351						
15:14:27	1523.063	2388.989						
15:14:42	1527.521	2344.407						
15:14:57	1526.519	2347.778						
15:15:12	1532.227	2317.176						
15:15:27	1538.498	2307.444						
15:15:42	1545.509	2269.003						
15:15:57	1543.484	2245.401						
15:16:12	1538.828	2264.114						
15:16:27	1521.315	2237.861						
15:16:42	1519.235	2168.805						
15:16:57	1534.863	2140.629						
15:17:12	1536.499	2143.378						
15:17:27	1533.728	2121.888						
15:17:42	1533.456	2088.054						
15:17:57	1543.208	2101.145						
15:18:12	1553.811	2076.174						
15:18:27	1546.972	2049.704						
15:18:42	1535.705	2036.316				145.6	1890	4.9
15:18:57	1538.973	1999.504				ETH/THC	CH4/THC	AA/THC
15:19:12	1538.589	1975.536				9.411935	122.1741	0.316747814
15:19:27	1540.253	1940.754						
15:19:42	1536.309	1935.116						
15:19:57	1534.518	1895.239						
15:20:12	1533.529	1835.692						
15:20:27	1543.238	1783.481						
15:20:42	1575.16	1732.03						
15:20:57	1753.04	1687.851						
15:21:12	1667.311	1630.319						
15:21:27	1606.922	1575.403						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
15:21:42	1577.884	1514.902						
15:21:57	1562.196	1439.547						
15:22:12	1547.452	1360.347						
15:22:27	1530.429	1290.847						
15:22:42	1527.832	1241.758						
15:22:57	1551.515	1196.819						
15:23:12	1786.701	1186.666						
15:23:27	1679.112	1186.711						
15:23:42	1609.543	1190.561						
15:23:57	1573.887	1175.891						
15:24:12	1559.548	1162.497						
15:24:27	1546.2	1157.505						
15:24:42	1542.202	1142.962						
15:24:57	1565.479	1120.606						
15:25:12	1609.536	1127.582						
15:25:27	1573.253	1131.947						
15:25:42	1555.629	1124.222						
15:25:57	1717.264	1125.553						
15:26:12	1675.241	1112.695						
15:26:27	1610.509	1125.404						
15:26:42	1647.522	1142.965						
15:26:57	1646.971	1142.717						
15:27:12	1725.809	1106.237						
15:27:27	1755.067	1104.508	132.95	900	7.71			
15:27:42	1755.967	1185.17	ETH/THC	CH4/THC	AA/THC			
15:27:57	1619.582	1177.211	12.03703	81.48424	0.698048361			
15:28:12	1467.367	1155.818						
15:28:27	1580.442	1127.145						
15:28:42	1452.688	1073.529						
15:28:57	1252.25	1056.581						
15:29:12	1171.481	1022.668						
15:29:27	1349.742	968.1558						
15:29:42	1468.703	943.3988						
15:29:57	1514.054	953.0812						
15:30:12	1734.678	960.0237						
15:30:27	1741.778	996.0569						
15:30:42	1855.008	1054.213						
15:30:57	1715.683	1110.333						
15:31:12	1848.174	1158.751						
15:31:27	1362.578	1142.298						
15:31:42	1472.994	1127.23						
15:31:57	1246.359	1040.575						
15:32:12	1422.138	1048.263						
15:32:27	1385.148	991.6375						
15:32:42	1141.672	966.4208						
15:32:57	1492.522	969.7975						
15:33:12	1680.299	1008.613						
15:33:27	1753.878	1021.084						

6/22/92 SITE 3 DAY 1

TIME	THC TABLE (ppmC)	THC RACK (ppmC)
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FRONT GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
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REAR GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
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15:33:42	1677.834	1065.388
15:33:57	1584.194	1098.22
15:34:12	1233.4	1068.944
15:34:27	1492.823	1069.745
15:34:42	1431.115	1058.019
15:34:57	1540.091	1045.94
15:35:12	1614.839	1058.762
15:35:27	1172.647	1052.336
15:35:42	1507.518	1071.79
15:35:57	1767.309	1060.274
15:36:12	1643.309	1122.308
15:36:27	1675.917	1201.592
15:36:42	1062.179	1188.951
15:36:57	1132.686	1152.639
15:37:12	323.6734	1035.648
15:37:27	98.75284	929.6187
15:37:42	51.93892	836.2542
15:37:57	39.39064	725.5591
15:38:12	34.62553	675.8339
15:38:27	34.09694	631.0821
15:38:42	99.46313	615.4359
15:38:57	422.3606	625.3618
15:39:12	107.9909	613.919
15:39:27	45.16689	610.5046
15:39:42	29.57294	612.2371
15:39:57	44.98772	605.9276
15:40:12	832.5999	634.4885
15:40:28	400.7652	648.4768
15:41:30	491.0209	743.6938
15:41:30	491.0209	743.6938
15:41:31	491.0209	743.6938
15:41:31	491.0209	743.6938
15:41:42	1601.004	1054.889
15:41:57	1602.566	1198.406
15:42:12	1684.023	1324.899
15:42:27	1716.411	1430.743
15:42:42	1554.049	1497.792
15:42:57	1569.579	1595.687
15:43:12	1550.502	1632.417
15:43:27	1464.699	1679.77
15:43:42	1670.871	1714.534
15:43:57	1585.753	1742.814
15:44:12	1537.836	1824.304
15:44:27	1390.603	1839.324
15:44:42	1325.295	1815.55
15:44:57	335.7173	1758.248
15:45:12	839.2056	1756.388
15:45:27	322.6288	1787.419

577	700	19.69
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79.2	1980	5.16
ETH/THC	CH4/THC	AA/THC
4.725771	118.1442	0.307891142

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
15:45:42	82.56676	1666.51	ETH/THC	CH4/THC	AA/THC			
15:45:57	38.28508	1574.713	32.28118	39.16261	1.101588379			
15:46:12	31.86259	1596.953						
15:46:27	29.36869	1646.294						
15:46:42	19.85375	1686.485						
15:46:57	14.34088	1652.146						
15:47:12	12.28198	1731.771						
15:47:27	10.26159	1756.12						
15:47:42	9.658779	1807.595						
15:47:57	92.24609	1755.806						
15:48:12	404.3276	1846.192						
			OVEN			BURNER		
			ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
			PETERSON (ppmV/wet(ppmV/wet(ppmV/wet) :			(ppmV/wet(ppmV/wet(ppmV/wet)		
	BURNER	OVEN	14 INCH BATTER WHIP			=====		
15:48:27	848.7598	1928.159						
15:48:42	1397.016	2025.93						
15:48:57	1499.225	2188.273						
15:49:12	1529.358	2275.834						
15:49:27	1603.768	2384.315						
15:49:42	1683.145	2450.477						
15:49:57	1682.974	2521.473						
15:50:12	1428.84	2582.718						
15:50:27	1552.41	2578.55						
15:50:42	1405.892	2577.776						
15:50:57	617.1719	2510.835						
15:51:12	260.6181	2444.442						
15:51:27	76.12296	2283.974						
15:51:42	66.24428	2176.451						
15:51:57	769.462	2144.824						
15:52:12	819.2972	2207.996						
15:52:27	958.5676	2241.536						
15:52:42	1164.413	2274.792						
15:52:57	942.3008	2298.758						
15:53:12	863.809	2339.992						
15:53:27	918.7098	2327.838						
15:53:42	328.6164	2277.018						
15:53:57	81.61656	2213.58						
15:54:12	391.1696	2110.863						
15:54:27	1018.874	2151.39				42	824	6.28
15:54:42	1067.858	2202.671				ETH/THC	CH4/THC	AA/THC
15:54:57	1366.46	2302.695				4.122197	80.87359	0.616366695
15:55:12	1421.034	2387.859						
15:55:27	1501.968	2424.34						
15:55:42	1669.508	2501.13						
15:55:57	1630.141	2572.218						
15:56:12	1607.155	2584.117						
15:56:27	1552.502	2612.473						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
15:56:42	853.5363	2602.043						
15:56:57	423.2586	2523.47						
15:57:12	182.4722	2331.889						
15:57:27	693.2172	2264.576						
15:57:42	543.9308	2264.97						
15:57:57	598.3373	2262.426						
15:58:12	142.7693	2183.689						
15:58:27	50.11293	2138.964						
15:58:42	30.75536	2082.947						
15:58:57	202.9465	2001.948						
15:59:12	1025.654	2062.657						
15:59:27	975.7395	2190.31						
15:59:42	951.0505	2231.279						
15:59:57	1099.689	2262.661						
16:00:12	1267.025	2272.147						
16:00:27	1500.744	2372.469						
16:00:42	1624.761	2440.541						
16:00:57	1714.029	2521.52						
16:01:12	1669.384	2567.987						
16:01:27	1672.812	2631.724						
16:01:42	1674.816	2656.223						
16:01:57	1479.089	2624.877						
16:02:12	1426.108	2616.302						
16:02:27	1264.544	2639.583						
16:02:42	1206.599	2551.355						
16:02:57	549.8865	2493.872						
16:03:12	136.7444	2534.776						
16:03:27	57.71754	2381.795						
16:03:42	49.5017	2151.813						
16:03:57	613.5338	2102.099						
16:04:12	573.8812	2187.139						
16:04:27	607.2233	2173.552						
16:04:42	157.6011	2111.101						
16:04:57	51.46048	2097.237						
16:05:12	306.9491	2023.214						
16:05:27	1048.089	2067.889						
16:05:42	1241.558	2161.698						
16:05:57	1448.23	2275.908						
16:06:12	1392.381	2356.303						
16:06:27	1468.339	2404.64						
16:06:42	1527.416	2480.332						
16:06:57	1549.005	2536.484						
16:07:12	1136.014	2554.413						
16:07:27	1062.729	2527.442						
16:07:42	1019.923	2472.911						
16:07:57	1467.643	2459.992						
16:08:12	1541.953	2523.986						
16:08:27	1436.39	2523.016						
			1067	742	29			
			ETH/THC	CH4/THC	AA/THC			
			44.79814	31.15297	1.217569102			

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
16:08:42	746.2243	2542.042						
16:08:57	453.4745	2435.597						
16:09:12	115.814	2313.138						
16:09:27	51.13544	2203.257						
16:09:42	422.5046	2161.236						
16:09:57	481.5046	2150.012						
16:10:12	402.2923	2172.444						
16:10:27	449.8334	2159.885						
16:10:42	268.1298	2125.798						
16:10:57	1015.062	2104.212						
16:11:12	1423.203	2215.919						
16:11:27	1223.819	2341.699						
16:11:42	1453.999	2370.07						
16:11:57	1570.336	2439.656						
16:12:12	1477.211	2487.849						
16:12:27	1676.049	2562.729						
16:12:42	1327.206	2612.736						
16:12:57	1352.801	2561.837				64	1930	5.53
16:13:12	799.3837	2549.949				ETH/THC	CH4/THC	AA/THC
16:13:27	941.0499	2525.353				4.730924	142.6669	0.408781483
16:13:42	288.6271	2406.524						
16:13:57	891.871	2310.738						
16:14:12	364.3432	2355.192						
16:14:27	145.0132	2289.023						
16:14:42	49.80289	2174.083						
16:14:57	25.77427	2115.269						
16:15:12	388.1414	2117.813						
16:15:27	500.25	2132.948						
16:15:42	812.8774	2169.496						
16:15:57	782.553	2200.977						
16:16:12	1400.85	2288.721						
16:16:27	1583.571	2377.297						
16:16:42	1518.721	2453.843						
16:16:57	1398.202	2568.46						
16:17:12	1145.838	2542.042						
16:17:27	1358.406	2502.26						
16:17:42	1233.587	2533.508						
16:17:57	1486.564	2586.512						
16:18:12	1602.81	2580.741						
16:18:27	1593.646	2632.781						
16:18:42	733.8408	2622.018						
16:18:57	243.1157	2563.113						
16:19:12	70.55966	2368.359						
16:19:27	40.33249	2232.048						
16:19:42	803.3535	2231.141						
16:19:57	937.0847	2250.132						
16:20:12	1121.147	2292.476						
16:20:27	1007.234	2337.505						





6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
16:43:48	3766.987	2392.363						
16:43:57	3588.481	3651.17						
16:44:12	3298.841	3738.971						
16:44:27	3005.897	3717.645						
16:44:42	2936.971	3697.883						
16:44:57	2811.24	3665.369						
16:45:12	2714.116	3698.031						
16:45:27	2485.344	3694.773						
16:45:42	1482.187	3532.997						
16:45:57	1331.121	2527.244						
16:46:12	1366.467	2414.632						
16:46:27	2015.089	2487.003						
16:46:42	1598.05	3142.062						
16:46:57	1557.775	2210.808						
16:47:12	1512.032	1507.476						
16:47:27	1499.012	1472.447						
16:47:42	1495.673	1446.669						
16:47:57	1489.449	1439.697						
16:48:12	1491.052	1421.299						
16:48:27	1492.249	1398.877						
16:48:42	1488.998	1439.274						
16:48:58	1494.541	1403.745						
16:49:12	1495.466	1371.066						
16:49:27	1488.103	1419.203						
16:49:49	1197.603	1427.432						
16:49:57	312.0357	1148.667						
16:50:12	301.8885	323.1025						
16:50:27	300.3211	277.6576						
16:50:42	301.682	277.795						
16:50:57	300.8877	274.3539						
16:51:12	302.2066	276.058						
16:51:27	302.2995	273.8547						
16:51:42	302.5451	278.4517						
16:51:57	304.3108	276.434						
16:52:12	304.6595	276.8639						
16:52:27	302.7759	280.2674						
16:52:42	302.7184	281.7756						
16:52:57	1130.413	306.3937						
16:53:24	1542.233	930.6372						
16:53:27	2016.775	1595.247						
16:53:42	2025.473	1994.17						
16:53:57	2029.497	2069.736						
16:54:12	2028.804	2062.424						
16:54:27	2030.916	2075.87						
16:54:42	2032.485	2071.411						
16:54:57	2029.989	2069.497						
16:55:12	2032.211	2076.786						
16:55:27	2030.497	2078.129						

6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
16:55:42	2032.255	2069.402						
16:55:57	2029.533	2071.561						
16:56:12	1656.198	2056.98						
16:56:27	1526.713	2216.167						
16:56:42	1519.159	2516.741						
16:56:57	1515.858	2525.348						
16:57:12	1507.263	2523.008						
16:57:27	1507.257	2525.22						
16:57:42	1495.625	2473.325						
16:57:57	1491.781	2498.769						
16:58:12	1505.568	2487.186						
16:58:27	1508.375	2481.775						
16:58:42	1504.267	2452.355						
16:58:57	1517.437	2458.872						
16:59:12	1518.762	2430.97						
16:59:27	1506.306	2398.662						
16:59:42	1511.183	2378.751						
16:59:57	1531.81	2348.437						
17:00:12	1535.852	2317.957						
17:00:27	1516.757	2285.907						
17:00:42	1517.707	2274.949						
17:00:57	1524.282	2248.239						
17:01:12	1509.505	2226.506						
17:01:27	1516.707	2182.976						
17:01:42	1508.291	2172.975						
17:01:57	1516.046	2174.312						
17:02:12	1590.532	2152.553						
17:02:27	1769.4	2153.34						
17:02:42	1653.264	2069.058						
17:02:57	1569.589	2117.135						
17:03:12	1539.845	2118.799						
17:03:27	1680.336	2065.73						
17:03:47	1995.608	2197.712						
17:03:57	752.8474	787.6318						
17:04:12	760.8904	723.3417						
17:04:27	763.2344	723.265						
17:04:42	761.5484	707.507						
17:04:57	763.0098	717.8772						
17:05:12	764.431	722.7265						
17:05:27	766.0737	728.211						
17:05:42	763.8649	717.0354						
17:05:57	416.8924	700.7614						
17:06:12	615.2874	737.1351						
17:06:27	168.2616	726.6705						
17:06:44	67.41237	712.5507						
17:06:57	45.73522	575.5661						
17:07:12	37.20356	468.2538						
17:07:27	211.9938	399.8843						



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6/22/92 SITE 3 DAY 1

TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	TABLE (ppmC)	RACK (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
17:19:42	111.369	665.4639						
17:19:57	39.71351	1073.834						
17:20:12	92.21944	1295.695						
17:20:27	241.0799	1366.171						
17:20:42	1044.699	1390.606						
17:20:57	852.0551	1635.396						
17:21:17	477.0667	1724.144						
17:21:27	1135.446	1741.777						
17:21:42	492.4745	1972.273						
17:21:57	503.3889	1975.987						
17:22:12	168.8741	1978.176						
17:22:27	42.83393	2074.518						
17:22:42	133.0609	2092.477						
17:22:57	500.6815	2162.537						
17:23:12	184.8624	2337.294						
17:23:27	267.1981	2326.385						
17:23:42	55.81628	2296.072						
17:23:57	19.341	2377.477						
17:24:12	12.88867	2314.834						
17:24:27	27.31966	2386.529						
17:24:42	138.0765	2443.635						
17:24:57	372.9639	2406.574						
17:25:12	536.9513	2501.967						
17:25:27	780.2322	2576.533						
17:25:42	607.1729	2566.754						
17:25:57	794.4273	2667.075						
17:26:12	794.5844	2693.334						
17:26:27	818.9575	2698.754						
17:26:42	402.3373	2736.174						
17:26:57	764.292	2634.244						
17:27:12	770.1069	2683.918						
17:27:27	728.8796	2789.606						
17:27:46	986.2956	2693.223						
17:27:57	137.9391	2747.661						
17:28:12	45.96418	2653.427						
17:28:50	712.0066	2567.364						
17:28:50	712.0066	2567.364						
17:28:57	237.7862	2681.253						
17:29:12	84.84296	2632.122						
17:29:27	839.7722	2697.392						
17:29:48	746.7656	1543.288						
17:29:57	749.3817	774.6298						
17:30:12	751.2842	772.5591						
17:30:27	757.2756	747.9137						
17:30:42	764.9112	745.5928						
17:30:57	760.5231	742.3195						
17:31:12	758.1072	722.7723						



CALIBRATION FILE NAME: C:\NCERDATA\062292.CAL  
 06-22-1992 10:22:21  
 CALIBRATION FILE NAME: C:\NCERDATA\062292.CAL

Chan.	Name	Units	Zero		Span		Slope	Y-Int
			Conc.	Resp.	Conc.	Resp.		
1	THC1	PPM	0.00	-0.0016	1490.00	1.492	997.922	1.492
2	O2	%	0.00	0.0000	20.90	0.005	247.068	-0.11
3	THC2	PPM	0.00	-0.0011	3980.00	3.777	654.614	1.10
4		PPM	0.00	0.0030	1490.00	1.581	944.941	1.492

*Site 3*  
*Day 1*

Press Shift-Print to Print Out Table  
 Press <C> to Continue

BEIHAN CORPORATION READCO - BAKERY SITE 1

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 ANALYSIS

Date Printed = 06-22-1992 Current Time = 10:22:21  
 File Name = C:\NCERDATA\062292.FRN Calibration File: C:\NCERDATA\062292.CAL

*THC1 = Readco oven*  
*PPM = Readco Burner*

06-22-1992 THC1 O2 THC2  
 Unit PPM % PPM PPM

HOIAR CORPORATION 799 DC UP NE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
SERIES

PG

Entered for:

Date Printed = 06-22-1992 Current Time = 10:40:54

File Name = C:\CEMDATA\062292.FRN Calibration File=C:\CEMDATA\0622A.CAL

06-22-1992 THC1 O2 THC2  
Time PPM % PPM PPM

Time	THC1 PPM	O2 %	THC2 PPM	PPM
0:41:08	1027.6	14.9	-3444.5	1088.8
0:41:38	858.9	18.6	-3671.8	892.8
0:42:08	845.7	3.6	-3649.4	836.5
0:42:38	835.2	2.2	-3648.4	799.4
0:43:08	824.4	-0.2	-3658.9	777.5
0:43:38	826.9	-0.2	-3648.5	772.5
0:44:08	818.8	-0.3	-3651.1	763.4
0:44:38	819.2	-0.3	-3660.2	756.8
0:45:08	812.3	-0.3	-3628.4	748.2

$T = 817.9$   
 $R = 769.7$

=====  
Avg.# 849.7 3.1 -3632.3 826.0  
=====

ADIANA CORPORATION 202 RPM ETHANOL LP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
ANERIES

FA

performed for:

date Printed = 06-22-1992 Current Time = 11:26:57

file Name = D:\CEMDATA\062292.PRN Calibration File:D:\CEMDATA\0622H.DAL

06-22-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM
11:26:08	530.6	19.8	-4247.3	679.1
11:26:38	329.7	8.2	-4289.5	522.6
11:27:08	319.4	-0.2	-4798.6	287.5
11:27:38	316.8	-0.2	-4916.8	276.3
11:28:08	314.6	-0.2	-4978.8	305.6
11:28:38	312.5	-0.2	-4942.0	298.2
11:29:08	311.8	-0.2	-4898.9	287.7
11:29:38	301.3	-0.2	-4739.2	276.6
11:30:08	301.6	-0.2	-5072.8	274.7
11:30:38	302.3	-0.2	-5037.3	273.1
11:31:08	305.3	-0.1	-5069.9	270.5

=====  
Avg. = 307.4 2.4 -4797.9 340.8  
=====

320.3      283.0

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES  
 .PA

Performed for:  
 Date Printed = 06-22-1992 Current Time = 13:58:47  
 File Name = D:\CEM\DATA\062292.PRN Calibration File: D:\CEM\DATA\0622A.CAL

*APC*

06-22-1992	THO1	O2	THO2	
Time	PPM	%	PPM	PPM

13:56:51	420.4	16.2	-3853.1	606.9
13:56:55	1517.8	15.5	-3844.7	-57.4
13:51:10	1504.4	14.8	-3725.7	-55.7
13:51:25	1498.9	7.2	-3628.4	216.8
13:51:40	1493.4	2.5	-3650.6	1120.7
13:51:55	1500.5	-0.1	-3718.7	179.0
13:52:10	1496.4	-0.9	-3672.2	368.6
13:52:25	1490.6	-1.2	-3731.9	-57.7
13:52:40	1488.1	-0.7	-3710.9	-54.6
13:52:55	1486.9	-0.7	-3646.9	124.2
13:53:10	1487.4	-0.6	-3726.0	-54.8
13:53:25	1484.5	-0.6	-3697.2	150.3
13:53:40	1487.5	-0.6	-3727.9	75.1
13:53:55	1486.7	-0.6	-3730.1	-52.5
13:54:10	1486.4	-0.3	-3586.4	1018.9
13:54:25	1485.6	-0.2	-3697.8	1399.3
13:54:40	1487.1	-0.2	-3675.4	1394.2
13:54:55	1488.7	0.1	-3632.2	1355.3
13:55:10	1492.8	-0.1	-3542.5	1374.7
13:55:25	1486.3	-0.0	-3621.9	1369.7
13:55:40	1457.3	-0.1	-3654.9	1419.9
13:55:55	1504.9	-0.1	-3649.3	1372.4
13:56:10	1484.3	-0.1	-3642.6	1364.9
13:56:25	1484.7	0.1	-3597.0	1405.1
13:56:40	1491.3	0.0	-3649.2	1380.1
13:56:55	1487.2	-0.1	-3670.3	1365.7

*Flame out?*

*conc = (vol%) 944.94 - 3.55*

*1390 = 1.47 vol%*

Avg. =	1453.8	1.5	-3651.5	1341.1
--------	--------	-----	---------	--------

*1490.0*

*1390*

*→ the following cal showed B.55 vol% or 1463.4 ppm observed*

CEM INSTRUMENT DRIFT SUMMARY  
06-22-1992 13:56:31

Chan.	Name	Units	Zero Conc.		Span		Drift % of Scale	
			(Actual)	Observed	(Actual)	Observed	Zero	Span
1	THC1	PPM	0.000	0.000	1490.00	1485.48	0.00	-0.25
2	O2	%	0.000	0.000	20.90	0.00	0.00	-83.60
3	THC2	PPM	0.000	0.000	3980.00	0.00	0.00	-39.80
4		PPM	0.000	0.000	1492.00	1463.40	0.00	-0.27

A cal

0 THC1 Rank  
0 - 1.578E-03 1.441521

1490 3.757892E-03 1.580578

B cal

0 same 1.48699

1490 same 1.552428

Press Shift-FrtSc to Print Out Table  
Press (C) to Continue

ADIAN CORPORATION ZERO GAS

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES  
PA

Performed for:  
Date Printed = 06-22-1992 Current Time = 13:59:54  
File Name = C:\CEM\DATA\062292.PRN Calibration File: C:\CEM\DATA\0622E.CAL

06-22-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM
14:00:14	1391.4	-0.1	-3765.7	1101.3
14:00:14	1391.4	0.1	3765.7	1101.3

4:00:15	1291.4	-0.1	-3765.7	1121.7
4:00:27	3.8	-0.5	-3749.8	-14.9
4:00:42	2.5	-0.2	-3763.0	-27.3
4:00:57	2.1	-0.3	-3769.4	-29.1
4:01:12	2.4	-0.3	-3781.3	-31.1
4:01:27	2.5	-0.3	-3788.8	-32.1
4:01:42	1.9	-0.3	-3778.7	-31.8
4:01:57	0.3	-0.4	-3885.3	3.4
4:02:12	1.7	-0.4	-3884.0	-3.7
4:02:27	2.6	-0.2	-3799.9	-33.1
4:02:42	17.9	-0.1	-3790.0	-25.3
4:02:57	58.8	-0.1	-3727.2	-25.7
4:03:12	173.4	-0.1	-3691.1	-18.6
4:03:27	725.9	-0.1	-3630.5	9.9
4:03:42	1321.4	-0.1	-3516.7	754.6
4:03:57	1456.0	1.8	-3482.2	1135.8
4:04:12	1477.4	1.5	-3617.7	1358.5
4:04:27	1485.5	-0.0	-3547.5	1373.6
4:04:42	1488.3	-0.3	-3606.2	1431.9
4:04:57	1489.6	-0.3	-3544.3	1426.3
4:05:12	1493.8	-0.2	-3564.0	1387.1
4:05:27	1489.4	-0.0	-3667.4	1410.8
4:05:42	1490.7	-0.0	-3619.0	1438.7

T = 1.9  
R = 3.4

1490  
cp  
line

Avg. = 713.6 -0.1 -3695.7 509.0

1490.3

1417.0

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 ANALYSIS

Performed for:  
 Date Printed = 06-22-1992 Current Time = 16:43:40  
 File Name = C:\CEM\DATA\262252.PRN Calibration File: C:\CEM\DATA\262252.CAL

06-22-1992	THD1	O2	THD2	
Time	PPM	%	PPM	PPM
06:43:48	3767.0	13.9	-272.5	3792.4
06:43:57	3588.5	3.4	-128.6	3651.0
06:44:12	3296.6	0.7	427.3	3739.0
06:44:27	3025.9	1.0	877.6	3717.6
06:44:42	2537.0	1.3	1346.2	3677.9
06:44:57	2911.2	2.4	1591.6	3665.4
06:45:12	2714.1	4.2	1707.4	3652.0
06:45:27	2485.3	5.3	1623.2	3694.0
06:45:42	1482.2	5.7	1471.4	3530.0
06:45:57	1331.1	10.7	516.8	2527.1
06:46:12	1355.5	15.9	-165.3	2414.6
06:46:27	2015.1	16.5	-167.6	2487.0
=====				
Avg. =	2566.9	6.8	734.0	3266.2
=====				

*Gas B. HB  
 Empty*

ADIAN CORPORATION 1492 OF THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data

SERIES

PA

performed for:

Date Printed = 06-22-1992 Current Time = 16:46:49

File Name = C:\CEM\DATA\062292.PRN Calibration File=C:\CEM\DATA\0622B.CAL

06-22-1992	THO1	O2	THO2	
Time	PPM	%	PPM	PPM
06:46:57	1557.8	11.3	-488.1	2210.8
06:47:12	1512.0	2.4	-588.3	1507.8
06:47:27	1499.0	-0.2	-3059.4	1472.4
06:47:42	1455.7	-0.1	-3638.7	1446.7
06:47:57	1409.4	-0.0	-3641.0	1439.7
06:48:12	1491.1	-0.1	-3612.3	1421.3
06:48:27	1492.2	0.0	-3633.5	1398.9
06:48:42	1485.0	-0.0	-3547.8	1439.3
=====				
Avg. =	1507.3	1.4	-2859.5	1542.1
=====				

T = 1496.5  
R = 1429.2

ADIAN CORPORATION 200 PPM ETHANOL UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
SERIES

PA

performed for:

Date Printed = 06-22-1992 Current Time = 16:49:42

File Name = C:\CEM\DATA\062292.FRN Calibration File=C:\CEM\DATA\062292.CAL

06-22-1992	THC1	CO	THC2	
Time	PPM	%	PPM	PPM

6:49:49	1197.6	-0.5	-3654.8	1427.4
6:49:57	312.0	2.8	-3876.7	1148.7
6:50:12	301.9	-0.1	-4624.3	302.1
6:50:27	300.3	-0.2	-5119.1	277.8
6:50:42	301.7	-0.2	-5097.7	277.8
6:50:57	300.9	-0.2	-5116.3	274.4
6:51:12	302.2	-0.2	-5139.9	278.1
6:51:27	302.3	-0.2	-3400.3	278.9
6:51:42	302.5	-0.2	-5070.2	278.5
6:51:57	304.3	-0.3	-5153.3	278.4
6:52:12	304.7	-0.2	-5000.8	278.9
6:52:27	302.8	-0.2	-4824.5	282.1
6:52:42	302.7	-0.2	-5151.2	281.8
6:52:57	1130.4	-0.5	-4156.2	308.4

999.9	420.2	-0.0	-4676.2	427.1
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302.4

277.4

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 ANALYSIS

Performed for:  
 Date Printed = 06-22-1992 Current Time = 16:53:16  
 File Name = C:\CEN\DATA\062292.PRN Calibration File: C:\CEN\DATA\06228.CAL

06-22-1992 THO1 O2 THO2  
 Time PPM % PPM PPM

Time	THO1 PPM	O2 %	THO2 PPM	PPM
6:53:24	1542.2	2.7	-4039.4	930.6
6:53:27	2016.5	6.4	-4246.3	1595.2
6:53:42	2025.5	15.6	-2545.9	1994.2
6:53:57	2029.5	19.1	-1865.4	2065.7
6:54:12	2026.8	19.9	-742.1	2362.4
6:54:27	2030.9	20.1	-753.3	2075.5
6:54:42	2032.5	20.2	-605.0	2071.4
6:54:57	2030.0	20.2	-507.0	2065.5
6:55:12	2032.2	20.2	-440.0	2076.8
6:55:27	2030.5	20.3	-375.5	2078.1
6:55:42	2032.3	20.3	-422.5	2069.4
6:55:57	2029.5	20.3	-441.5	2071.6
6:56:12	1655.2	20.1	-405.7	2057.2
6:56:27	1526.7	19.9	-774.1	2216.2
6:56:42	1519.2	19.5	-948.5	2516.7
6:56:57	1515.9	19.5	-174.6	2625.3
6:57:12	1507.3	19.4	-149.9	2523.0
6:57:27	1507.3	19.5	-146.0	2525.2

*T = 2030.7  
 R = 2076.6*

Avg. = 1936.5 18.1 -1019.3 2064.9

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
SERIES

PA  
performed for:  
Date Printed = 06-22-1992 Current Time = 17:05:39  
File Name = C:\CEM\DATA\062292.FRM Calibration File: C:\CEM\DATA\062292.CAL

Time	THC1 PPM	SO2 %	THC2 PPM	PPM
7:23:47	1995.6	18.3	-4711.8	2149.7
7:23:59	752.8	6.4	-3729.8	787.2
7:24:12	769.8	1.8	-3783.2	723.5
7:24:27	763.2	2.0	-3892.7	723.7
7:24:42	761.8	-0.7	-3718.8	727.5
7:24:57	767.6	-0.1	-3891.7	717.5
7:25:12	764.4	-0.7	-3812.3	722.9
7:25:27	766.1	-0.8	-3904.5	728.1
7:25:42	763.7	-0.3	-3682.8	717.8
7:25:57	416.8	-0.4	-3743.4	788.8
7:26:12	618.3	1.6	-3571.8	737.1
7:26:27	168.3	10.7	-3628.1	724.7
=====				
Avg. =	774.3	3.2	-3528.2	849.2
=====				

763.2      720.5

ADIAN CORPORATION N2 OF THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES

PPM

Performed for:

Date Printed = 06-22-1992 Current Time = 17:09:24

File Name = C:\CEM\DATA\062292.PRN Calibration File: C:\CEM\DATA\062292.CAL

06-22-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM
17:09:33	7.4	-0.5	-3721.9	-24.0
17:09:42	7.1	-0.5	-3745.0	-22.0
17:09:57	8.1	-0.4	-3762.9	-35.8
17:10:10	5.5	-0.5	-3785.7	-17.0
17:10:27	7.6	-0.2	-3749.6	-15.6
17:10:42	7.0	-0.4	-3834.0	-12.6
=====				
Avg.=	7.1	-0.4	-3767.2	-21.2
=====				

RADIAN CORPORATION NO UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
LAKEVIEW

.PA

performed for:

Date Printed = 06-22-1992 Current Time = 17:12:34

File Name = C:\CEMDATA\062292.FRN Calibration File: C:\CEMDATA\06228.CAL

06-22-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
7:12:43	981.2	17.7	-541.9	2048.1
7:13:43	981.2	17.7	-541.9	2048.1
7:13:57	12.0	12.9	-3685.2	20.6
7:13:12	9.2	3.5	-3684.2	-15.8
7:13:27	6.2	6.2	-3739.4	-32.2
7:13:42	4.9	-0.4	-3761.2	-32.1
7:13:57	4.4	-0.4	-3743.6	-29.9
7:14:12	6.6	-0.3	-3786.4	-31.1
7:14:27	6.9	-0.3	-3763.1	-30.4
7:14:42	6.4	-0.3	-3764.4	-28.6
7:14:57	6.0	-0.1	-3803.9	-29.8
7:15:12	6.3	-0.3	-3739.5	-28.8

?

Avg.= 169.3 4.2 -3212.6 321.7

KADIAN CORPORATION 498 PPM ETHANOL UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
SERIES

PA  
performed for:  
Date Printed = 06-22-1992 Current Time = 17:17:35  
File Name = C:\CENDATA\062292.PRN Calibration File: C:\CENDATA\062292.CAL

06-22-1992	THC1	SO2	THC2	
Time	PPM	%	PPM	PPM
7:17:43	678.4	18.7	-3748.9	758.6
7:17:44	678.4	18.7	-3748.9	758.6
7:17:57	754.9	4.2	-4134.7	687.8
7:18:12	768.9	8.2	-3912.3	682.6
7:18:27	759.5	-0.3	-3958.4	694.2
7:18:42	759.8	-0.3	-3958.9	698.9
7:18:57	761.5	-0.3	-3842.7	712.1
7:19:12	761.2	-0.3	-4038.7	721.7

=====  
Avg.= 739.3 3.1 -3915.2 708.9  
=====

759.6

694.9

ADRIAN CORPORATION 498 PPM ETHANOL UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data

SERIES

BA

performed for:

Date Printed = 05-22-1992 Current Time = 17:29:48

File Name = C:\CEM\DATA\MONDAY.PRN Calibration File: C:\CEM\DATA\880228.CAL

05-22-1992	THD1	O2	THD2	
Time	PPM	%	PPM	PPM

7:29:48	746.8	13.2	-499.3	1543.3
7:29:57	749.4	5.6	-3811.3	774.6
7:30:12	751.3	0.6	-3722.0	772.6
7:30:27	757.3	-2.5	-3768.6	747.9
7:30:42	764.9	-0.2	-3745.8	745.6
7:30:57	760.5	-2.3	-3752.3	742.7

Avg. =	<del>755.8</del>	3.1	-3216.4	887.7
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756.6

756.6

6/24/92

SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
10:14:49								
10:15:06								
10:15:09	1143.364	926.1296						
10:15:19	1162.385	931.9359						
10:15:29	1161.769	942.2397						
10:15:39	1134.752	922.3359						
10:15:49	1109.902	938.6096						
10:15:59	1095.133	931.7088						
10:16:09	1086.025	935.4031						
10:16:19	1081.618	918.0862						
10:16:29	1085.384	930.9563						
10:16:39	1094.202	950.6425						
10:16:49	1102.837	951.5802						
10:16:59	1121.457	955.7356						
10:17:09	1122.29	949.979		905	1.11		18.9	
10:17:19	1122.863	959.8864		ETH/THC	CH4/THC		AA/THC	
10:17:29	1118.866	954.5228		80.63869409	0.098904917		1.684056705	
10:17:39	1123.952	948.4513						
10:17:49	1125.423	964.6268						
10:17:59	1122.193	966.0553						
10:18:09	1133.534	951.179						
10:18:19	1150.226	944.4493						
10:18:29	1143.743	949.2678						
10:18:39	1126.484	949.4822						
10:18:49	1122.983	940.7847						
10:18:59	1133.361	938.2773						
10:19:09	1143.172	928.8914						
10:19:19	1152.402	942.0963						
10:19:29	1143.656	935.3555						
10:19:39	1115.739	940.8708						
10:19:49	1095.959	950.3023						
10:19:59	1088.09	946.0405						
10:20:09	1092.823	948.3124						
10:20:19	1097.376	945.7922						
10:20:29	1106.578	946.8023						
10:20:39	1117.749	943.081						
10:20:49	1137.927	941.827						
10:20:59	1151.628	957.5645						
10:21:09	1153.097	968.913						
10:21:19	1125.268	952.1523						
10:21:29	1110.697	961.9783						
10:21:39	1116.391	944.8093						
10:21:49	1117.758	948.4567						
10:21:59	1107.402	938.6044						
10:22:09	1101.867	929.4381						
10:22:19	1105.816	924.6859						
10:22:29	1113.95	909.8474						

6/24/92

SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
10:22:39	1116.253	919.3785	10:22					
10:22:49	1117.753	911.676	10:22					
10:22:59	1114.594	901.4822	10:22					
10:23:09	1085.474	892.2753	10:23					
10:23:19	1012.69	888.5257	10:23					
10:23:29	1102.212	898.6607	10:23					
10:23:39	1099.542	894.6998	10:23					
10:23:49	1075.982	911.4252	10:23					
10:23:59	1059.548	895.2262	10:23					
10:24:09	1059.692	898.1121	10:24					
10:24:19	1055.574	898.5815	10:24					
10:24:29	1043.426	905.0349	10:24					
10:24:39	1055.764	913.2214	10:24					
10:24:49	1061.602	917.9432	10:24					
10:24:59	1056.516	915.5048	10:24					
10:25:09	1040.006	918.418	10:25					
10:25:19	1034.86	914.7213	10:25					
10:25:29	1041.238	922.681	10:25					
10:25:39	1043.258	910.1058	10:25					
10:25:49	1061.395	895.3261	10:25					
10:25:59	1079.332	907.8491	10:25					
10:26:09	1097.038	891.774	10:26			519	7.91	56.8
10:26:19	1090.614	907.6392	10:26			ETH/THC	CH4/THC	AA/THC
10:26:29	1084.476	846.2916	10:26			58.19860188	0.886996032	6.369326757
10:26:39	1092.98	817.9387	10:26					
10:26:49	1095.106	802.5381	10:26					
10:26:59	1084.114	802.5864	10:26					
10:27:09	1064.007	812.7924	10:27					
10:27:19	1038.157	820.6837	10:27					
10:27:29	1014.312	811.1343	10:27					
10:27:39	1010.7	814.0139	10:27					
10:27:49	1012.37	807.3666	10:27					
AVG			10:27	664.2230962	445.7619861			
			10:27		END			
			10:27					
			10:27					
10:27:59	1029.467		10:27	328.2105				
10:28:09	1057.025		10:28	582.2205				
10:28:19	1071.819		10:28	875.144				
			10:28					
			10:28					
			10:28		READCO			
			10:28	OVEN	BURNER 1			
10:28:29	1060.289	896.0636	10:28					
10:28:39	1041.177	906.1691	10:28					
10:28:49	1036.05	904.5952	10:28					
10:28:59	1038.359	903.6984	10:28					

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SITE 3 DAY 2

FRONT GC RESULTS

TIME	THC 1	THC 2	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
	(TABLE) (ppmC)	(RACK) (ppmC)			
10:29:09	1042.262	899.8734			
10:29:19	1055.024	901.326			
10:29:29	1062.269	890.4268			
10:29:39	1069.857	896.5319			
10:29:49	1066.908	887.3057			
10:29:59	1057.229	887.403			
10:30:09	1057.771	875.1953			
10:30:19	1062.773	872.295			
10:30:29	1059.394	867.0562			
10:30:39	1051.547	859.7952			
10:30:49	1050.332	851.0807			
10:30:59	1056.708	853.2333			
10:31:09	1074.107	842.4548			
10:31:19	1077.267	840.0764			
10:31:29	1048.492	833.2515			
10:31:39	1012.046	819.0654			
10:31:49	1011.486	826.093			
10:31:59	1021.554	826.0377			
10:32:09	1019.686	837.855			
10:32:19	1013.838	844.4828			
10:32:29	1011.551	839.9028			
10:32:39	1018.671	850.1881			
10:32:49	1025.127	862.2214			
10:32:59	1028.283	869.386			
10:33:09	1031.778	899.8959			
10:33:19	1049.276	930.7147			
10:33:29	1050.322	951.6154			
10:33:39	924.7285	969.9881			
10:33:49	798.4049	976.5439			
10:33:59	1011.867	992.8957			
10:34:09	1096.237	1007.678			
10:34:19	1096.197	1013.107			
10:34:29	1078.438	1011.798			
10:34:39	1082.464	1027.269			
10:34:49	1096.424	1007.643			
10:34:59	1105.327	1010.022			
10:35:09	1092.391	1005.925			
10:35:19	1065.181	1008.632			
10:35:29	1056.712	1009.073			
10:35:39	1067.42	1003.108			
10:35:49	1074.588	984.6589			
10:35:59	1067.283	967.2311			
10:36:09	1068.876	947.1491			
10:36:19	1081.814	929.3514			
10:36:29	1076.573	902.8813			
10:36:39	1051.925	871.2044			
10:36:49	1039.665	846.8094			

REAR GC RESULTS

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
889	2.07	19.6
ETH/THC	CH4/THC	AA/THC
80.42868761	0.187274896	1.773230908



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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
10:44:49	1280.706	810.9567	10:44					
10:44:59	1276.345	805.7407	10:44					
10:45:09	1271.013	792.026	10:45					
10:45:19	1261.924	808.4622	10:45					
10:45:29	1261.275	846.5389	10:45					
10:45:39	1264.092	866.3571	10:45					
10:45:49	1262.699	878.387	10:45					
10:45:59	1264.408	888.063	10:45					
10:46:09	1269.048	911.4023	10:46					
10:46:19	1272.168	921.2154	10:46					
AVG			10:46	1132.909022	906.6358407			
			10:46		END			
			10:46					
			10:46					
10:46:29	1275.659		10:46	488.8219				
10:46:39	1274.528		10:46	195.6655				
10:46:49	1280.223		10:46	178.4046				
10:46:59	1280.652		10:46	756.5632				
10:47:09	1282.977		10:47	908.9				
10:47:19	1279.392		10:47	920.6602				
			10:47					
			10:47					
			10:47		READCO			
			10:47	OVEN	BURNER 2			
10:47:29	1282.116	939.0289	10:47					
10:47:39	1287.37	941.5116	10:47					
10:47:49	1291.632	946.4678	10:47					
10:47:59	1296.188	945.7973	10:47					
10:48:09	1296.286	957.8996	10:48					
10:48:19	1301.137	959.1124	10:48					
10:48:29	1309.179	951.71	10:48					
10:48:39	1313.226	959.9643	10:48					
10:48:49	1311.23	959.5153	10:48					
10:48:59	1308.67	962.1075	10:48					
10:49:09	1311.445	954.0935	10:49					
10:49:19	1312.807	953.8096	10:49					
10:49:29	1298.866	955.2377	10:49					
10:49:39	1284.524	960.0286	10:49					
10:49:49	1275.856	951.6373	10:49					
10:49:59	1274.895	960.3456	10:49					
10:50:09	1277.637	969.2308	10:50					
10:50:19	1281.084	955.3551	10:50					
10:50:29	1285.064	962.4932	10:50					
10:50:39	1282.186	960.9852	10:50					
10:50:49	1275.613	959.7226	10:50					
10:50:59	1274.482	953.9586	10:50					
10:51:09	1278.919	973.4252	10:51					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	FRONT GC RESULTS			REAR GC RESULTS		
	(TABLE)	(RACK)	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(ppmC)	(ppmC)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
			=====					
10:51:19	1286.546	955.6035	10:51					
10:51:29	1288.525	960.6119	10:51					
10:51:39	1292.529	963.8839	10:51					
10:51:49	1291.302	972.982	10:51					
10:51:59	1292.997	963.5978	10:51					
10:52:09	1296.702	966.7101	10:52					
10:52:19	1301.656	964.035	10:52					
10:52:29	1317.933	963.9249	10:52					
10:52:39	1323.885	962.2938	10:52					
10:52:49	1325.989	965.082	10:52	1070.263859	1.83	21.9		
10:52:59	1322.154	966.9312	10:52	ETH/THC	CH4/THC	AA/THC		
10:53:09	1309.404	972.2184	10:53	80.71438448	0.138010194	1.651597411		
10:53:19	1313.478	961.7503	10:53					
10:53:29	1312.397	971.6656	10:53					
10:53:39	1314.661	965.5724	10:53					
10:53:49	1312.925	967.44	10:53					
10:53:59	1309.923	964.3067	10:53					
10:54:09	1303.825	964.2518	10:54					
10:54:19	1300.709	966.1922	10:54					
10:54:29	1299.876	969.868	10:54					
10:54:39	1300.83	974.9156	10:54					
10:54:49	1304.85	964.0637	10:54					
10:54:59	1307.408	974.6823	10:54					
10:55:09	1309.06	978.6697	10:55					
10:55:19	1304.576	983.4522	10:55					
10:55:29	1301.623	995.9623	10:55					
10:55:39	1304.236	1018.982	10:55					
10:55:49	1308.782	1010.941	10:55					
10:55:59	1315.281	1013.522	10:55					
10:56:09	1324.043	1013.134	10:56					
10:56:19	1329.306	1029.389	10:56					
10:56:29	1337.309	1019.159	10:56					
10:56:39	1340.328	1011.075	10:56					
10:56:49	1336.565	1000.698	10:56					
10:56:59	1322.661	990.8313	10:56					
10:57:09	1307.397	957.2976	10:57					
10:57:19	1180.81	892.2678	10:57					
10:57:29	1260.894	883.9095	10:57					
10:57:39	1249.615	864.9393	10:57					
10:57:49	1281.798	866.7066	10:57					
10:57:59	1305.649	870.605	10:57					
10:58:09	1295.333	864.9053	10:58					
10:58:19	1308.932	862.962	10:58					
10:58:29	1313.216	870.7621	10:58					
10:58:39	1278.624	846.312	10:58					
10:58:49	1321.257	851.7072	10:58					
10:58:59	1308.983	855.3313	10:58					



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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)						
11:05:39	1273.151	1043.364						
11:05:49	1269.931	1015.895						
11:05:59	1260.714	986.9722						
11:06:09	1259.209	976.1388						
11:06:19	1261.579	956.472						
11:06:29	1262.058	956.8015						
11:06:39	1274.766	948.3276						
11:06:49	1279.514	941.3645						
11:06:59	1277.956	934.8147						
11:07:09	1270.12	917.8104						
11:07:19	1264.772	910.1154						
11:07:29	1257.8	909.0348						
11:07:39	1248.756	906.0615						
11:07:49	1249.375	926.3314						
11:07:59	1255.13	942.1569						
11:08:09	1271.286	949.5387						
11:08:19	1274.706	951.6537						
11:08:29	1279.922	955.3176						
11:08:39	1280.387	958.5424						
11:08:49	1289.699	950.6649						
11:08:59	1292.427	950.5151						
11:09:09	1280.049	963.7798						
11:09:19	1282.784	968.0917						
11:09:29	1287.335	974.6016						
11:09:39	1292.554	982.3892						
11:09:49	1295.819	997.15						
11:09:59	1283.675	988.0016						
11:10:09	1289.163	986.8068						
11:10:19	1301.744	993.0314						
11:10:29	1309.443	984.2043						
11:10:39	1310.776	989.865						
11:10:49	1313.542	1011.566						
11:10:59	1306.418	1011.917				1060	2.53	21.6
11:11:09	1308.809	1030.763				ETH/THC	CH4/THC	AA/THC
11:11:19	1308.913	1034.867				104.7880217	0.250107259	2.135303084
11:11:29	1303.805	1036.108						
11:11:39	1305.998	1044.017						
11:11:49	1303.425	1048.735						
11:11:59	1299.29	1044.946						
11:12:09	1292.598	1044.298						
11:12:19	1293.287	1053.731						
11:12:29	1282.899	1043.649						
11:12:39	1273.253	1032.499						
11:12:49	1268.021	1021.13						
11:12:59	1256.37	1017.431						
11:13:09	1249.08	994.2243						
11:13:19	1245.625	988.6686						



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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
11:20:09	241.2697	2243.774	11:20		:			
11:20:19	1608.925	2365.664	11:20		:			
11:20:29	1695.234	2453.365	11:20		:			
11:20:39	1711.401	2474.964	11:20		:			
11:20:49	1579.367	2474.49	11:20		:			
11:20:59	1406.12	2465.558	11:20		:			
11:21:09	1728.619	2434.925	11:21		:			
11:21:19	1693.779	2435.046	11:21		:			
11:21:29	1739.634	2444.524	11:21		:			
11:21:39	1840.831	2470.422	11:21		:			
11:21:49	1875.773	2433.557	11:21		:			
11:22:05	1947.351	2487.889	11:22		:			
11:22:09	1175.067	2353.419	11:22		:			
11:22:19	1523.389	2339.65	11:22		:			
11:22:29	1445.837	2346.496	11:22		:			
11:22:39	616.2654	2306.841	11:22		:			
11:22:49	254.8945	2205.53	11:22		:			
11:22:59	564.4043	2082.367	11:22		:			
11:23:09	1394.588	2077.586	11:23		:			
11:23:19	1802.327	2109.535	11:23		:			
11:23:29	1329.885	2191.879	11:23		:			
11:23:39	599.4908	2155.131	11:23		:			
11:23:49	1239.44	2089	11:23		:			
11:23:59	1463.657	2090.044	11:23		:			
11:24:09	1200.762	2106.193	11:24		:			
11:24:19	1633.328	2194.604	11:24		:			
11:24:29	1731.761	2185.835	11:24		:			
11:24:39	1754.593	2262.625	11:24		:			
11:24:49	1742.849	2300.351	11:24		:			
11:24:59	1738.104	2312.749	11:24		:			
11:25:09	1730.622	2342.345	11:25		:			
11:25:19	1725.438	2359.853	11:25		:			
11:25:29	1723.066	2371.739	11:25		:			
11:25:39	1728.334	2372.533	11:25		:			
11:25:49	1728.208	2390.452	11:25		:			
11:25:59	1721.566	2353.043	11:25		:			
11:26:09	1719.719	2380.114	11:26		:			
11:26:19	1727.189	2342.461	11:26		:			
11:26:29	1739.18	2337.091	11:26		:			
11:26:39	1735.922	2333.18	11:26		:			
11:26:49	1721.265	2352.26	11:26		:			
11:26:59	1729.681	2353.239	11:26		:			
11:27:09	1735.558	2322.935	11:27		:			
11:27:19	1728.971	2297.771	11:27		:			
11:27:29	1729.393	2277.204	11:27		:			
11:27:39	1731.986	2278.161	11:27		:			
11:27:49	1732.653	2192.141	11:27		:			

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SITE 3 DAY 2

FRONT GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)			
	(ppmC)	(ppmC)	=====		
11:27:59	1749.663	2247.122			
11:28:09	1741.2	2202.412			
11:28:19	1767.939	2204.471			
11:28:29	1776.257	2197.296			
11:28:39	1782.348	2146.089			
11:28:49	1764.95	2148.134			
11:28:59	1752.255	2086.019			
11:29:09	1753.837	2121.929			
11:29:19	1755.455	2026.297			
11:29:29	1756.011	2079.391			
11:29:39	1750.64	2014.488			
11:29:49	1764.355	2037.094			
11:29:59	1895.771	2001.721			
11:30:09	1886.661	1994.442			
11:30:19	2034.022	2054.875			
11:30:29	2020.58	1984.704			
11:30:39	1461.329	2037.159			
11:30:49	1281.136	1951.688			
11:30:59	1479.007	1981.807			
11:31:09	834.9814	1877.159			
11:31:19	1353.398	1872.25			
11:31:29	718.2827	1790.785			
11:31:39	305.1803	1707.422			
11:31:49	147.1562	1623.465			
11:31:59	92.5141	1469.734			
11:32:09	967.9273	1484.293			
11:32:19	903.0865	1465.73			
11:32:29	862.8245	1480.139			
11:32:39	1477.636	1457.99			
11:32:49	1152.131	1487.579			
11:32:59	1610.015	1497.519			
11:33:09	1787.143	1524.29			
11:33:19	1986.586	1566.1			
11:33:29	1968.206	1566.997			
11:33:39	1898.446	1599.861			
11:33:49	1841.563	1617.425			
11:33:59	1892.794	1659.706			
11:34:09	1941.133	1610.097			
11:34:19	1939.577	1633.255			
11:34:29	1938.837	1593.258			
11:34:39	1524.194	1589.796			
11:34:49	1708.981	1549.512			
11:34:59	1831.5	1509.786			
11:35:09	1835.199	1481.09			
11:35:19	1748.056	1447.339			
11:35:29	1668.317	1493.129			
11:35:39	1899.385	1399.764			

REAR GC RESULTS

ETH-OH	CH4	ACETALDEHYDE
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
=====		
	82.8	2050
		3.28
ETH/THC	CH4/THC	AA/THC
4.645557433	115.0168205	0.184026912

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FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	
	(TABLE)	(RACK)				(ppmV/wet)
11:35:49	1779.34	1413.198				
11:35:59	815.0302	1295.003				
11:36:09	332.0074	1263.705				
11:36:19	155.0926	1123.432				
11:36:29	92.16144	999.118				
11:36:39	70.50357	924.0307				
11:36:49	58.652	830.3361				
11:36:59	53.36104	846.2911				
11:37:09	51.44864	740.8352				
11:37:19	51.45839	762.981				
11:37:29	48.1651	677.0934		234	405 12.3	
11:37:39	47.62193	667.8712		ETH/THC	CH4/THC	AA/THC
11:37:49	45.47579	622.39	34.55948618	59.81449531	1.816588376	
11:37:59	45.66406	616.1461				
11:38:09	46.17988	597.7062				
11:38:19	41.29375	568.0977				
11:38:29	39.62412	576.976				
11:38:39	40.63443	535.4564				
11:38:49	42.89127	559.0583				
11:38:59	35.98257	528.7616				
11:39:09	35.64354	563.5251				
11:39:19	33.06514	537.9456				
11:39:29	57.9694	544.7972				
11:39:39	982.6181	589.1707				
11:39:49	799.028	642.9014				
11:39:59	502.0298	660.6661				
11:40:09	1306.339	711.104				
11:40:19	1570.517	830.3027				
11:40:29	1776.171	878.4265				
11:40:39	1800.669	999.6357				
11:40:49	1918.401	1066.659				
11:40:59	1909.294	1185.317				
11:41:09	1841.116	1226.59				
11:41:19	1891.927	1316.068				
11:41:29	1942.23	1402.444				
11:41:39	2006.244	1417.066				

ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
=====	=====	=====

OVEN

BURNER

TIME	BURNER	OVEN	ETH-OH	CH4	ACETALDEHYDE:
	(ppmV/wet)	(ppmV/wet)			
11:41:49	1887.849	1519.768			
11:41:59	1792.702	1495.952			
11:42:09	1667.978	1612.176			
11:42:19	1787.644	1570.688			
11:42:29	1800.03	1623.62			
11:42:39	1964.902	1614.077			
11:42:49	1956.719	1640.976			

ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
=====	=====	=====

PETERSON RAISON BREAD

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
11:42:59	1525.155	1695.774			
11:43:09	1717.766	1662.362			
11:43:19	1688.427	1721.907			
11:43:29	1725.436	1631.011			
11:43:39	1299.944	1732.23			
11:43:49	1019.704	1590.727			
11:43:59	687.2196	1641.544			
11:44:09	268.1931	1489.782			
11:44:19	117.5491	1405.857			
11:44:29	62.45073	1357.815			
11:44:39	49.90342	1227.035			
11:44:49	40.942	1249.876			
11:44:59	33.62011	1157.137			
11:45:09	61.00413	1213.396			
11:45:19	105.3589	1121.749			
11:45:29	53.42483	1166.033			
11:45:39	275.0523	1163.628			
11:45:49	1072.587	1238.025			
11:45:59	525.5173	1288.046			
11:46:09	973.2034	1362.463			
11:46:19	667.4298	1473.127			
11:46:29	255.784	1422.866			
11:46:39	793.5792	1491.355			
11:46:49	586.0684	1484.954			
11:46:59	202.3391	1590.889			
11:47:09	79.17856	1583.099			
11:47:19	236.5783	1564.094			
11:47:29	1137.271	1656.056			
11:47:39	1344.265	1711.715			
11:47:49	1187.334	1908.041			
11:47:59	1437.318	1911.608			
11:48:09	1111.577	2037.154			
11:48:19	1543.423	2003.677			
11:48:29	1499.075	2116.275			
11:48:39	1364.564	2155.212			
11:48:49	1506.917	2200.663			
11:48:59	1591.074	2211.387			
11:49:09	1701.733	2219.931			
11:49:19	1645.844	2304.672			
11:49:29	1781.972	2273.468			
11:49:39	1702.548	2385.291			
11:49:49	1817.029	2354.116			
11:49:59	1595.747	2433.51			
11:50:09	1161.15	2350.846			
11:50:19	1514.191	2381.695			
11:50:29	761.6376	2346.015			
11:50:39	292.3718	2255.287			

ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
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23.4	1680	2.98
ETH/THC	CH4/THC	AA/THC
2.948665993	211.6990969	0.375513874

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
11:50:49	130.0266	2203.715						
11:50:59	66.73925	2009.551						
11:51:09	52.80872	2015.114						
11:51:19	49.37179	1894.659						
11:51:29	47.49508	1932.793						
11:51:39	46.3162	1864.492						
11:51:49	45.84763	1850.948						
11:51:59	48.9349	1814.148						
11:52:09	452.4807	1804.834						
11:52:19	206.9615	1830.887						
11:52:29	603.6703	1796.909						
11:52:39	1104.781	1890.782						
11:52:49	1559.12	1913.033						
11:52:59	1473.995	2048.953						
11:53:09	1627.803	2066.576						
11:53:19	1760.729	2167.177						
11:53:29	1862.655	2233.602						
11:53:39	1871.346	2281.571						
11:53:49	1773.23	2369.958						
11:53:59	1872.711	2332.006						
11:54:09	1840.565	2431.315						
11:54:19	1650.825	2399.229						
11:54:29	837.9287	2475.467						
11:54:39	1300.133	2329.66						
11:54:49	1614.539	2346.47						
11:54:59	1635.259	2321.325						
11:55:09	1739.926	2388.618						
11:55:19	1115.15	2427.166						
11:55:29	1477.382	2417.937						
11:55:39	861.5722	2402.837						
11:55:49	1229.937	2284.894		579	779	30.8		
11:55:59	722.2817	2295.512		ETH/THC	CH4/THC	AA/THC		
11:56:09	582.2438	2174.94		25.34034401	34.0934853	1.347983757		
11:56:19	439.1838	2183.978						
11:56:29	177.2595	2057.705						
11:56:39	88.07742	2005.814						
11:56:49	55.52834	1963.8						
11:56:59	50.5662	1880.357						
11:57:09	433.8954	1904.092						
11:57:19	259.4011	1819.248						
11:57:29	104.8747	1892.657						
11:57:39	525.3582	1798.105						
11:57:49	382.6012	1884.064						
11:57:59	257.9881	1831.289						
11:58:09	440.7128	1856.906						
11:58:19	259.6712	1835.152						
11:58:29	1085.288	1837.97						

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)			
	(ppmC)	(ppmC)	=====		
11:58:39	694.0936	1918.091	11:58		:
11:58:49	375.9597	1883.89	11:58		:
11:58:59	583.773	1909.599	11:58		:
11:59:09	1355.734	1868.312	11:59		:
11:59:19	1628.866	1996.689	11:59		:
11:59:29	1921.142	2073.193	11:59		:
11:59:39	1860.79	2171.923	11:59		:
11:59:49	1791.464	2224.712	11:59		:
11:59:59	1595.481	2263.632	11:59		:
12:00:09	1442.451	2335.826	12:00		:
12:00:19	1728.076	2261.518	12:00		:
12:00:29	1771.381	2338.486	12:00		:
12:00:39	1752.082	2335.653	12:00		:
12:00:49	1487.82	2416.539	12:00		:
12:00:59	1607.667	2381.932	12:00		:
12:01:09	1780.637	2353.281	12:01		:
12:01:19	1862.756	2404.562	12:01		:
12:01:29	1957.934	2422.866	12:01		:
12:01:39	1550.406	2459.272	12:01		:
12:01:49	1422.117	2426.039	12:01		:
12:01:59	1367.819	2411.358	12:01		:
12:02:09	797.1227	2341.056	12:02		:
12:02:19	1360.747	2329.132	12:02		:
12:02:29	712.6418	2273.935	12:02		:
12:02:39	274.299	2184.696	12:02		:
12:02:49	122.5432	2106.635	12:02		:
12:02:59	62.96041	2025.019	12:02		:
12:03:09	113.5463	1958.721	12:03		:
12:03:19	449.9208	1944.25	12:03		:
12:03:29	200.7043	1911.823	12:03		:
12:03:39	972.9	1897.792	12:03		:
12:03:49	881.8939	1958.33	12:03		:
12:03:59	791.7554	1949.221	12:03		:
12:04:09	1248.083	1976.034	12:04		:
12:04:19	1508.278	2038.99	12:04		:
12:04:29	1738.176	2076.294	12:04		:
12:04:39	1775.397	2154.75	12:04		:
12:04:49	1786.558	2228.321	12:04		:
12:04:59	1979.067	2301.962	12:04		:
12:05:09	1910.312	2336.968	12:05		:
12:05:19	1814.423	2371.869	12:05		:
12:05:29	1758.623	2377.458	12:05		:
12:05:39	1723.023	2409.045	12:05		:
12:05:49	1806.331	2436.075	12:05		:
12:05:59	1864.301	2423.845	12:05		:
12:06:09	1826.903	2425.649	12:06		:
12:06:19	1785.622	2467.775	12:06		:

ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
=====		

69	2070	4.05
ETH/THC	CH4/THC	AA/THC
3.862175199	115.8652559	0.226692892

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:06:29	1643.421	2466.522	12:06					
12:06:39	1331.499	2458.852	12:06					
12:06:49	1680.016	2404.885	12:06					
12:06:59	1604.589	2375.683	12:06					
12:07:09	1798.164	2362.224	12:07					
12:07:19	1807.617	2413.242	12:07					
12:07:29	1820.748	2421.574	12:07					
12:07:39	1902.487	2449.943	12:07					
12:07:49	1408.092	2425.61	12:07					
12:07:59	1600.131	2430.475	12:07					
12:08:09	1222.398	2383.923	12:08					
12:08:19	1235.07	2326.862	12:08					
12:08:29	1413.297	2318.746	12:08					
12:08:39	1162.302	2238.752	12:08					
12:08:49	1483.766	2283.72	12:08					
12:08:59	785.3416	2211.893	12:08					
12:09:09	1282.421	2193.96	12:09					
12:09:19	913.2385	2168.917	12:09					
12:09:29	350.2973	2121.793	12:09					
12:09:39	148.5312	2019.1	12:09					
12:09:49	94.95934	1900.614	12:09					
12:09:59	959.5391	1882.041	12:09					
12:10:09	1469.786	1909.886	12:10					
AVG	1090.209	2027.608						
		END						
		TRANSIENT						
12:10:19	1809.075	1990.799	12:10					
12:10:29	1848.934	2048.522	12:10					
12:10:39	1792.796	2106.712	12:10					
12:10:49	1764.085	2169.294	12:10					
12:10:59	1735.268	2220.003	12:10					
12:11:09	1723.685	2245.516	12:11					
12:11:19	1709.387	2254.703	12:11					
12:11:29	1709.151	2250.803	12:11					
12:11:39	1707.201	2251.098	12:11					
12:11:49	1703.613	2262.625	12:11					
12:11:59	1701.484	2265.956	12:11					
12:12:09	1705.23	2257.283	12:12					
12:12:19	1697.483	2258.702	12:12					
12:12:29	1701.723	2231.93	12:12					
12:12:39	1696.058	2242.245	12:12					
12:12:49	1693.822	2244.099	12:12					
12:12:59	1693.233	2248.118	12:12					
12:13:09	1692.956	2211.324	12:13					
12:13:19	1698.843	2237.435	12:13					
12:13:29	1690.885	2240.229	12:13					

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SITE 3 DAY 2

FRONT GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	
	(ppmC)	(ppmC)	=====			
12:13:39	1696.252	2234.724	12:13	342	1770	26 :
12:13:49	1697.402	2203.558	12:13	ETH/THC	CH4/THC	AA/THC :
12:13:59	1705.809	2173.943	12:13	15.30390330	79.20441182	1.163454636 :
12:14:09	1714.539	2167.392	12:14			:
12:14:19	1705.8	2162.373	12:14			:
12:14:29	1711.73	2122.734	12:14			:
12:14:39	1705.822	2140.068	12:14			:
12:14:49	1696.907	2108.176	12:14			:
12:14:59	1688.706	2121.63	12:14			:
12:15:09	1693.552	2104.92	12:15			:
12:15:19	1698.141	2069.543	12:15			:
12:15:29	1697.873	2076.776	12:15			:
12:15:39	1698.625	2070.817	12:15			:
12:15:49	1694.367	2052.103	12:15			:
12:15:59	1682.464	2037.642	12:15			:
12:16:09	1682.963	2064.099	12:16			:
12:16:19	1684.379	2032.261	12:16			:
12:16:29	1680.596	2020.089	12:16			:
12:16:39	1691.704	2031.259	12:16			:
12:16:49	1690.82	2007.076	12:16			:
12:16:59	1690.324	2015.297	12:16			:
12:17:09	1693.891	2009.01	12:17			:
12:17:19	1691.823	1991.018	12:17			:
12:17:29	1692.944	1968.358	12:17			:
12:17:39	1691.716	1942.067	12:17			:
12:17:49	1687.756	1946.934	12:17			:
12:17:59	1689.775	1928.443	12:17			:
12:18:09	1693.846	1904.521	12:18			:
12:18:19	1828.043	1903.546	12:18			:
12:18:29	1860.866	1900.086	12:18			:
12:18:39	1816.418	1891.678	12:18			:
12:18:49	1774.906	1878.977	12:18			:
12:18:59	1735.38	1873.509	12:18			:
12:19:09	1681.823	1885.562	12:19			:
12:19:19	1826.932	1832.683	12:19			:
12:19:29	1808.139	1789.181	12:19			:
12:19:39	1979	1776.109	12:19			:
12:19:49	1929.746	1781.171	12:19			:
12:19:59	1927.846	1746.83	12:19			:
12:20:09	2015.169	1763.777	12:20			:
12:20:19	1820.211	1735.88	12:20			:
12:20:29	1243.552	1681.794	12:20			:
12:20:39	1612.536	1644.371	12:20			:
12:20:49	1504.586	1583.814	12:20			:
12:20:59	1716.35	1517.032	12:20			:
12:21:09	1799.506	1477.147	12:21			:
12:21:19	1782.763	1427.324	12:21			:

REAR GC RESULTS

ETH-OH	CH4	ACETALDEHYDE:
(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
=====		

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:21:29	1521.816	1436.738	12:21		:			
			00:00		:			
			00:00		:			
			00:00		:			
12:21:49	641.3528	1229.8	12:21		:			
12:21:49	641.3528	1229.8	12:21		:			
12:21:59	95.83016	159.2678	12:21		:			
12:22:09	86.44753	119.6537	12:22		:			
12:22:19	80.76048	106.4535	12:22		:			
12:22:29	77.80293	99.21793	12:22		:			
12:22:39	75.61354	93.42786	12:22		:			
12:22:49	75.1671	85.47584	12:22		:			
12:22:59	75.33196	86.43583	12:22		:			
12:23:09	75.0975	87.02895	12:23		:			
12:23:19	75.53099	86.88168	12:23		:			
12:23:29	71.82817	83.13383	12:23		:			
12:23:39	75.73591	83.88923	12:23		:			
12:23:49	74.00414	80.80225	12:23		:			
12:23:59	74.70087	81.29612	12:23		:			
12:24:09	76.05185	77.47932	12:24		:			
12:24:19	75.50855	80.43837	12:24		:			
12:24:29			12:24		:	83.62755		
12:24:39			12:24		:	136.2104		
12:24:49			12:24		:	291.1989		
12:24:59	77.95646	91.49765	12:24		:			
12:25:09	73.73983	77.57048	12:25		:			
12:25:19	77.69182	77.39664	12:25		:			
12:25:29	75.84042	76.36067	12:25		:			
	75.31994	82.54906	00:00		:			
			00:00		:			
			00:00		:			
12:25:46	75.12124	75.85218	12:25		:			
			00:00		:			
			00:00		:			
			00:00		:			
12:26:10	266.8867	73.23716	12:26		:			
12:26:11	266.8867	73.23716	12:26		:			
12:26:11	266.8867	73.23716	12:26		:			
12:26:19	1673.793	1056.189	12:26		:			
12:26:29	1465.163	1083.809	12:26		:			
12:26:39	238.2402	1014.852	12:26		:			
12:26:49	213.4401	478.5779	12:26		:			
12:26:59	1119.561	228.1933	12:26		:			
12:27:09	1664.741	326.1627	12:27		:			
12:27:19	1676.275	812.5871	12:27		:			
12:27:29	1676.73	1078.61	12:27		:			
12:27:39	1667.553	1102.397	12:27		:			

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:27:49	1670.048	1088.353	12:27		:			
12:27:59	1679.175	1107.315	12:27		:			
12:28:09	1140.097	1069.842	12:28		:			
12:28:19	238.6992	1012.014	12:28		:			
12:28:29	212.5757	329.2756	12:28		:			
12:28:39	206.6566	205.8055	12:28		:			
12:28:49	202.9446	195.4279	12:28		:			
12:28:59	200.7525	192.4182	12:28		:			
12:29:09	200.5007	188.6145	12:29		:			
12:29:19	200.0384	188.3264	12:29		:			
12:29:29	198.6127	188.0117	12:29		:			
12:29:39	197.9994	189.6242	12:29		:			
12:29:49	198.1171	190.1576	12:29		:			
12:29:59	198.1821	189.0093	12:29		:			
12:30:09	197.6915	190.9658	12:30		:			
12:30:19	198.7345	188.3035	12:30		:			
12:30:29	198.5408	189.7477	12:30		:			
12:30:39	196.41	189.9504	12:30		:			
12:30:49	197.693	188.1657	12:30		:			
12:30:59	198.5477	187.4272	12:30		:			
12:31:09	198.2349	187.2388	12:31		:			
12:31:19	197.648	189.4794	12:31		:			
12:31:29	198.2883	186.7576	12:31		:			
12:31:39	196.9006	188.3668	12:31		:			
12:31:49	198.0792	188.6904	12:31		:			
12:31:59	199.1095	186.1927	12:31		:			
12:32:09	198.8848	188.0944	12:32		:			
12:32:19	200.5065	186.7884	12:32		:			
12:32:29	199.8241	188.6065	12:32		:			
12:32:39	198.8678	187.9381	12:32		:			
12:32:49	198.6792	186.8922	12:32		:			
	198.3596	188.4004	00:00		:			
			00:00		:			
			00:00		:			
12:32:59	194.3548	192.8902	12:32		:			
12:33:09	1326.533	236.0466	12:33		:			
12:33:19	1636.384	306.4375	12:33		:			
12:33:29	1683.415	781.9615	12:33		:			
12:33:39	1757.101	1108.276	12:33		:			
12:33:49	1748.628	1104.151	12:33		:			
12:33:59	1733.131	1129.176	12:33		:			
12:34:09	1709.932	1118.533	12:34		:			
12:34:19	1692.626	1121.674	12:34		:			
12:34:29	1875.861	1159.672	12:34		:			
12:34:39	1843.427	1141.368	12:34		:			
12:34:49	1757.921	1154.555	12:34		:			
12:34:59	234.2325	1100.107	12:34		:			

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:35:09	28.04234	581.6799	12:35					
06-24-199	THC1		ERR					
TIME	PPM	PPM	ERR					
12:41:03	1709.333	1251.9	12:41					
12:41:09	1710.994	1116.803	12:41					
12:41:19	1714.327	1143.303	12:41					
12:41:29	1710.352	1137.787	12:41					
12:41:39	1703.897	1144.319	12:41					
12:41:49	1704.924	1155.324	12:41					
12:41:59	1947.97	1136.658	12:41					
12:42:09	1918.458	1175.941	12:42					
12:42:19	1835.725	1154.213	12:42					
12:42:29	1782.873	1199.575	12:42					
12:42:39	1748.986	1197.219	12:42					
12:42:49	1729.409	1210.014	12:42					
12:42:59	1715.278	1179.253	12:42					
12:43:09	1806.358	1172.256	12:43					
12:43:19	2029.622	1214.82	12:43					
12:43:29	1951.229	1188.023	12:43					
12:43:39	1853.35	1228.494	12:43					
12:43:49	1809.291	1238.511	12:43					
12:43:59	1675.384	1231.752	12:43					
12:44:09	1826.342	1248.474	12:44					
12:44:19	1845.509	1200.393	12:44					
12:44:29	1975.008	1217.256	12:44					
12:44:39	2010.507	1227.535	12:44					
12:44:49	2055.249	1229.062	12:44					
12:44:59	2012.775	1263.792	12:44					
12:45:09	1802.645	1243.125	12:45					
12:45:19	1898.888	1289.205	12:45					
12:45:29	1508.825	1243.729	12:45					
12:45:39	921.4094	1157.498	12:45					
12:45:49	1314.944	1161.88	12:45					
12:45:59	948.6625	1024.859	12:45					
12:46:09	1502.907	1019.046	12:46					
12:46:19	1159.733	965.0895	12:46					
12:46:29	1435.76	957.9059	12:46					
12:46:39	1527.586	969.0927	12:46					
12:46:49	1558.119	941.5225	12:46					
12:46:59	1704.293	972.3431	12:46					
12:47:09	1743.789	974.1825	12:47					
12:47:19	1837.922	1023.4	12:47					
12:47:29	1878.442	1013.752	12:47					
12:47:39	1924.069	1074.88	12:47					
12:47:49	1837.038	1084.747	12:47					
12:47:59	1769.628	1115.018	12:47					
12:48:54	1741.754	1149.51	12:48					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
			00:00					
			00:00					
			00:00					
12:48:54	1741.754	1149.51	12:48					
12:48:54	1741.754	1149.51	12:48					
12:48:55	1741.754	1149.51	12:48					
12:48:55	1741.754	1149.51	12:48					
12:48:59	2022.086	1921.622	12:48					
12:49:09	2022.423	1912.401	12:49					
12:49:19	2022.7	1912.938	12:49					
12:49:29	2021.089	1901.797	12:49					
12:49:39	2022.63	1891.656	12:49					
12:49:49	2024.065	1910.986	12:49					
12:49:59	2023.618	1894.18	12:49					
12:50:09	2023.714	1917.206	12:50					
12:50:19	2025.221	1917.22	12:50					
12:50:29	2024.148	1913.447	12:50					
12:50:39	1957.404	1909.927	12:50					
12:50:49	1802.045	1893.841	12:50					
	2023.169	1909.345	00:00					
			00:00					
			00:00					
12:51:02	1742.403	1913.561	12:51					
			00:00					
			00:00					
			00:00					
12:51:17	1945.968	1367.857	12:51					
12:51:19	326.5577	1733.656	12:51					
12:51:29	315.5215	666.7177	12:51					
12:51:39	306.0957	311.6649	12:51					
12:51:49	303.7704	293.9864	12:51					
12:51:59	298.4379	296.1208	12:51					
12:52:09	308.3479	282.3512	12:52					
12:52:19	313.4165	277.8408	12:52					
12:52:29	309.8468	280.888	12:52					
12:52:39	309.7016	274.6529	12:52					
12:52:49	293.907	292.3982	12:52					
12:52:59	291.1842	291.2758	12:52					
	307.0881	286.1892	00:00					
			00:00					
			00:00					
12:53:14	297.0764	288.8731	12:53					
12:53:19	300.0995	299.8881	12:53					
12:53:29	291.1361	293.7148	12:53					
12:53:39	1044.913	310.3051	12:53					
12:53:49	1597.722	396.3644	12:53					
12:53:59	1757.574	697.4655	12:53					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:54:09	1803.085	1048.934	12:54					
12:54:19	1776.285	1050.804	12:54					
12:54:44	1496.662	1089.191	12:54					
			00:00					
			00:00					
			00:00					
12:54:45	1496.662	1089.191	12:54					
12:54:49	1992.996	1713.647	12:54					
12:54:59	2001.681	1922.381	12:54					
12:55:09	2002.685	1930.628	12:55					
12:55:19	2006.067	1950.07	12:55					
12:55:29	2017.343	1949.357	12:55					
12:55:39	2019.486	1950.531	12:55					
12:55:49	2020.503	1962.587	12:55					
	2011.294	1944.259	00:00					
			00:00					
			00:00					
12:55:59	2011.765	1895.664	12:55					
12:56:09	2016.714	1972.054	12:56					
12:56:19	1984.995	1959.498	12:56					
12:56:29	1884.156	1933.281	12:56					
12:56:53	2063.317	1914.765	12:56					
			00:00					
			00:00					
			00:00					
12:56:53	2063.317	1914.765	12:56					
12:56:59	817.4257	935.1273	12:56					
12:57:09	811.5256	815.8438	12:57					
12:57:19	806.1244	778.6752	12:57					
12:57:29	805.8156	779.2504	12:57					
12:57:39	798.4967	790.0677	12:57					
12:57:49	805.2312	777.2112	12:57					
12:57:59	801.8687	778.8299	12:57					
12:58:09	799.6353	791.3452	12:58					
12:58:19	799.1641	786.8271	12:58					
12:58:29	801.7368	779.1042	12:58					
12:58:39	799.1679	776.3936	12:58					
12:58:49	798.1258	793.9531	12:58					
	801.5366	783.1657	00:00					
			00:00					
			00:00					
12:59:02	803.8138	771.5433	12:59					
12:59:09	888.9452	762.9091	12:59					
12:59:19	1484.515	820.8989	12:59					
12:59:29	1817.526	843.5011	12:59					
12:59:39	1565.884	1015.103	12:59					
12:59:49	1574.034	1124.156	12:59					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
13:13:59	2006.556	1221.594						
13:14:09	2052.654	1228.015						
13:14:19	2080.39	1260.594						
13:14:29	2051.28	1289.789						
13:14:39	1562.906	1296.499						
13:14:49	1727.264	1271.472						
13:14:59	1816.727	1240.267						
13:15:09	1847.603	1229.409						
13:15:19	1725.608	1205.42						
13:15:29	1167.101	1160.681						
13:15:39	1608.419	1144.959						
13:15:49	1131.786	1103.609						
13:15:59	937.1735	1039.378						
13:16:09	1525.208	1010.817						
13:16:19	1143.494	955.3958						
13:16:29	1590.985	939.0853						
13:16:39	1739.488	954.0398						
13:16:49	1772.924	959.4559						
13:16:59	1372.907	977.1678						
13:17:09	1666.877	1014.216						
13:17:19	1712.378	1007.545						
13:17:29	1829.667	1038.694						
13:17:39	1824.244	1045.983						
13:17:49	1883.614	1059.755						
13:17:59	1893.082	1111.251						
13:18:09	1964.677	1118.094						
13:18:19	1999.072	1172.149						
13:18:29	1876.638	1153.85						
13:18:39	1800.427	1195.538						
13:18:49	1807.74	1195.222						
13:18:59	1869.303	1211.817						
13:19:09	1845.109	1216.817						
13:19:19	1824.856	1184.189						
13:19:29	1800.36	1221.644						
13:19:39	1978.068	1241.055						
13:19:49	1894.143	1227.727						
13:19:59	1935.142	1231.087						
13:20:09	1965.46	1255.347						
13:20:19	1915.018	1240.269						
13:20:29	1837.693	1251.156						
13:20:39	1302.923	1253.411						
13:20:49	1537.869	1200.146						
13:20:59	1698.19	1171.26						
13:21:09	1807.559	1117.344						
13:21:19	1870.09	1157.461						
13:21:29	1675.848	1122.12						
13:21:39	1745.619	1176.782						

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)						
	(ppmC)	(ppmC)	=====			=====		
13:21:49	1839.604	1136.604	13:21					
13:21:59	1805.225	1146.006	13:21					
13:22:09	1502.226	1149.313	13:22					
13:22:19	1695.938	1188.519	13:22					
13:22:29	1777.61	1146.378	13:22					
13:22:39	1719.386	1140.104	13:22					
13:22:49	1832.092	1135.254	13:22					
13:22:59	1646.256	1144.183	13:22					
13:23:09	1733.397	1144.336	13:23					
13:23:19	1752.765	1147.009	13:23					
13:23:29	1717.062	1115.465	13:23					
13:23:39	1843.712	1122.107	13:23					
13:23:49	1896.874	1111.967	13:23					
13:23:59	1937.031	1160.874	13:23					
13:24:09	1975.83	1191.544	13:24					
13:24:19	1967.728	1202.777	13:24					
13:24:29	1877.735	1223.401	13:24					
13:24:39	1909.89	1235.83	13:24					
13:24:49	1903.284	1241.095	13:24					
13:24:59	1951.423	1221.516	13:24					
13:25:09	1882.657	1233.107	13:25					
13:25:19	1837.147	1226.686	13:25					
13:25:29	1604.886	1225.353	13:25					
13:25:39	1767.655	1195.89	13:25					
13:25:49	1498.447	1192.313	13:25					
13:25:59	1618.969	1144.99	13:25					
13:26:09	1672.394	1149.413	13:26					
13:26:19	1533.988	1073.645	13:26					
13:26:29	1700.867	1129.039	13:26					
13:26:39	1583.453	1080.223	13:26					
13:26:49	1770.407	1106.854	13:26					
13:26:59	1922.035	1081.961	13:26					
13:27:09	1980.008	1128.397	13:27					
13:27:19	1904.658	1141.094	13:27					
13:27:29	1989.47	1199.247	13:27					
13:27:39	1918.252	1220.071	13:27					
13:27:49	2035.041	1206.195	13:27					
13:27:59	1918.316	1259.461	13:27					
13:28:09	1978.983	1268.225	13:28					
13:28:19	1915.854	1290.654	13:28					
13:28:29	1883.536	1254.575	13:28					
13:28:39	1709.926	1255.454	13:28					
13:28:49	1834.371	1191.659	13:28					
13:28:59	1892.263	1209.729	13:28					
13:29:09	1830.605	1173.411	13:29					
13:29:19	1348.2	1205.943	13:29					
13:29:29	1272.939	1128.747	13:29					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)						
	(ppmC)	(ppmC)	=====			=====		
13:29:39	1683.198	1119.564	13:29					:
13:29:49	2008.119	1067.225	13:29					:
13:29:59	1931.75	1120.24	13:29					:
13:30:09	1633.637	1122.483	13:30					:
13:30:19	1850.206	1168.083	13:30					:
13:30:29	1981.074	1145.925	13:30					:
13:30:39	2065.406	1178.09	13:30					:
13:30:49	1575.059	1195.412	13:30					:
13:30:59	1343.763	1137.876	13:30					:
13:31:09	1731.234	1134.634	13:31					:
13:31:19	1449.383	1063.719	13:31					:
13:31:29	1699.809	1043.102	13:31					:
13:31:39	1723.934	1019.914	13:31					:
13:31:49	1807.042	1020.988	13:31					:
13:31:59	1687.501	1041.56	13:31					:
13:32:09	1631.146	1041.567	13:32					:
13:32:19	1827.777	1043.411	13:32					:
13:32:29	2038.251	1082.274	13:32					:
13:32:39	1928.563	1105.317	13:32					:
13:32:49	1978.496	1166.716	13:32					:
13:32:59	1881.083	1194.922	13:32					:
13:33:09	1532.541	1161.647	13:33					:
13:33:19	1789.054	1167.695	13:33					:
13:33:29	1838.016	1141.902	13:33					:
13:33:39	2007.7	1131.338	13:33					:
13:33:49	1762.631	1167.955	13:33					:
13:33:59	1680.291	1155.979	13:33					:
13:34:09	1829.491	1182.17	13:34					:
13:34:19	1722.932	1159.848	13:34					:
13:34:29	1860.891	1167.225	13:34					:
13:34:39	1862.701	1165.197	13:34					:
13:34:49	1936.776	1164.799	13:34					:
13:34:59	1897.548	1191.002	13:34					:
13:35:09	2016.343	1190.081	13:35					:
13:35:19	1919.514	1238.119	13:35					:
13:35:29	1952.422	1223.504	13:35					:
13:35:39	1900.654	1259.643	13:35					:
13:35:49	2038.095	1242.99	13:35					:
13:35:59	1974.655	1296.07	13:35					:
13:36:09	1753.911	1273.387	13:36					:
13:36:19	1800.621	1284.866	13:36					:
13:36:29	1840.702	1244.484	13:36					:
13:36:39	1797.267	1225.737	13:36					:
13:36:49	1856.084	1227.795	13:36					:
13:36:59	1952.885	1182.632	13:36					:
13:37:09	1969.523	1182.241	13:37					:
13:37:19	1547.604	1180.01	13:37					:

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SITE 3 DAY 2

## FRONT GC RESULTS

## REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet) :	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
13:37:29	1647.729	1194.672	13:37		:			
13:37:39	1788.715	1173.693	13:37		:			
13:37:49	1899.367	1159.204	13:37		:			
13:37:59	1649.815	1161.893	13:37		:			
13:38:09	1440.207	1147.565	13:38		:			
13:38:19	1711.292	1124.751	13:38		:			
13:38:29	1516.076	1110.74	13:38		:			
13:38:39	1600.237	1082.686	13:38		:			
13:38:49	1762.952	1089.761	13:38		:			
13:38:59	1916.655	1049.984	13:38		:			
13:39:09	1909.573	1108.009	13:39		:			
13:39:19	1979.889	1114.913	13:39		:			
13:39:29	2075.348	1169.095	13:39		:			
13:39:39	1904.194	1182.179	13:39		:			
13:39:49	1423.387	1208.21	13:39		:			
13:39:59	1682.504	1194.213	13:39		:			
13:40:09	1465.128	1148.66	13:40		:			
13:40:19	1724.224	1100.799	13:40		:			
13:40:29	1746.328	1113.003	13:40		:			
13:40:39	1833.74	1105.781	13:40		:			
13:40:49	1968.042	1122.992	13:40		:			
13:40:59	2027.134	1151.491	13:40		:			
13:41:09	1904.849	1172.674	13:41		:			
13:41:19	1919.487	1215.244	13:41		:			
13:41:29	1866.971	1200.228	13:41		:			
13:41:39	1866.924	1213.461	13:41		:			
13:41:49	1914.299	1215.253	13:41		:			
13:41:59	1815.201	1222.789	13:41		:			
13:42:09	1705.933	1201.198	13:42		:			
13:42:19	1259.714	1199.356	13:42		:			
13:42:29	1644.448	1173.684	13:42		:			
13:42:39	1746.338	1130.842	13:42		:			
13:42:49	1731.237	1096.039	13:42		:			
13:42:59	1404.765	1133.958	13:42		:			
13:43:09	1201.43	1076.243	13:43		:			
13:43:19	1667.555	1098.324	13:43		:			
13:43:29	1889.406	1055.199	13:43		:			
13:43:39	1976.13	1090.982	13:43		:			
13:43:49	1878.114	1105.025	13:43		:			
13:43:59	2059.355	1145.496	13:43		:			
13:44:09	1990.146	1189.647	13:44		:			
13:44:19	2002.205	1220.334	13:44		:			
13:44:29	2059.93	1275.887	13:44		:			
13:44:39	1960.344	1252.603	13:44		:			
13:44:49	2083.902	1283.251	13:44		:			
13:44:59	1994.276	1302.588	13:44		:			
13:45:09	2130.265	1318.165	13:45		:			

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TIME	FRONT GC RESULTS		REAR GC RESULTS					
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
13:45:19	2056.294	1314.797	13:45					
13:45:29	1902.845	1337.975	13:45					
13:45:39	1441.661	1290.843	13:45					
13:45:49	1706.934	1318.975	13:45					
13:45:59	1694.86	1226.692	13:45					
13:46:09	1600.248	1198.343	13:46					
13:46:19	1637.317	1177.084	13:46					
13:46:29	1347.668	1129.212	13:46					
13:46:39	1650.648	1119.997	13:46					
13:46:49	1413.277	1073.098	13:46					
13:46:59	1726.208	1047.068	13:46					
13:47:09	1633.08	1073.136	13:47					
13:47:19	1825.781	1051.518	13:47					
13:47:29	1915.014	1054.741	13:47					
13:47:39	2070.364	1097.689	13:47					
13:47:49	1821.729	1138.102	13:47					
13:47:59	1796.901	1164.575	13:47					
13:48:09	1804.906	1177.532	13:48					
13:48:19	1594.759	1158.264	13:48					
13:48:29	1790.163	1162.596	13:48					
13:48:39	1815.96	1153.859	13:48					
13:48:49	1665.547	1144.747	13:48					
13:48:59	1569.406	1163.944	13:48					
13:49:09	1790.004	1148.181	13:49					
13:49:19	1950.195	1133.915	13:49					
13:49:29	2034.047	1144.602	13:49					
13:49:39	1878.262	1163.559	13:49					
13:49:49	1948.489	1200.181	13:49					
13:49:59	1929.25	1249.329	13:49					
13:50:09	1852.411	1207.089	13:50					
13:50:19	1948.679	1264.154	13:50					
13:50:29	1882.189	1223.881	13:50					
13:50:39	1818.474	1241.959	13:50					
13:50:49	1754.629	1242.871	13:50					
13:50:59	1860.39	1221.933	13:50					
13:51:09	1891.145	1234.219	13:51					
13:51:19	1847.425	1202.275	13:51					
13:51:29	1717.388	1214.578	13:51					
13:51:39	1464.944	1205.054	13:51					
13:51:49	1709.335	1214.14	13:51					
13:51:59	1908.827	1166.979	13:51					
13:52:09	1994.633	1190.24	13:52					
13:52:19	1457.876	1163.078	13:52					
13:52:29	1628.027	1187.476	13:52					
13:52:39	1786.627	1162.373	13:52					
13:52:49	1879.206	1140.588	13:52					
13:52:59	1625.31	1121.332	13:52					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)						
	(ppmC)	(ppmC)	=====			=====		
14:31:49	1592.359	1875.916	14:31					
14:31:59	970.0393	1768.542	14:31					
14:32:09	1338.567	1891.703	14:32					
14:32:19	657.4894	1797.217	14:32					
14:32:29	277.7296	1796.798	14:32					
14:32:39	162.9769	1683.471	14:32					
14:32:49	78.2225	1628.818	14:32			19.9	56.9	3.26
14:32:59	491.6781	1614.503	14:32			ETH/THC	CH4/THC	AA/THC
14:33:09	365.6512	1617.984	14:33			25.44025056	72.74121895	4.167598836
14:33:19	142.6326	1632.931	14:33					
14:33:29	62.18546	1607.252	14:33					
14:33:39	49.83724	1631.932	14:33					
14:33:49	39.33422	1627.374	14:33					
14:33:59	33.56037	1650.461	14:33					
14:34:09	33.25121	1631.977	14:34					
14:34:19	703.2398	1766.774	14:34					
14:34:29	1004.367	1771.527	14:34					
14:34:39	377.9358	1947.997	14:34					
14:34:49	1067.883	1997.003	14:34					
14:34:59	709.3223	2171.805	14:34					
14:35:09	254.3757	2126.13	14:35					
14:35:19	101.5446	2235.546	14:35					
14:35:29	59.18256	2124.34	14:35					
14:35:39	821.1354	2263.91	14:35					
14:35:49	516.2004	2236.482	14:35					
14:35:59	651.0616	2375.126	14:35					
14:36:09	1114.799	2341.042	14:36					
14:36:19	458.8659	2453.413	14:36					
14:36:29	744.049	2425.598	14:36					
14:36:39	831.2526	2495.806	14:36					
14:36:49	1214.465	2497.046	14:36					
14:36:59	641.7054	2559.371	14:36					
14:37:09	829.5975	2532.616	14:37					
14:37:19	1198.062	2564.892	14:37					
14:37:29	1277.437	2625.99	14:37					
14:37:39	1591.039	2635.461	14:37					
14:37:49	1859.56	2741.657	14:37					
14:37:59	1873.03	2802.875	14:37					
14:38:09	1416.106	2862.046	14:38					
14:38:19	1651.89	2841.652	14:38					
14:38:29	1767.657	2913.184	14:38					
14:38:39	1882.247	2937.28	14:38					
14:38:49	1699.454	2979.349	14:38					
14:38:59	1779.201	2959.681	14:38					
			00:00					
			00:00					
	PETERSON		00:00					

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FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETA	DEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)							
13:53:09	1257.688	1110.91							
13:53:19	1641.074	1119.046							
13:53:29	1904.415	1095.304							
13:53:39	2000.037	1093.049							
13:53:49	1956.561	1151.109							
13:53:59	2018.734	1179.175							
13:54:09	1939.962	1195.958							
13:54:19	1972.96	1214.038							
13:55:19	1886.543	1215.27							
13:56:19	1847.752	1247.128							
13:57:19	1525.123	1144.969							
13:58:19	1112.655	965.2709							
13:59:19	868.8178	826.7996							
14:00:19	1607.791	790.0254							
14:01:19	1689.449	1035.345							
14:02:19	1731.535	1178.687							
AVG	1762.290	1154.583							
		END							
	BURNER	OVEN							
14:03:19	597.3244	1097.475	14:03	TRANSIENT					
14:04:19	50.82591	757.9513	14:04						
14:05:19	51.40333	653.5175	14:05						
14:06:19	71.28454	675.7305	14:06						
14:07:19	116.7633	809.2211	14:07						
14:08:19	1088.147	1018.269	14:08						
14:09:19	1527.59	1571.525	14:09						
14:10:19	1140.445	1715.21	14:10						
14:11:19	1358.073	2049.989	14:11						
14:12:19	100.2013	2078.332	14:12						
14:13:19	730.0846	2168.254	14:13						
14:13:31	1554.624	2497.136	14:13						
14:13:39	557.2234	2526.872	14:13						
14:13:50	1072.898	2511.517	14:13						
14:14:04	775.0676	2491.38	14:14						
14:14:09	1480.071	2574.364	14:14						
14:14:19	995.893	2537.843	14:14						
14:14:29	1296.673	2547.807	14:14						
14:14:39	1344.349	2553.308	14:14						
14:14:49	1567.329	2630.075	14:14						
14:14:59	1152.169	2657.503	14:14						
14:15:09	1126.692	2661.084	14:15						
14:15:19	1670.945	2718.316	14:15						
14:15:29	1867.473	2768.991	14:15						
14:15:39	1777.288	2853.177	14:15						
14:15:49	1635.012	2869.027	14:15						
14:15:59	1437.711	2939.543	14:15						
							27.9	1820	4.49
							ETH/THC	CH4/THC	AA/THC
							2.476275681	161.5348293	0.398511749

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SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
14:16:09	1695.626	2873.974	14:16		:
14:16:19	1732.815	2945.05	14:16		:
14:16:29	1859.303	2928.525	14:16		:
14:16:39	1655.74	2979.848	14:16		:
14:16:49	1705.992	2957.064	14:16		:
14:16:59	1414.386	2929.381	14:16		:
14:17:09	1307.977	2776.341	14:17		:
14:17:19	1358.091	2858.906	14:17		:
14:17:29	1212.331	2768.258	14:17		:
14:17:39	1620.418	2824.161	14:17		:
14:17:49	1151.683	2747.23	14:17		:
14:17:59	1231.596	2809.636	14:17		:
14:18:09	1603.491	2713.142	14:18		:
14:18:19	1761.273	2747.591	14:18		:
14:18:29	1804.264	2803.878	14:18		:
14:18:39	1758.036	2828.281	14:18		:
14:18:49	1722.634	2842.249	14:18		:
14:18:59	1689.873	2863.118	14:18		:
14:19:09	1688.169	2878.521	14:19		:
14:19:19	1684.528	2891.608	14:19		:
14:19:29	1673.85	2853.275	14:19		:
14:19:39	1662.644	2872.645	14:19		:
14:19:49	1656.542	2788.007	14:19		:
14:19:59	1658.204	2773.223	14:19		:
14:20:09	1646.73	2783.748	14:20		:
14:20:19	1637.906	2772.34	14:20		:
14:20:29	1645.478	2760.49	14:20		:
14:20:39	1657.369	2682.029	14:20		:
14:20:49	1693.906	2720.518	14:20		:
14:20:59	1693.327	2676.774	14:20		:
14:21:09	1678.831	2691.871	14:21		:
14:21:19	1688.526	2628.682	14:21		:
14:21:29	1676.094	2648.541	14:21		:
14:21:39	1647.907	2598.258	14:21		:
14:21:49	1860.536	2721.462	14:21		:
14:21:59	1846.513	2577.817	14:21		:
14:22:09	1801.441	2631.189	14:22		:
14:22:19	1631.626	2585.585	14:22		:
14:22:29	1109.083	2604.326	14:22		:
14:22:39	1591.393	2475.528	14:22		:
14:22:49	1719.441	2490.83	14:22		:
14:22:59	1867.806	2443.532	14:22		:
14:23:09	1615.575	2478.721	14:23		:
14:23:19	921.197	2420.298	14:23		:
14:23:29	1435.744	2405.551	14:23		:
14:23:39	885.1423	2336.683	14:23		:
14:23:49	683.8124	2329.505	14:23		:

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TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	(TABLE) (ppmC)	(RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
14:23:59	1296.768	2277.018	14:23	155	792	13.9	:	:
14:24:09	640.9214	2182.41	14:24	ETH/THC CH4/THC		AA/THC	:	:
14:24:19	268.0773	2148.409	14:24	6.807148647	34.78233373	0.610447523	:	:
14:24:29	136.7503	2056.123	14:24	:	:	:	:	:
14:24:39	76.45199	2000.201	14:24	:	:	:	:	:
14:24:49	57.72101	1868.324	14:24	:	:	:	:	:
14:24:59	53.61413	1870.384	14:24	:	:	:	:	:
14:25:09	56.50122	1800.449	14:25	:	:	:	:	:
14:25:19	57.01382	1777.462	14:25	:	:	:	:	:
14:25:29	57.1843	1736.071	14:25	:	:	:	:	:
14:25:39	59.00941	1745.201	14:25	:	:	:	:	:
14:25:49	54.95203	1663.192	14:25	:	:	:	:	:
14:25:59	56.61169	1695.803	14:25	:	:	:	:	:
14:26:09	52.91562	1593.89	14:26	:	:	:	:	:
14:26:19	52.36948	1632.48	14:26	:	:	:	:	:
14:26:29	50.74477	1539.144	14:26	:	:	:	:	:
14:26:39	49.94231	1563.249	14:26	:	:	:	:	:
14:26:49	48.42977	1457.135	14:26	:	:	:	:	:
14:26:59	47.77902	1484.382	14:26	:	:	:	:	:
14:27:09	45.94805	1385.215	14:27	:	:	:	:	:
14:27:19	48.803	1428.396	14:27	:	:	:	:	:
14:27:29	48.23603	1325.133	14:27	:	:	:	:	:
14:27:39	45.43308	1344.873	14:27	:	:	:	:	:
14:27:49	46.22961	1244.745	14:27	:	:	:	:	:
14:27:59	44.24043	1192.507	14:27	:	:	:	:	:
14:28:09	45.86509	1124.015	14:28	:	:	:	:	:
14:28:19	45.86797	1097.905	14:28	:	:	:	:	:
14:28:29	42.00399	1040.197	14:28	:	:	:	:	:
14:28:39	41.0702	1056.101	14:28	:	:	:	:	:
14:28:49	411.4174	1003.867	14:28	:	:	:	:	:
14:28:59	1221.591	1064.826	14:28	:	:	:	:	:
14:29:09	907.2621	1066.776	14:29	:	:	:	:	:
14:29:19	1479.983	1117.067	14:29	:	:	:	:	:
14:29:29	1278.888	1192.083	14:29	:	:	:	:	:
14:29:39	1515.729	1224.525	14:29	:	:	:	:	:
14:29:49	1561.536	1339.3	14:29	:	:	:	:	:
14:29:59	1724.04	1336.858	14:29	:	:	:	:	:
14:30:09	1774.608	1491.416	14:30	:	:	:	:	:
14:30:19	1893.509	1483.576	14:30	:	:	:	:	:
14:30:29	1775.443	1617.77	14:30	:	:	:	:	:
14:30:39	1858.855	1624.722	14:30	:	:	:	:	:
14:30:49	1581.127	1757.951	14:30	:	:	:	:	:
14:30:59	1315.641	1683.177	14:30	:	:	:	:	:
14:31:09	1649.199	1795.433	14:31	:	:	:	:	:
14:31:19	1617.213	1685.941	14:31	:	:	:	:	:
14:31:29	1620.98	1824.055	14:31	:	:	:	:	:
14:31:39	1425.907	1749.734	14:31	:	:	:	:	:

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TIME	THC		FRONT GC RESULTS			REAR GC RESULTS		
	(TABLE)	(RACK)	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(ppmC)	(ppmC)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	BURNER	OVEN						
14:39:09	1397.815	3001.21						
14:39:19	1095.467	2926.171						
14:39:29	1180.277	2960.895						
14:39:39	472.7209	2825.119						
14:39:49	747.628	2836.738						
14:39:59	1209.394	2685.263						
14:40:09	524.7322	2769.27						
14:40:19	227.2552	2644.329						
14:40:29	107.1099	2664.266						
14:40:39	351.1777	2505.294						
14:40:49	1029.512	2592.58						
14:40:59	455.64	2537.734						
14:41:09	338.5822	2601.757						
14:41:19	617.8488	2538.59						
14:41:29	244.1041	2514.025						
14:41:39	104.933	2506.927						
14:41:49	119.9481	2456.113						
14:41:59	992.7304	2520.661						
14:42:09	662.4587	2506.621		90	225	15.7		
14:42:19	1076.49	2566.74	ETH/THC	CH4/THC	AA/THC			
14:42:29	870.0305	2562.467	3.570492025	8.926230064	0.622852497			
14:42:39	524.7488	2600.943						
14:42:49	482.9688	2551.69						
14:42:59	269.2924	2557.204						
14:43:09	1105.487	2489.995						
14:43:19	1044.333	2603.759						
14:43:29	1379.431	2649.156						
14:43:39	870.3403	2734.243						
14:43:49	409.9669	2666.831						
14:43:59	1163.562	2691.333						
14:44:09	960.2036	2601.469						
14:44:19	1392.618	2734.297						
14:44:29	1045.736	2689.97						
14:44:39	1036.041	2773.626						
14:44:49	794.0656	2670.543						
14:44:59	743.0829	2720.015						
14:45:09	1248.958	2639.5						
14:45:19	564.7441	2721.746						
14:45:29	847.3354	2648.42						
14:45:39	1162.318	2687.058						
14:45:49	1026.784	2627.19						
14:45:59	875.9517	2723.17						
14:46:09	462.9201	2646.786						
14:46:19	843.2215	2633.541						
14:46:29	374.8447	2582.724						
14:46:39	991.9099	2575.313						

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FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)						
	(ppmC)	(ppmC)	=====			=====		
14:46:49	1012.93	2554.824	14:46	:	:	:	:	:
14:46:59	1483.023	2627.051	14:46	:	:	:	:	:
14:47:09	1014.054	2691.865	14:47	:	:	:	:	:
14:47:19	1303.635	2669.216	14:47	:	:	:	:	:
14:47:29	1299.254	2715.289	14:47	:	:	:	:	:
14:47:39	1355.504	2699.337	14:47	:	:	:	:	:
14:47:49	1162.621	2749.416	14:47	:	:	:	:	:
14:47:59	1368.01	2695.633	14:47	:	:	:	:	:
14:48:09	936.4283	2781.238	14:48	:	:	:	:	:
14:48:19	1297.515	2694.442	14:48	:	:	:	:	:
14:48:29	743.9916	2754.225	14:48	:	:	:	:	:
14:48:39	1271.237	2671.377	14:48	:	:	:	:	:
14:48:49	740.6052	2699.011	14:48	:	:	:	:	:
14:48:59	1051.878	2610.914	14:48	:	:	:	:	:
14:49:09	854.1403	2660.619	14:49	:	:	:	:	:
14:49:19	1334.647	2587.885	14:49	:	:	:	:	:
14:49:29	1010.432	2699.335	14:49	:	:	:	:	:
14:49:39	1096.402	2621.21	14:49	:	:	:	:	:
14:49:49	1356.802	2698.742	14:49	:	:	:	:	:
14:49:59	1445.398	2643.257	14:49	:	:	:	:	:
14:50:09	959.4575	2748.469	14:50	:	:	:	:	:
14:50:19	359.9673	2653.018	14:50	:	:	:	:	:
14:50:29	193.7161	2608.253	14:50	:	:	:	:	:
14:50:39	93.07494	2489.99	14:50	:	:	:	:	:
14:50:49	521.0534	2486.733	14:50	:	:	:	:	:
14:50:59	1003.289	2460.431	14:50	:	:	:	:	:
14:51:09	444.8435	2504.89	14:51	:	:	56.7	396	4.37
14:51:19	898.1332	2512.216	14:51	:	:	ETH/THC	CH4/THC	AA/THC
14:51:29	672.5809	2489.761	14:51	:	:	12.74605563	89.02007110	0.982367956
14:51:39	793.7726	2493.441	14:51	:	:	:	:	:
14:51:49	1210.988	2510.394	14:51	:	:	:	:	:
14:51:59	917.7551	2557.438	14:51	:	:	:	:	:
14:52:09	1237.969	2557.935	14:52	:	:	:	:	:
14:52:19	1087.971	2599.838	14:52	:	:	:	:	:
14:52:29	1351.145	2591.488	14:52	:	:	:	:	:
14:52:39	970.0436	2673.582	14:52	:	:	:	:	:
14:52:49	1304.635	2613.309	14:52	:	:	:	:	:
14:52:59	1099.748	2660.448	14:52	:	:	:	:	:
14:53:09	1219.906	2620.35	14:53	:	:	:	:	:
14:53:19	506.7675	2685.59	14:53	:	:	:	:	:
14:53:29	905.9568	2578.332	14:53	:	:	:	:	:
14:53:39	959.3264	2601.22	14:53	:	:	:	:	:
14:53:49	1412.036	2565.685	14:53	:	:	:	:	:
14:53:59	1095.788	2633.689	14:53	:	:	:	:	:
14:54:09	1512.417	2598.762	14:54	:	:	:	:	:
14:54:19	1621.567	2642.933	14:54	:	:	:	:	:
14:54:29	1710.006	2674.588	14:54	:	:	:	:	:

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SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
14:54:39	1869.238	2788.828			
14:54:49	1776.99	2756.298			
14:54:59	1800.019	2895.63			
14:55:09	1880.602	2913.833			
14:55:19	1448.859	2970.174			
14:55:29	807.2648	2865.05			
14:55:39	960.0319	2862.659			
14:55:49	455.6175	2695.468			
14:55:59	1135.21	2666.473			
14:56:09	740.4519	2643.989			
14:56:19	285.9524	2624.581			
14:56:29	894.8464	2581.932			
14:56:39	586.5288	2524.24			
14:56:49	218.0331	2541.916			
14:56:59	100.7277	2444.037			
14:57:09	57.32004	2419.399			
14:57:19	56.76195	2295.262			
14:57:29	51.90451	2322.794			
14:57:39	50.83144	2204.276			
14:57:49	54.73378	2278.371			
14:57:59	57.12781	2207.145			
14:58:09	767.681	2281.229			
14:58:19	575.2479	2253.412			
14:58:29	472.8911	2352.765			
14:58:39	1154.72	2326.574			
14:58:49	711.7817	2416.596			
14:58:59	1142.563	2422.073			
14:59:09	597.6493	2527.765			
14:59:19	1142.542	2440.498			
14:59:29	902.6534	2508.935			
14:59:39	1385.568	2485.844			
14:59:49	1067.443	2536.779			
14:59:59	1451.386	2560.755			
15:00:09	1622.867	2669.109			
15:00:19	1625.322	2696.404			
15:00:29	994.3307	2740.553			
15:00:39	1362.17	2739.551			
15:00:49	1593.703	2649.636			
15:00:59	1522.091	2752.023			
15:01:09	1707.275	2694.57			
15:01:19	1809.88	2761.523			
15:01:29	1916.287	2813.837			
15:01:39	1821.888	2854.182			
15:01:49	1862.049	2870.091			
15:01:59	1772.61	2895.165			
15:02:09	1707.657	2907.5			
15:02:19	1656.62	2948.235			
15:00:19			367	669	33.2
15:00:29			ETH/THC	CH4/THC	AA/THC
15:00:39			13.61072005	24.81082211	1.231269498

6/24/92 SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
12:59:59	1757.955	1126.467	12:59					
13:00:09	1725.222	1130.713	13:00					
13:00:19	1831.035	1124.831	13:00					
13:00:29	1644.31	1114.561	13:00					
13:00:39	1696.445	1139.492	13:00					
13:00:49	1687.422	1125.385	13:00					
13:00:59	1682.889	1112.655	13:00					
13:01:09	1639.147	1113.073	13:01					
13:01:19	1319.008	1057.977	13:01					
13:01:29	1665.215	1081.794	13:01					
13:01:39	1672.434	1043.024	13:01					
13:01:49	1738.989	1079.863	13:01					
13:01:59	1798.053	1056.412	13:01					
			00:00					
			00:00					
			00:00					
13:02:15	1783.206	1044.569	13:02					
13:02:19	3846.454	1132.625	13:02					
13:02:29	3878.28	2658.821	13:02					
13:02:39	3906.767	3724.805	13:02					
13:02:49	3933.4	3760.032	13:02					
13:02:59	3938.657	3824.328	13:02					
13:03:09	3941.278	3808.772	13:03					
13:03:19	3948.2	3797.902	13:03					
13:03:29	3948.923	3815.542	13:03					
13:03:39	3946.468	3779.803	13:03					
13:03:49	3945.385	3844.957	13:03					
13:03:59	3946.615	3819.318	13:03					
13:04:09	3947.254	3864.973	13:04					
13:04:19	3947.575	3854.223	13:04					
13:04:29	3946.897	3866.145	13:04					
13:04:39	3950.54	3829.23	13:04					
13:04:49	3948.848	3872.035	13:04					
13:04:59	3948.42	3832.553	13:04					
13:05:09	3949.332	3850.067	13:05					
13:05:19	3948.336	3855.675	13:05					
	3947.907	3848.917	00:00					
			00:00					
			00:00					
13:05:29	3954.399	3903.679	13:05					
13:05:39	3950.845	3866.605	13:05					
13:05:49	3789.211	3864.416	13:05					
13:06:06	2829.765	3760.548	13:06					
13:06:09	1954.966	3539.753	13:06					
13:06:19	1892.807	1925.767	13:06					
13:06:29	1796.181	1263.97	13:06					
13:06:39	1648.83	1290.238	13:06					

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SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
13:06:49	1795.576	1261.454	13:06		
13:06:59	1800.585	1229.885	13:06		
			00:00		
			00:00		
		PETERSON	00:00		
		BURNER OVEN	00:00		
13:07:09	1902.364	1216.225	13:07		
13:07:19	1914.871	1201.375	13:07		
13:07:29	1953.38	1217.972	13:07		
13:07:39	1537.968	1188.184	13:07		
13:07:49	1519.585	1204.464	13:07		
13:07:59	1549.577	1185.306	13:07		
13:08:09	927.9335	1078.274	13:08		
13:08:19	1460.072	1093.549	13:08		
13:08:29	1148.545	1019.545	13:08		
13:08:39	1310.081	990.7642	13:08		
13:08:49	1213.827	983.5568	13:08		
13:08:59	1166.215	931.1598	13:08		
13:09:09	1633.206	945.3633	13:09		
13:09:19	1711.771	925.6729	13:09		
13:09:29	1825.172	988.8062	13:09		
13:09:39	1748.901	971.5711	13:09		
13:09:49	1844.517	1042.842	13:09		
13:09:59	1804.252	1051.266	13:09		
13:10:09	1754.823	1069.757	13:10		
13:10:19	1725.131	1106.607	13:10		
13:10:29	1705.173	1102.94	13:10		
13:10:39	1706.159	1133.74	13:10		
13:10:49	1707.379	1118.378	13:10		
13:10:59	1912.024	1133.656	13:10		
13:11:09	1906.506	1149.019	13:11		
13:11:19	1836.505	1136.738	13:11		
13:11:29	1799.605	1188.657	13:11		
13:11:39	1751.717	1169.41	13:11		
13:11:49	1717.383	1200.115	13:11		
13:11:59	1707.676	1192.921	13:11		
13:12:09	1701.625	1185.181	13:12		
13:12:19	1696.836	1176.329	13:12		
13:12:29	1702.229	1137.846	13:12		
13:12:39	1697.792	1168.595	13:12		
13:12:49	1668.251	1159.604	13:12		
13:12:59	1842.299	1154.393	13:12		
13:13:09	1841.021	1144.483	13:13		
13:13:19	1820.662	1123.092	13:13		
13:13:29	1783.699	1183.569	13:13		
13:13:39	1945.104	1189.914	13:13		
13:13:49	1931.017	1216.28	13:13		

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
15:02:29	1091.996	2942.859	15:02	:	:			
15:02:39	1073.487	2893.873	15:02	:	:			
15:02:49	1294.675	2819.111	15:02	:	:			
15:02:59	958.6794	2789.991	15:02	:	:			
15:03:09	1436.449	2760.99	15:03	:	:			
15:03:19	770.1311	2747.531	15:03	:	:			
15:03:29	795.3628	2699.478	15:03	:	:			
15:03:39	1220.77	2645.747	15:03	:	:			
15:03:49	744.4381	2583.891	15:03	:	:			
15:03:59	1251.557	2594.707	15:03	:	:			
15:04:09	623.558	2574.514	15:04	:	:			
15:04:19	910.4614	2524.247	15:04	:	:			
15:04:29	555.6063	2507.031	15:04	:	:			
15:04:39	888.0118	2533.033	15:04	:	:			
15:04:49	482.7657	2495.481	15:04	:	:			
15:04:59	185.0242	2407.763	15:04	:	:			
15:05:09	680.1297	2409.444	15:05	:	:			
15:05:19	498.0376	2336.317	15:05	:	:			
15:05:29	189.1885	2400.465	15:05	:	:			
15:05:39	77.35036	2316.051	15:05	:	:			
15:05:49	53.9984	2345.615	15:05	:	:			
15:05:59	54.95208	2197.157	15:05	:	:			
15:06:09	49.84989	2255.642	15:06	:	:			
15:06:19	21.81753	2149.959	15:06	:	:			
15:06:29	117.7581	2233.959	15:06	:	:			
15:06:39	104.6557	2173.199	15:06	:	:			
15:06:49	57.6292	2233.524	15:06	:	:			
15:06:59	48.26751	2144.458	15:06	:	:			
15:07:09	128.6538	2201.464	15:07	:	:			
15:07:19	852.4261	2175.726	15:07	:	:			
15:07:29	434.0348	2235.422	15:07	:	:			
15:07:39	1088.085	2264.267	15:07	:	:			
15:07:49	738.7263	2338.132	15:07	:	:			
15:07:59	1209.642	2325.875	15:07	:	:			
15:08:09	1286.538	2354.038	15:08	:	:			
15:08:19	779.0864	2380.691	15:08	:	:			
15:08:29	1351.038	2395.845	15:08	:	:			
15:08:39	984.9138	2429.697	15:08	:	:			
15:08:49	1385.699	2419.594	15:08	:	:			
15:08:59	1568.029	2497.54	15:08	:	:			
15:09:09	1595.892	2490.526	15:09	:	:			
15:09:19	1700.542	2588.577	15:09	:	:			
15:09:29	1673.428	2580.282	15:09	:	:			
15:09:39	1635.161	2640.953	15:09	:	:			
15:09:49	1605.937	2640.274	15:09	:	:			
15:09:59	1624.39	2696.728	15:09	:	:			
15:10:09	1607.434	2676.671	15:10	:	:			

230 2010 3.62  
ETH/THC CH4/THC AA/THC  
14.06589320 122.9236754 0.221384927

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SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
15:10:19	1587.816	2723.417	15:10		:
15:10:29	1590.721	2678.473	15:10		:
15:10:39	1586.171	2746.867	15:10		:
15:10:49	1588.92	2660.67	15:10		:
15:10:59	1607.844	2766.695	15:10		:
15:11:09	1607.742	2701.126	15:11		:
15:11:19	1591.583	2724.819	15:11		:
15:11:29	1592.705	2673.452	15:11		:
15:11:39	1617.547	2735.255	15:11		:
15:11:49	1626.688	2646.463	15:11		:
15:11:59	1603.234	2716.039	15:11		:
15:12:09	1585.387	2656.244	15:12		:
15:12:19	1540.13	2700.418	15:12		:
15:12:29	1649.485	2659.631	15:12		:
15:12:39	1738.263	2657.562	15:12		:
15:12:49	1452.275	2674.592	15:12		:
15:12:59	1660.959	2681.377	15:12		:
15:13:09	1011.826	2624.99	15:13		:
15:13:19	387.4028	2572.453	15:13		:
15:13:29	164.2023	2518.049	15:13		:
15:13:39	80.35045	2285.081	15:13		:
15:13:49	57.35866	2292.697	15:13		:
15:13:59	56.39213	2153.297	15:13		:
15:14:09	54.57232	2172.753	15:14		:
15:14:19	53.34683	2037.01	15:14		:
15:14:29	50.72055	2100.041	15:14		:
15:14:39	50.29169	2024.552	15:14		:
15:14:49	47.9015	2060.467	15:14		:
15:14:59	23.47154	1989.939	15:14		:
15:15:09	48.04466	2040.355	15:15		:
15:15:19	47.18869	1978.732	15:15		:
15:15:29	43.85306	1998.255	15:15		:
15:15:39	43.32354	1978.229	15:15		:
15:15:49	69.52245	2013.719	15:15		:
15:15:59	92.10497	1984.385	15:15		:
15:16:09	56.55043	2031.292	15:16		:
15:16:19	47.56301	2008.996	15:16		:
15:16:29	46.95996	2040.288	15:16		:
15:16:39	560.6686	2004.496	15:16		:
15:16:49	780.9268	2046.995	15:16		:
15:16:59	442.0313	2084.844	15:16		:
15:17:09	981.137	2071.739	15:17		:
15:17:19	514.4988	2121.493	15:17		:
15:17:29	1029.396	2123.652	15:17		:
15:17:39	1014.377	2141.118	15:17		:
15:17:49	1481.395	2147.851	15:17		:
15:17:59	1764.578	2218.577	15:17		:

6/24/92 SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
15:18:09	1846.248	2263.91	15:18					
15:18:19	1810.219	2340.408	15:18					
15:18:29	1796.487	2325.927	15:18	430	652	28.1		
15:18:39	1600.461	2382.13	15:18	ETH/THC	CH4/THC	AA/THC		
15:18:49	1742.768	2322.081	15:18	18.48725260	28.03183418	1.208120461		
15:18:59	1707.656	2341.041	15:18					
15:19:09	1771.516	2304.944	15:19					
15:19:19	1780.211	2325.125	15:19					
15:19:29	1921.921	2280.354	15:19					
15:19:39	1870.198	2305.584	15:19					
15:19:49	1858.886	2299.227	15:19					
15:19:59	1751.399	2327.017	15:19					
15:20:09	1837.567	2291.385	15:20					
15:20:19	1840.879	2282.284	15:20					
15:20:29	1752.153	2326.474	15:20					
15:20:39	1677.283	2340.995	15:20					
15:20:49	1648.479	2392.765	15:20					
15:20:59	1642.324	2434.605	15:20					
15:21:09	1622.279	2449.861	15:21					
15:21:19	1604.229	2468.615	15:21					
15:21:29	1471.313	2548.174	15:21					
15:21:39	1047.516	2545.12	15:21					
15:21:49	1545.007	2592.526	15:21					
15:21:59	1243.134	2494.615	15:21					
15:22:09	477.5115	2533.412	15:22					
15:22:19	184.6812	2462.085	15:22					
15:22:29	123.4627	2372.243	15:22					
15:22:39	183.2126	2297.467	15:22					
15:22:49	90.29015	2293.623	15:22					
15:22:59	856.2028	2239.026	15:22					
15:23:09	525.0404	2319.439	15:23					
15:23:19	195.9672	2314.387	15:23					
15:23:29	436.366	2308.267	15:23					
15:23:39	1249.878	2281.103	15:23					
15:23:49	750.1763	2379.364	15:23					
15:23:59	909.7067	2382.207	15:23					
15:24:09	1353.487	2427.528	15:24					
15:24:19	1351.21	2454.849	15:24					
15:24:29	1397.839	2537.973	15:24					
15:24:39	1219.544	2522.333	15:24					
15:24:49	1570.854	2541.437	15:24					
15:24:59	980.5477	2538.696	15:24					
15:25:09	1306.696	2569.021	15:25					
15:25:19	1152.377	2559.947	15:25					
15:25:29	752.2679	2570.59	15:25					
15:25:39	501.8655	2492.004	15:25					
15:25:49	953.6743	2428.174	15:25					

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FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
15:25:59	1370.314	2447.414	15:25					
15:26:09	1040.649	2470.706	15:26					
AVG	966.1650	2513.551						
	END							
	BURNER	OVEN						
15:26:19	1538.706	2539.572	15:26	TRANSIENT				
15:26:29	1920.703	2530.452	15:26					
15:26:39	1883.431	2642.439	15:26					
15:26:49	1781.025	2668.799	15:26					
15:26:59	1720.152	2716.461	15:26					
15:27:09	1699.962	2750.166	15:27					
15:27:19	1691.422	2760.579	15:27					
15:27:29	1684.583	2762.425	15:27					
15:27:39	1665.059	2745.713	15:27					
15:27:49	1659.879	2712.278	15:27					
15:27:59	1651.473	2724.779	15:27					
15:28:09	1654.426	2675.686	15:28					
15:28:19	1647.19	2701.911	15:28					
15:28:29	1635.833	2642.587	15:28					
15:28:39	1647.349	2676.041	15:28					
15:28:49	1650.379	2653.388	15:28					
15:28:59	1642.535	2635.609	15:28					
15:29:09	1640.569	2597.037	15:29					
15:29:19	1642.15	2581.936	15:29					
15:29:29	1646.2	2538.643	15:29					
15:29:39	1642.393	2524.579	15:29					
15:29:49	1647.052	2479.666	15:29					
15:29:59	1636.969	2434.803	15:29					
15:30:09	1635.469	2439.718	15:30					
15:30:19	1644.308	2420.595	15:30					
15:30:29	1649.564	2353.87	15:30					
15:30:39	1659.086	2324.582	15:30					
15:30:49	1670.98	2308.222	15:30					
15:30:59	1665.689	2280.156	15:30					
15:31:09	1654.011	2298.44	15:31					
15:31:19	1659.513	2290.304	15:31					
15:31:29	1661.581	2337.504	15:31					
15:31:39	1658.571	2277.553	15:31					
15:31:49	1657.809	2328.066	15:31					
15:31:59	1659.686	2279.681	15:31					
15:32:09	1676.38	2318.553	15:32					
15:32:19	1665.707	2281.924	15:32					
15:32:29	1664.04	2303.677	15:32					
15:32:39	1654.903	2252.279	15:32					
15:32:49	1654.566	2292.452	15:32					
15:32:59	1682.613	2288.598	15:32					

196	2020	4.66
ETH/THC	CH4/THC	AA/THC
11.63492686	119.9109809	0.276626322

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6/24/92 SITE 3 DAY 2

TIME	FRONT GC RESULTS			REAR GC RESULTS				
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
15:33:09	1662.335	2286.515	15:33					
15:33:19	1644.14	2253.469	15:33					
15:33:29	1654.115	2260.368	15:33					
15:33:39	1661.428	2214.53	15:33					
15:33:49	1669.014	2200.561	15:33					
15:33:59	1671.995	2181.418	15:33					
15:34:09	1688.597	2169.114	15:34					
15:34:19	1664.371	2143.325	15:34					
15:34:33	1650.756	2131.899	15:34					
15:34:40	1650.756	2131.899	15:34					
15:35:04	1656.126	2041.994	15:35					
15:35:04	1656.126	2041.994	15:35					
15:35:09	1657.32	1980.962	15:35					
15:35:19	1660.475	1936.568	15:35					
15:35:29	1655.464	1896.883	15:35					
15:35:39	1661.644	1836.878	15:35					
15:35:49	1693.627	1786.589	15:35					
15:35:59	1688.293	1764.388	15:35					
15:36:09	1680.264	1661.221	15:36					
15:36:19	1693.039	1583.618	15:36	221	1759.057153	11.3		
15:36:29	1691.801	1547.463	15:36	ETH/THC	CH4/THC	AA/THC		
15:36:39	1684.972	1504.308	15:36	13.95538570	111.0783758	0.713555920		
15:36:49	1672.653	1460.789	15:36					
15:36:59	1670.266	1419.162	15:36					
15:37:09	1681.909	1371.512	15:37					
15:37:19	1684.178	1332.073	15:37					
15:37:29	1666.264	1296.124	15:37					
15:37:39	1673.163	1306.204	15:37					
15:37:49	1674.006	1304.237	15:37					
15:37:59	1666.063	1245.995	15:37					
15:38:09	1684.827	1172.128	15:38					
15:38:19	1693.691	1209.318	15:38					
15:38:29	1688.922	1146.361	15:38					
15:38:39	1689.955	1192.262	15:38					
15:38:49	1688.272	1134.161	15:38					
15:38:59	1685.916	1161.374	15:38					
15:39:09	1683.107	1134.686	15:39					
15:39:19	1685.097	1165.412	15:39					
15:39:29	1678.307	1134.815	15:39					
15:39:39	1666.242	1137.283	15:39					
15:39:49	1659.676	1150.759	15:39					
15:39:59	1663.933	1149.949	15:39					
15:40:09	1669.111	1162.43	15:40					
15:40:19	1673.064	1122.269	15:40					
15:40:29	1657.674	1156.987	15:40					
15:40:39	1672.588	1108.78	15:40					
15:40:49	1667.027	1166.798	15:40					



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6/24/92 SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE (ppmV/wet)
15:50:39	1659.437	1438.15			
15:50:49	1462.404	1448.484			
15:50:59	1684.982	1582.902			
15:51:09	1866.071	1561.452			
15:51:19	1863.56	1693.141			
15:51:29	1482.498	1666.276			
15:51:39	1569.169	1788.086			
15:51:49	1636.847	1723.807			
15:51:59	1367.279	1788.997			
15:52:09	1627.783	1773.754			
15:52:19	1008.598	1818.465			
15:52:29	414.1303	1768.653			
15:52:39	772.3398	1756.289			
15:52:49	370.1842	1659.624			
15:52:59	952.5928	1673.772			
15:53:09	990.4911	1696.249			
15:53:19	683.949	1678.626			
15:53:29	615.6423	1768.924			
15:53:39	235.2108	1730.192			
15:53:49	463.258	1766.009			
15:53:59	755.7516	1795.434			
15:54:09	289.2674	1828.244			
15:54:19	116.492	1865.339			
15:54:29	58.47324	1983.269			
15:54:39	57.01763	1904.127			
15:54:49	335.5584	1910.716			
15:54:59	459.6364	1912.453			
15:55:09	175.9027	1987.637			
15:55:19	68.52431	1964.832			
15:55:29	56.44255	2045.453			
15:55:39	69.04889	1987.533			
15:55:49	988.7802	2083.55			
15:55:59	773.7518	2148.652			
15:56:09	281.6153	2220.677			
15:56:19	110.445	2203.032			
15:56:29	57.7307	2183.501			
15:56:39	59.72683	2089.15			
15:56:49	728.6759	2148.167			
15:56:59	368.9962	2136.375			
15:57:09	526.5871	2190.23			
15:57:19	428.4231	2146.725			
15:57:29	163.1373	2230.169			
15:57:39	67.02182	2136.308			
15:57:49	59.26443	2183.93			
15:57:59	27.06141	2087.457			
15:58:09	24.19672	2160.496			
15:58:19	21.98412	2088.44			

FRONT GC RESULTS

ETH-OH CH4 ACETALDEHYDE:

(ppmV/wet) (ppmV/wet) (ppmV/wet) :

=====

REAR GC RESULTS

ETH-OH CH4 ACETALDEHYDE

(ppmV/wet) (ppmV/wet) (ppmV/wet)

=====

205 406 22.5 :

ETH/THC CH4/THC AA/THC :

10.76608860 21.32210719 1.181643871 :



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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
16:05:49	1165.651	2720.304	16:05					
16:05:59	1236.276	2774.11	16:05					
16:06:09	1126.797	2708.662	16:06					
16:06:19	1437.576	2761.479	16:06					
16:06:29	1404.879	2726.287	16:06					
16:06:39	1344.689	2785.666	16:06					
16:06:49	527.8174	2717.671	16:06					
16:06:59	326.4559	2724.278	16:06					
16:07:09	174.7251	2549.029	16:07					
16:07:19	85.81895	2558.346	16:07					
16:07:29	644.4324	2455.151	16:07					
16:07:39	310.4408	2479.359	16:07					
16:07:49	362.7983	2387.724	16:07					
16:07:59	888.0663	2471.849	16:07					
16:08:09	363.1202	2405.975	16:08					
16:08:19	818.5704	2466.694	16:08					
16:08:29	1033.254	2433.418	16:08					
16:08:39	662.9802	2498.109	16:08					
16:08:49	1207.966	2483.082	16:08					
16:08:59	564.7769	2537.41	16:08					
16:09:09	650.8273	2491.406	16:09					
16:09:19	978.77	2544.394	16:09					
16:09:29	1482.568	2497.749	16:09					
16:09:39	1609.188	2616.143	16:09					
16:09:49	1771.597	2648.624	16:09					
16:09:59	1753.258	2744.536	16:09					
16:10:09	1893.586	2794.213	16:10					
16:10:19	1317.335	2838.604	16:10					
16:10:29	1478.404	2805.659	16:10					
16:10:39	1200.549	2826	16:10					
16:10:49	850.4691	2753.566	16:10					
16:10:59	1300.435	2781.648	16:10					
16:11:09	581.8418	2678.543	16:11					
16:11:19	416.4502	2655.102	16:11					
16:11:29	1056.848	2617.657	16:11					
16:11:39	696.117	2575.624	16:11					
16:11:49	1370.372	2605.418	16:11					
16:11:59	1499.676	2628.705	16:11					
16:12:09	1535.165	2666.356	16:12					
16:12:19	1697.592	2731.928	16:12					
16:12:29	1582.622	2761.035	16:12					
16:12:39	1315.356	2818.975	16:12					
16:12:49	1200.773	2796.398	16:12					
16:12:59	876.4129	2759.958	16:12					
16:13:09	360.5223	2791.341	16:13	225	820	28.7		
16:13:19	969.839	2606.279	16:13	ETH/THC	CH4/THC	AA/THC		
16:13:29	554.7928	2630.528	16:13	8.060641820	29.37656130	1.028179645		

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SITE 3 DAY 2

TIME	FRONT GC RESULTS		REAR GC RESULTS		
	THC 1 (TABLE) (ppmC)	THC 2 (RACK) (ppmC)	ETH-OH (ppmV/wet)	CH4 (ppmV/wet)	ACETALDEHYDE: (ppmV/wet)
16:13:39	228.1904	2556.292			
16:13:49	112.6949	2506.989			
16:13:59	87.03051	2405.916			
16:14:09	982.083	2415.665			
16:14:19	807.7131	2419.847			
16:14:29	844.9686	2514.981			
16:14:39	1215.807	2493.025			
16:14:49	783.1917	2556.758			
16:14:59	1121.393	2497.888			
16:15:09	480.7946	2572.325			
16:15:19	952.1857	2495.891			
16:15:29	932.0285	2552.943			
16:15:39	915.235	2504.515			
16:15:49	1043.103	2596.231			
16:15:59	409.0615	2494.813			
16:16:09	847.1541	2517.896			
16:16:19	674.4083	2423.071			
16:16:29	468.813	2498.035			
16:16:39	1198.735	2454.135			
16:16:49	914.5421	2519.311			
16:16:59	1423.543	2526.291			
16:17:09	979.9248	2625.338			
16:17:19	1383.908	2571.339			
16:17:29	967.2325	2630.309			
16:17:39	1179.18	2576.325			
16:17:49	874.0168	2629.865			
16:17:59	1091.802	2564.909			
16:18:09	825.064	2620.913			
16:18:19	1153.222	2580.377			
16:18:29	640.9987	2625.496			
16:18:39	1305.136	2573.16			
16:18:49	1227.436	2627.615			
16:18:59	1433.982	2647.126			
16:19:09	834.528	2648.778			
16:19:19	1248.743	2647.04			
16:19:29	744.8141	2635.852			
16:19:39	882.9671	2572.386			
16:19:49	769.7487	2610.924			
16:19:59	1415.886	2592.899			
16:20:09	1242.536	2660.773			
16:20:19	1472.927	2637.763			
16:20:29	1295.498	2684.508			
16:20:39	1512.658	2707.486			
16:20:49	1401.229	2734.5			
16:20:59	1401.853	2723.732			
16:21:09	1170.31	2753.557			
16:21:19	1339.683	2727.23			

6/24/92 SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)						
	(ppmC)	(ppmC)	=====			=====		
16:21:29	1257.562	2738.485	16:21					
16:21:39	504.8122	2740.893	16:21					
16:21:49	986.6712	2754.352	16:21					
16:21:59	1322.011	2683.588	16:21					
16:22:09	1253.884	2663.227	16:22					
16:22:19	662.4962	2658.341	16:22					
16:22:29	1168.16	2589.75	16:22					
16:22:39	772.1135	2620.276	16:22					
16:22:49	1372.404	2611.06	16:22					
16:22:59	923.0771	2645.333	16:22					
16:23:09	407.878	2599.182	16:23					
16:23:19	1111.574	2609.015	16:23					
16:23:29	871.4442	2555.922	16:23					
16:23:39	1142.647	2610.144	16:23					
16:23:49	597.188	2535.563	16:23					
16:23:59	557.7912	2530.512	16:23					
16:24:09	887.3153	2478.956	16:24					
16:24:19	953.7714	2554.913	16:24					
16:24:29	880.7128	2496.88	16:24					
16:24:39	564.9163	2551.116	16:24					
16:24:49	1328.112	2496.4	16:24					
16:24:59	1141.538	2561.772	16:24					
16:25:09	1276.936	2582.682	16:25					
16:25:19	869.1942	2618.717	16:25					
16:25:29	1355.266	2591.855	16:25					
16:25:39	663.3734	2606.612	16:25					
16:25:49	879.624	2525.161	16:25					
16:25:59	1192.5	2616.168	16:25					
16:26:09	496.4879	2528.291	16:26					
16:26:19	895.6036	2577.734	16:26					
16:26:29	1029.515	2516.84	16:26					
16:26:39	1110.228	2579.644	16:26					
16:26:49	1281.794	2539.331	16:26					
16:26:59	628.8969	2600.535	16:26					
16:27:09	1263.673	2517.016	16:27					
16:27:19	853.2387	2570.807	16:27					
16:27:29	1210.846	2539.765	16:27					
16:27:39	825.3907	2609.878	16:27					
16:27:49	1195.527	2513.758	16:27					
16:27:59	767.2896	2565.555	16:27					
16:28:09	1205.14	2512.294	16:28					
16:28:19	943.3608	2589.887	16:28					
16:28:29	1331.47	2520.189	16:28					
16:28:39	796.9891	2598.604	16:28					
16:28:49	1392.978	2538.752	16:28					
16:28:59	949.6764	2585.167	16:28					
16:29:09	666.7739	2560.035	16:29					

447 804 32.2  
 ETH/THC CH4/THC AA/THC  
 33.81212410 60.81643798 2.435683212

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
16:29:19	935.0691	2547.72	16:29					
16:29:29	760.8048	2488.451	16:29					
16:29:39	983.6935	2545.587	16:29					
16:29:49	1163.106	2509.081	16:29					
16:29:59	996.2317	2536.207	16:29					
16:30:09	1414.949	2528.424	16:30					
16:30:19	802.579	2553.771	16:30					
16:30:29	1154.791	2528.574	16:30					
16:30:39	1412.427	2572.769	16:30					
16:30:49	1557.743	2591.314	16:30					
16:30:59	1664.29	2660.788	16:30					
16:31:09	1878.149	2687.863	16:31					
16:31:19	1825.25	2788.35	16:31					
16:31:29	1603.284	2813.755	16:31					
16:31:39	1418.402	2848.275	16:31					
16:31:49	1237.444	2853.99	16:31					
16:31:59	1278.893	2767.092	16:31					
16:32:09	515.8178	2790.712	16:32					
16:32:19	780.527	2701.74	16:32	884	761	31.7		
16:32:29	1040.055	2648.854	16:32	ETH/THC	CH4/THC	AA/THC		
16:32:39	414.3207	2580.372	16:32	32.71965474	28.16703309	1.173317935		
16:32:49	765.3408	2567.544	16:32					
16:32:59	812.8286	2490.467	16:32					
16:33:09	304.1354	2497.361	16:33					
16:33:19	126.5053	2406.722	16:33					
16:33:29	60.88139	2377.617	16:33					
16:33:39	57.60432	2284.126	16:33					
16:33:49	288.051	2282.152	16:33					
16:33:59	1084.441	2289.456	16:33					
16:34:09	556.2141	2375.398	16:34					
16:34:19	785.0675	2335.456	16:34					
16:34:29	1394.574	2440.378	16:34					
16:34:39	935.5119	2457.935	16:34					
16:34:49	1069.1	2521.005	16:34					
16:34:59	746.6556	2429.347	16:34					
16:35:09	684.6931	2476.073	16:35					
16:35:19	809.9982	2395.527	16:35					
16:35:29	539.0516	2448.521	16:35					
16:35:39	1238.028	2406.501	16:35					
16:35:49	1149.69	2487.286	16:35					
16:35:59	1137.865	2493.083	16:35					
16:36:09	749.7997	2535.521	16:36					
16:36:19	1298.667	2487.04	16:36					
16:36:29	698.9038	2531.296	16:36					
16:36:39	1209.158	2449.131	16:36					
16:36:49	1549.779	2555.521	16:36					
16:36:59	1726.562	2555.657	16:36					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
16:37:09	1379.957	2675.433	16:37	:	:	:	:	:
16:37:19	1519.975	2633.987	16:37	:	:	:	:	:
16:37:29	967.7433	2689.727	16:37	:	:	:	:	:
16:37:39	1481.086	2636.56	16:37	:	:	:	:	:
16:37:49	1386.513	2685.155	16:37	:	:	:	:	:
16:37:59	1644.095	2680.87	16:37	:	:	:	:	:
16:38:09	1259.229	2731.851	16:38	:	:	:	:	:
16:38:19	1528.634	2706.412	16:38	:	:	:	:	:
16:38:29	1251.625	2711.05	16:38	:	:	:	:	:
16:38:39	1302.29	2666.965	16:38	:	:	:	:	:
16:38:49	708.6712	2712.089	16:38	:	:	:	:	:
16:38:59	1085.123	2631.013	16:38	:	:	:	:	:
16:39:09	1003.215	2643.35	16:39	:	:	:	:	:
16:39:19	704.339	2590.291	16:39	:	:	:	:	:
16:39:29	814.0113	2589.27	16:39	:	:	:	:	:
16:39:39	330.2654	2524.127	16:39	:	:	:	:	:
16:39:49	969.9879	2479.289	16:39	:	:	:	:	:
16:39:59	829.7015	2494.762	16:39	:	:	:	:	:
16:40:09	339.0353	2493.869	16:40	:	:	:	:	:
16:40:19	1006.443	2501.049	16:40	:	:	:	:	:
16:40:29	654.3738	2480.768	16:40	:	:	:	:	:
16:40:39	831.5771	2432.658	16:40	:	:	:	:	:
16:40:49	675.8873	2448.281	16:40	:	:	:	:	:
16:40:59	525.8271	2429.164	16:40	:	:	:	:	:
16:41:09	885.8234	2430.806	16:41	:	:	:	:	:
16:41:19	522.8955	2404.603	16:41	:	:	:	:	:
16:41:29	1202.487	2401.729	16:41	:	:	:	:	:
16:41:39	861.8698	2480.038	16:41	:	:	:	:	:
16:41:49	1248.205	2496.771	16:41	:	:	:	:	:
16:41:59	685.8996	2508.783	16:41	:	:	:	:	:
16:42:09	965.7676	2472.231	16:42	:	:	:	:	:
16:42:19	875.4924	2478.82	16:42	:	:	:	:	:
16:42:29	1314.35	2475.114	16:42	:	:	:	:	:
16:42:39	1293.796	2535.546	16:42	:	:	:	:	:
16:42:49	1466.134	2546.17	16:42	:	:	:	:	:
16:42:59	1242.7	2609.325	16:42	:	:	:	:	:
16:43:09	1465.945	2589.955	16:43	:	:	:	:	:
16:43:19	1158.422	2609.866	16:43	:	:	:	:	:
16:43:29	1513.969	2564.219	16:43	:	:	:	:	:
16:43:39	1595.789	2662.301	16:43	:	:	:	:	:
16:43:49	1493.171	2588.15	16:43	:	:	:	:	:
16:43:59	1100.052	2635.357	16:43	:	:	:	:	:
16:44:09	1518.25	2592.083	16:44	:	:	:	:	:
16:44:19	1473.654	2686.933	16:44	:	:	:	:	:
16:44:29	1670.711	2711.341	16:44	:	:	:	:	:
16:44:39	1353.397	2736.329	16:44	:	:	:	:	:
16:44:49	557.0519	2624.085	16:44	:	:	:	:	:

	187	881	4.9
	ETH/THC	CH4/THC	AA/THC
	15.55110367	73.26482531	0.407488812

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
16:44:59	1034.906	2679.269	16:44					
16:45:09	672.7228	2564.086	16:45					
16:45:19	533.9609	2579.597	16:45					
16:45:29	1076.217	2520.144	16:45					
16:45:39	467.0985	2564.68	16:45					
16:45:49	179.6014	2426.767	16:45					
16:45:59	73.98489	2419.043	16:45					
16:46:09	57.46917	2287.146	16:46					
16:46:19	55.95911	2322.826	16:46					
16:46:29	33.45567	2215.612	16:46					
16:46:39	362.8363	2260.36	16:46					
16:46:49	638.291	2276.45	16:46					
16:46:59	284.3658	2322.04	16:46					
16:47:09	794.2079	2258.003	16:47					
16:47:19	623.1472	2326.125	16:47					
16:47:29	1078.158	2299.04	16:47					
16:47:39	689.568	2402.628	16:47					
16:47:49	1317.857	2381.198	16:47					
16:47:59	922.7065	2431.373	16:47					
16:48:09	1377.152	2479.176	16:48					
16:48:19	1281.457	2518.84	16:48					
16:48:29	1460.481	2523.337	16:48					
16:48:39	1627.691	2569.96	16:48					
16:48:49	1562.031	2608.17	16:48					
16:48:59	1709.274	2675.963	16:48					
16:49:09	1690.165	2698.468	16:49					
16:49:19	1134.642	2750.598	16:49					
16:49:29	1363.394	2687.358	16:49					
16:49:39	1728.839	2765.666	16:49					
16:49:49	1881.008	2739.786	16:49					
16:49:59	1838.75	2833.069	16:49					
16:50:09	1689.483	2821.28	16:50	354	836	27.3		
16:50:19	1801.439	2813.461	16:50	ETH/THC	CH4/THC	AA/THC		
16:50:29	1234.011	2793.621	16:50	12.54749617	29.63194011	0.967645891		
16:50:39	1394.941	2778.612	16:50					
16:50:49	849.5674	2738.079	16:50					
16:50:59	320.0435	2620.305	16:50					
16:51:09	133.0449	2570.83	16:51					
16:51:19	63.42203	2424.626	16:51					
16:51:29	662.1304	2419.263	16:51					
16:51:39	1136.801	2400.679	16:51					
16:51:49	1076.234	2443.705	16:51					
16:51:59	1264.762	2463.955	16:51					
16:52:09	678.2265	2489.164	16:52					
16:52:19	1069.748	2458.886	16:52					
16:52:29	840.3589	2482.612	16:52					
16:52:39	680.8389	2468.998	16:52					

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SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
16:52:49	255.7019	2465.401	16:52	:	:			
16:52:59	741.0661	2383.129	16:52	:	:			
16:53:09	666.4865	2415.13	16:53	:	:			
16:53:19	251.4219	2359.518	16:53	:	:			
16:53:29	614.5895	2377.726	16:53	:	:			
16:53:39	387.5101	2291.153	16:53	:	:			
16:53:49	523.2165	2348.387	16:53	:	:			
16:53:59	805.2615	2328.542	16:53	:	:			
16:54:09	329.8871	2359.2	16:54	:	:			
16:54:19	997.0629	2273.749	16:54	:	:			
16:54:29	942.2448	2407.527	16:54	:	:			
16:54:39	937.9205	2356.889	16:54	:	:			
16:54:49	952.785	2480.782	16:54	:	:			
16:54:59	817.7203	2395.559	16:54	:	:			
16:55:09	1433.398	2474.388	16:55	:	:			
16:55:19	1482.83	2474.809	16:55	:	:			
16:55:29	1710.208	2607.865	16:55	:	:			
16:55:39	1763.702	2612.774	16:55	:	:			
16:55:49	1806.464	2704.51	16:55	:	:			
16:55:59	1641.687	2653.916	16:55	:	:			
16:56:09	1440.022	2742.7	16:56	:	:			
16:56:19	1686.056	2702.554	16:56	:	:			
16:56:29	1440.982	2758.461	16:56	:	:			
16:56:39	1677.055	2718.592	16:56	:	:			
16:56:49	1327.528	2743.915	16:56	:	:			
16:56:59	1475.106	2712.17	16:56	:	:			
16:57:09	1248.087	2713.204	16:57	:	:			
16:57:19	1478.32	2660.818	16:57	:	:			
16:57:29	968.1877	2714.444	16:57	:	:			
16:57:39	686.5403	2629.397	16:57	:	:			
16:57:49	793.1287	2606.157	16:57	:	:			
16:57:59	1202.413	2556.886	16:57	:	:			
16:58:09	1557.443	2589.194	16:58	:	:			
16:58:19	1687.002	2625.322	16:58	:	:			
16:58:29	1771.497	2671.858	16:58	:	:			
16:58:39	1585.142	2706.881	16:58	:	:			
16:58:49	1733.181	2730.357	16:58	:	:			
16:58:59	964.7477	2724.874	16:58	:	:			
16:59:09	937.998	2684.948	16:59	:	:			
16:59:19	384.0043	2598.623	16:59	:	:			
16:59:29	156.9439	2479.45	16:59	:	:			
16:59:39	74.68469	2423.618	16:59	:	:			
16:59:49	55.34918	2336.491	16:59	:	:			
16:59:59	720.2853	2338.647	16:59	:	:			
17:00:09	421.818	2311.213	17:00	:	:			
17:00:19	658.3578	2321.939	17:00	:	:			
17:00:29	1345.054	2329.177	17:00	:	:			

54.3                    834                    5.94  
 ETH/THC CH4/THC                    AA/THC  
 5.628414558 86.44747222 0.615705018

6/24/92

SITE 3 DAY 2

FRONT GC RESULTS

REAR GC RESULTS

TIME	THC 1	THC 2	ETH-OH	CH4	ACETALDEHYDE:	ETH-OH	CH4	ACETALDEHYDE:
	(TABLE)	(RACK)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)	(ppmV/wet)
	(ppmC)	(ppmC)	=====			=====		
17:00:39	1458.221	2450.598	17:00					
17:00:49	794.8625	2482.409	17:00					
17:00:59	1271.93	2517.208	17:00					
17:01:09	1035.916	2475.638	17:01					
17:01:19	1087.487	2490.031	17:01					
17:01:29	1306.269	2497.511	17:01					
17:01:39	1279.918	2530.109	17:01					
17:01:49	1581.145	2524.711	17:01					
17:01:59	978.0165	2573.852	17:01					
17:02:09	1327.79	2535.413	17:02					
17:02:19	1424.389	2597.238	17:02					
17:02:29	1280.696	2571.775	17:02					
17:02:39	495.6677	2575.654	17:02					
17:02:49	694.2116	2413.19	17:02					
17:02:59	1324.348	2509.203	17:02					
17:03:09	1629.45	2501.568	17:03					
17:03:19	1294.301	2587.646	17:03					
17:03:29	1550.431	2595.669	17:03					
17:03:39	1012.143	2632.832	17:03					
17:03:49	1026.899	2540.181	17:03					
17:03:59	1338.489	2601.937	17:03					
17:04:09	589.2244	2503.543	17:04					
17:04:19	225.6684	2529.891	17:04					
17:04:29	96.36562	2360.548	17:04					
17:04:39	860.3685	2338.092	17:04					
17:04:49	815.526	2275.902	17:04					
17:04:59	402.9541	2325.265	17:04					
17:05:09	1054.771	2299.82	17:05					
17:05:19	819.8063	2367.571	17:05					
17:05:29	1172.794	2350.397	17:05					
17:05:39	498.3436	2410.871	17:05					
17:05:49	185.4047	2337.788	17:05					
17:05:59	76.82626	2332.352	17:05					
17:06:09	677.2415	2244.836	17:06					
17:06:19	598.8257	2325.625	17:06					
17:06:29	220.8769	2243.443	17:06					
17:06:39	406.4768	2279.92	17:06					
17:06:49	828.7261	2243.135	17:06					
17:06:59	522.2625	2272.836	17:06					
17:07:09	1043.771	2325.485	17:07					
17:07:19	494.8374	2344.67	17:07					
17:07:29	1107.634	2330.15	17:07					
17:07:39	1488.651	2402.06	17:07					
17:07:49	1600.941	2437.338	17:07					
17:07:59	1858.63	2601.746	17:07					
17:08:09	1786.866	2601.435	17:08					
AVG	1002.119	2552.050						

CALIBRATION SUMMARY  
 06-24-1992 09:58:16  
 CALIBRATION FILE NAME = C:\CEM\DATA\0624a.CAL

Chan.	Name	Units	Zero		Span		Slope	Int.
			Conc.	Resp.	Conc.	Resp.		
1	THC1	PPM	0.00	0.0022	1490.00	1.491	1001.046	-0.28
2	O2	%	0.00	0.0004	20.90	0.005	247.388	-0.11
3	THC2	PPM	0.00	-0.0011	3980.00	3.772	1054.514	1.18
4		PPM	0.00	0.0099	1490.00	1.523	984.507	-9.74

Press Shift-FrtSc to Print Out table  
 Press <C> to Continue

RADIANT CORPORATION zero gas up the line

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES

JPA  
 Performed for:  
 Date Printed = 06-24-1992 Current Time = 09:59:37  
 File Name = C:\CEM\DATA\062492.PRN Calibration File: C:\CEM\DATA\0624a.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM
09:59:39	161.4	-0.2	-4257.7	1475.6
09:59:49	19.8	-0.0	-3992.9	535.2
09:59:59	5.7	-0.5	-3683.7	22.3
09:00:00	0.0	0.0	-3707.0	0.0

10:00:29	1.3	-0.4	-3677.2	-0.7
10:00:39	1.1	-0.4	-3724.5	0.0
10:00:49	0.9	-0.3	-3659.6	-1.2
10:00:59	1.7	-0.4	-3711.9	-1.3

=====  
 Avg. =            21.8    -0.3   -3790.3   228.8  
 =====

ADIAN CORPORATION 80.2 ppm OI UP THE LINE

Field Testing and Process Engineering Dept.

Continuous Emissions Monitoring Data

BAKERIES

,FA

Performed for:

Date Printed = 06-24-1992 Current Time = 10:02:06

File Name = C:\CEMDATA\062492.PRN Calibration File:C:\CEMDATA\0624a.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

10:02:07	49.0	-0.2	-3811.5	1591.7
10:02:09	75.4	1.5	-3918.7	2153.3
10:02:19	75.2	3.5	-2748.6	1610.7
10:02:29	73.4	0.5	-4799.7	179.2
10:02:39	77.1	12.0	-4376.4	76.6
10:02:49	78.3	12.2	-4096.7	81.2
10:02:59	77.4	14.1	-3989.7	75.0
10:03:09	78.0	17.1	-3919.1	73.4
10:03:19	77.0	18.3	-3950.8	71.9
10:03:29	78.1	18.7	-3898.2	69.2
10:03:39	78.2	18.9	-3965.9	70.7
10:03:49	78.6	19.1	-3884.2	67.5
10:03:59	75.0	19.3	-3772.3	68.8
10:04:09	78.2	19.3	-3919.5	69.4
10:04:19	79.4	19.2	-3994.2	69.3
10:04:29	76.9	19.3	-3869.5	68.2
10:04:39	77.8	19.3	-3895.5	68.4
10:04:49	78.1	19.3	-3920.8	67.5
10:04:59	79.6	19.2	-3901.5	67.2
10:05:09	76.9	19.3	-3922.2	67.2
10:05:19	76.3	19.4	-3832.4	64.5
10:05:29	76.6	19.4	-3912.8	67.3
10:05:39	78.2	19.4	-3939.3	67.0
10:05:49	78.9	19.3	-3901.9	67.0
10:05:59	76.9	19.4	-3871.9	67.3
10:06:09	77.2	19.3	-3902.6	68.3
10:06:19	78.8	19.3	-3900.4	68.3
10:06:29	76.8	19.5	-3741.7	66.2
10:06:39	77.6	19.4	-3893.7	66.4
10:06:49	78.5	19.5	-3896.6	65.4

=====  
Avg.= ~~74.5~~ 16.4 -3911.6 ~~74.1~~  
=====

77.7 68.1

RADIAN CORPORATION 199.1 D1 UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data

BAKERIES  
PA

Performed for:

Date Printed = 06-24-1992 Current Time = 10:07:53

File Name = C:\CEMDATA\062492.PRN Calibration File=C:\CEMDATA\0624a.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

10:07:54	235.6	19.6	-4271.7	940.1
10:07:59	202.7	19.4	-5265.6	218.0
10:08:09	200.1	19.4	-4979.1	203.7
10:08:19	199.1	18.9	-5137.5	191.7
10:08:29	199.0	18.9	-5090.0	187.4
10:08:39	198.0	19.3	-5041.8	184.9
10:08:49	197.6	19.5	-5110.7	181.4
10:08:59	198.0	19.5	-4980.5	183.2
10:09:09	197.5	19.5	-5101.0	184.2
10:09:19	196.6	19.5	-5080.3	183.1
10:09:29	197.9	19.5	-5254.7	182.9
10:09:39	197.6	19.5	-5147.7	183.2
10:09:49	197.1	19.5	-5139.9	182.6
10:09:59	198.5	19.5	-5047.8	180.9
10:10:09	197.5	19.5	-5163.4	182.5
10:10:19	197.5	19.5	-5154.0	183.3
10:10:29	198.5	19.5	-5091.2	182.4
10:10:39	198.4	19.5	-5094.6	183.5
10:10:49	197.7	19.6	-5110.0	182.9
10:10:59	198.3	19.6	-5094.0	182.0
10:11:09	198.7	19.5	-5095.2	182.2
10:11:19	197.9	19.6	-4984.4	182.1
10:11:29	198.3	19.6	-5055.2	181.1
10:11:39	197.8	19.6	-5016.9	180.4
10:11:49	197.6	19.6	-5130.2	182.5
10:11:59	196.7	19.7	-5049.7	182.3
10:12:09	197.1	19.6	-5137.5	185.1
10:12:19	197.5	19.6	-5140.2	182.7
10:12:29	198.2	19.6	-5071.6	180.6
10:12:39	199.2	19.5	-5107.9	181.8
10:12:49	197.8	19.6	-5033.1	183.8
10:12:59	199.7	19.6	-4984.5	181.1
10:13:09	198.7	19.6	-4988.1	182.5
10:13:19	198.0	19.7	-5052.9	183.2
10:13:29	198.2	19.6	-5049.4	183.1
10:13:39	197.2	19.7	-5091.2	182.8
10:13:49	196.8	19.6	-4921.9	183.8
10:13:59	197.1	19.6	-5063.4	182.4
10:14:09	197.1	19.7	-4939.5	182.1
10:14:19	200.0	19.7	-5041.6	182.4
10:14:29	197.2	19.7	-5067.1	184.3
10:14:39	196.9	19.7	-4991.6	183.7

T = 198.0  
R = 183.0

=====  
Avg. = 197.0 19.5 -5357.1 202.4  
=====

ADIAN CORPORATION 2  
EQ. 1 01 UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data

4SERIES

PA

performed for:

ate Printed = 06-24-1992 Current Time = 12:21:42

File Name = D:\CEM\DATA\062492.PRW Calibration File: C:\CEM\DATA\062492.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

2:21:49	641.4	16.5	-2918.2	1229.8
2:21:49	641.4	16.5	-2918.2	1229.8
2:21:59	95.8	17.4	-4952.3	159.3
2:22:09	86.4	17.5	-4952.6	119.7
2:22:19	80.8	17.5	-4293.9	105.5
2:22:29	77.8	16.8	-4247.7	99.2
2:22:39	75.6	18.5	-3199.2	83.4
2:22:49	75.2	18.5	-3381.7	85.8
2:22:59	75.3	18.8	-2913.7	86.4
2:23:09	75.1	18.8	-4659.8	87.8
2:23:19	75.5	18.8	-4678.7	85.9
2:23:29	71.8	19.2	-4248.1	83.1
2:23:39	75.7	18.8	-4128.4	83.9
2:23:49	74.8	18.8	-4087.5	80.8
2:23:59	74.7	18.8	-4094.2	81.3
2:24:09	76.1	19.8	-4042.9	77.8
2:24:19	75.5	18.9	-3682.2	88.4
2:24:29	592.9	18.8	-3918.4	83.8
2:24:39	389.1	18.7	-4332.5	135.2
2:24:49	86.8	18.9	-4448.5	291.1
2:24:59	78.8	18.9	-4182.8	91.5
2:25:09	73.7	19.8	-4018.8	77.8
2:25:19	77.7	18.8	-3688.7	77.4
2:25:29	75.8	18.9	-3918.4	76.4

Avg. = 75.5 18.4 -3968.8 196.8

75.3 82.5

ADIAN CORPORATION 199.1 DI OF THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data

WAKERIES

FA

performed for:

Date Printed = 06-24-1992 Current Time = 12:26:33

File Name = C:\CEM\DATA\062492.PRN Calibration File=C:\CEM\DATA\062492.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

2:26:10	263.9	18.7	-4079.0	73.2
2:26:11	263.9	18.7	-4079.0	73.2
2:26:11	263.9	18.7	-4079.0	73.2
2:26:19	1673.8	19.0	-3638.5	1056.2
2:26:29	1455.2	18.8	-3409.9	1023.8
2:26:39	1338.2	18.7	-3497.3	1014.9
2:26:49	113.4	18.5	-4113.4	476.6
2:26:59	1117.4	18.4	-3286.4	238.2
2:27:09	1664.7	18.5	-3063.7	326.2
2:27:19	1673.3	18.7	-3337.1	812.6
2:27:29	1672.7	18.7	-3427.2	1078.6
2:27:39	1667.3	18.7	-3386.5	1102.4
2:27:49	1670.0	18.6	-3437.0	1088.4
2:27:59	1679.2	18.5	-3439.7	1107.3
2:28:09	1140.1	18.4	-2459.1	1069.8
2:28:19	238.7	18.4	-2768.6	1012.0
2:28:29	212.6	18.4	-3108.1	379.3
2:28:39	206.7	18.3	-3370.1	205.8
2:28:49	202.9	18.4	-4974.1	195.4
2:28:59	200.0	18.6	-2491.0	192.4
2:29:09	200.5	18.7	-4939.4	188.6
2:29:19	200.0	18.8	-4998.9	188.3
2:29:29	198.6	18.9	-5163.4	189.0
2:29:39	198.0	18.9	-5156.4	189.6
2:29:49	198.1	18.9	-5107.9	190.2
2:29:59	198.2	19.0	-4899.2	189.0
2:30:09	197.7	18.9	-5126.8	191.0
2:30:19	198.7	19.0	-5041.9	188.3
2:30:29	198.5	19.0	-5014.1	189.7
2:30:39	196.4	19.0	-5075.9	190.0
2:30:49	197.7	19.0	-5132.1	188.2
2:30:59	198.5	19.1	-4936.7	187.4
2:31:09	198.2	19.1	-5063.5	187.2
2:31:19	197.6	19.1	-5127.0	189.5
2:31:29	198.3	19.1	-4908.9	186.8
2:31:39	196.9	19.1	-5042.3	188.4
2:31:49	198.1	19.1	-4946.6	188.7
2:31:59	199.1	19.1	-4969.2	186.2
2:32:09	198.9	19.1	-5082.0	188.1
2:32:19	200.5	19.1	-5086.5	186.6
2:32:29	198.0	19.1	-5111.3	188.5
2:32:39	198.7	19.1	-5091.3	186.9

T = 198.4  
R = 188.4

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198.9	18.8	-4297.5	393.6
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CALIBRATION SUMMARY  
 06-24-1992 12:39:17  
 CALIBRATION FILE NAME =D:\LEMO\DATA\06249.CAL

Chan.	Name	Units	Zero		Span		Slope	Int.
			Conc.	Resp.	Conc.	Resp.		
1	THC1	PPM	0.00	0.0019	1490.00	1.486	1004.163	-1.86
2	O2	%	0.00	0.0004	20.90	0.085	247.668	-0.11
3	THC2	PPM	0.00	-0.0011	3980.00	3.772	1054.814	1.18
4		PPM	0.00	0.0092	1490.00	1.526	982.452	-9.04

Press Shift-FrtSc to Print Out Table  
 Press <C> to Continue

CEN INSTRUMENT DRIFT SUMMARY  
 06-24-1992 12:39:56

Chan.	Name	Units	Zero		Span		Drift % of Scale	
			Actual	Observed	Actual	Observed	Zero	Span
1	THC1	PPM	0.000	-0.369	1490.00	1485.01	-0.00	-0.05
2	O2	%	0.000	0.000	20.90	0.28	0.00	-0.60
3	THC2	PPM	0.000	0.000	3980.00	0.00	0.00	-39.00
4		PPM	0.000	-0.96	1490.00	1492.42	-0.31	0.02

VALIANT CORPORATION

2000 COLONY RD. DEPT. 1000

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES

PPM  
Performed for:  
Date Printed = 06-24-1992 Current Time = 12:48:46  
File Name = C:\CEM\DATA\062492.PRN Calibration File=C:\CEM\DATA\06240.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
12:48:54	1741.8	17.4	-3560.5	1149.5
12:48:54	1741.8	17.4	-3560.5	1149.5
12:48:54	1741.8	17.4	-3560.5	1149.5
12:48:55	1741.8	17.4	-3560.5	1149.5
12:48:55	1741.8	17.4	-3560.5	1149.5
12:48:59	2022.1	13.3	-3364.4	1921.6
12:49:09	2022.4	16.2	-1690.2	1912.4
12:49:19	2022.7	19.6	-1169.7	1912.9
12:49:29	2021.1	19.1	-967.3	1901.8
12:49:39	2022.5	19.4	-1741.6	1891.7
12:49:49	2024.1	19.6	-1049.1	1911.3
12:49:59	2023.6	19.7	-872.6	1894.2
12:50:09	2023.7	19.7	-729.7	1917.2
12:50:19	2025.2	19.8	-690.3	1917.2
12:50:29	2024.1	19.8	-682.1	1913.4
12:50:39	1957.4	19.8	-563.2	1905.9
12:50:49	1802.8	19.8	-549.1	1893.8

=====  
 Ave. = ~~1923.5~~ 18.4 -1886.5 ~~1885.0~~  
 =====

2023                      1909

RADIAN CORPORATION 200 ETHANOL UP THE LINE

Field Testing and Process Engineering Dept.

Continuous Emissions Monitoring Data

BAKERIES

,PA

Performed for:

Date Printed = 06-24-1992 Current Time = 12:51:00

File Name = C:\CEM\DATA\062492.PRW Calibration File: C:\CEM\DATA\06248.LWL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

12:51:17	1946.0	19.5	-3100.3	1367.9
12:51:19	326.6	18.9	-3957.9	1733.7
12:51:29	315.5	18.6	-3993.8	666.7
12:51:39	306.1	18.9	-5157.3	311.7
12:51:49	303.8	11.5	-5174.8	294.0
12:51:59	298.4	4.8	-5189.8	296.1
12:52:09	308.3	0.9	-5183.0	282.4
12:52:19	313.4	-0.3	-5161.6	277.6
12:52:29	309.8	-0.6	-5079.9	280.9
12:52:39	309.7	-1.3	-4683.6	274.7
12:52:49	293.9	-0.1	-4784.1	292.4
12:52:59	291.2	-0.3	-5176.6	291.3

Avg. =	443.6	7.4	-4736.9	350.8
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307.1

286.2

RADIAN CORPORATION 2030 OI (NEW) UP THE LINE

Field Testing and Process Engineering Dept.

Continuous Emissions Monitoring Data

BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 12:54:37

File Name = C:\CEM\DATA\062492.PRN Calibration File:C:\CEM\DATA\0624B.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM
12:54:44	1496.7	6.3	-3491.6	1089.2
12:54:45	1496.7	6.3	-3491.6	1089.2
12:54:49	1993.0	15.9	-3493.7	1713.6
12:54:59	2001.7	15.8	-2251.1	1922.4
12:55:09	2002.7	18.5	-1541.9	1938.6
12:55:19	2006.1	3.7	-888.1	1950.1
12:55:29	2017.3	1.1	-875.2	1949.4
12:55:39	2019.5	0.1	-896.3	1950.5
12:55:49	2020.5	-0.3	-914.8	1962.6

Avg. = 1894.9 6.6 -1982.6 1728.6

2011 190/48

RADIAN CORPORATION 798 01 UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 12:56:46

File Name = C:\CENDATA\062492.FRN Calibration File:C:\CENDATA\06248.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
12:56:53	2063.3	-0.4	-1068.5	1914.8
12:56:53	2063.3	-0.4	-1068.5	1914.8
12:56:59	817.4	2.3	-3808.5	935.1
12:57:09	811.5	4.6	-3607.7	815.8
12:57:19	806.1	5.4	-3644.6	778.7
12:57:29	805.8	1.2	-3733.6	779.3
12:57:39	799.5	-0.3	-3698.9	790.1
12:57:49	805.2	-0.1	-3669.1	777.2
12:57:59	801.9	-0.1	-3726.9	778.8
12:58:09	799.6	-0.4	-3698.1	791.3
12:58:19	799.2	-0.4	-3682.1	786.8
12:58:29	801.7	-0.1	-4218.9	779.1
12:58:39	799.2	-0.4	-3726.6	776.4
12:58:49	796.1	-0.5	-3705.8	794.8

=====  
Avg. = 803.6 0.7 -3360.6 958.8  
=====

801.5

783.2

60

RADIAN CORPORATION 3700 UP THE LINE

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES  
.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 13:02:08

File Name = C:\CEMDATA\062492.PRN Calibration File:C:\CEMDATA\06249.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
13:02:15	1783.2	17.6	-3727.6	1044.6
13:02:19	3846.5	17.4	-4232.3	1132.6
13:02:29	3878.3	17.7	-2965.2	2658.8
13:02:39	3906.8	17.1	-756.4	3724.3
13:02:49	3933.4	12.4	-66.5	3760.0
13:02:59	3938.7	5.0	22.4	3824.3
13:03:09	3941.3	1.5	490.5	3888.8
13:03:19	3948.2	0.4	818.0	3797.9
13:03:29	3948.9	-0.0	1107.3	3815.5
13:03:39	3946.5	-0.4	762.1	3779.8
13:03:49	3945.4	-0.3	654.2	3845.0
13:03:59	3946.6	-0.4	797.0	3819.3
13:04:09	3947.3	-0.2	944.5	3865.0
13:04:19	3947.6	0.0	1376.6	3854.2
13:04:29	3946.9	-0.1	1645.3	3866.1
13:04:39	3950.5	-0.6	1398.4	3829.2
13:04:49	3948.8	-0.4	1730.9	3872.8
13:04:59	3948.4	-0.3	1694.4	3832.6
13:05:09	3949.3	-0.4	1632.5	3850.1
13:05:19	3948.3	-0.3	1689.3	3855.7
=====				
Avg. =	3827.5	4.3	250.8	3491.8

3948

3849

BADIAN CORPORATION 88.2 PPM U T L

Field Testing and Process Engineering Dept.

Continuous Emissions Monitoring Data

BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:13:16

File Name = C:\CEMDATA\062492.PRN Calibration File:C:\CEMDATA\06249.CAL

06-24-1992	THC1	O2	THC2	
Time	PPM	%	PPM	PPM

17:13:41	77.2	18.5	-4032.2	81.5
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Avg.=	77.2	18.5	-4032.2	81.5
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Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES  
.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:14:46

File Name = C:\CEM\DATA\062492.PAN Calibration File=C:\CEM\DATA\06248.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:14:55	196.9	18.5	-4415.6	88.1
17:14:55	196.9	18.5	-4415.6	88.1
17:15:01	201.0	18.6	-2624.9	188.1
17:15:11	200.1	18.5	-4936.3	190.8
17:15:21	198.3	18.6	-2532.0	190.1
17:15:31	197.7	18.7	-4911.1	189.6
17:15:41	196.2	18.7	-5105.7	191.5
17:15:51	197.1	18.7	-5063.1	191.0
17:16:01	196.7	18.7	-5155.8	190.8
17:16:11	196.1	18.6	-5120.6	193.2
17:16:21	197.6	18.7	-4980.0	189.4
17:16:31	196.8	18.7	-5121.9	190.4
17:16:41	196.9	18.7	-5150.3	190.7
17:16:51	196.8	18.6	-5140.3	190.1
17:17:01	196.9	18.7	-5177.2	187.6
17:17:11	197.4	18.7	-5156.6	186.7
17:17:21	197.8	18.8	-4983.4	186.3
Avg.=	197.5	18.6	-4700.4	<del>177.8</del>

189.7

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:18:26

File Name = C:\CEMDATA\062492.PRN Calibration File:C:\CEMDATA\0624B.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:18:35	1410.7	19.1	-2290.8	2629.6
17:18:35	1410.7	19.1	-2290.8	2629.6
17:18:41	788.0	17.8	-3117.5	1171.5
17:18:51	793.5	17.2	-3689.4	817.9
17:19:01	794.5	13.2	-3638.1	793.4
17:19:11	795.1	5.6	-3639.9	813.5
17:19:21	796.4	1.9	-3719.4	783.5
17:19:31	798.4	-0.3	-4642.8	775.2
17:19:41	797.7	-0.2	-3741.0	778.5
17:19:51	802.9	-0.2	-3734.2	790.8
17:20:01	805.7	-0.2	-3688.1	793.4
17:20:11	800.0	-0.1	-3732.6	790.8
17:20:21	795.1	-0.3	-3707.6	800.4
17:20:31	800.2	-0.1	-3713.5	787.5
17:20:41	797.5	-0.3	-3721.5	791.7
17:20:51	798.6	-0.3	-3721.7	784.1
17:21:01	798.5	-0.2	-3750.9	783.2
17:21:11	796.7	-0.2	-3739.9	789.4
17:21:21	797.0	-0.3	-3743.2	776.8
17:21:31	799.4	-0.1	-3745.1	785.2
17:21:41	796.4	-0.3	-3742.1	780.1
17:21:51	797.5	-0.2	-3715.4	788.1
17:22:01	799.1	-0.2	-3704.9	784.1

=====  
 Avg. = ~~800.9~~ 3.9 -3605.7 ~~814.0~~  
 =====

798.0      789.4

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES  
 .PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:27:59

File Name = C:\CEMDATA\062492.FRN Calibration File:C:\CEMDATA\0624B.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:28:07	2015.3	18.2	-3445.9	1112.9
17:28:11	2033.9	14.9	-3474.9	1919.0
17:28:21	2023.4	13.3	-2019.3	1922.5
17:28:31	2013.0	17.2	-1365.6	1942.2
17:28:41	2014.5	18.5	-947.4	1918.9
17:28:51	2014.1	18.7	-1677.1	1916.9
17:29:01	2013.9	19.0	-1384.4	1916.1
17:29:11	2015.5	19.2	-921.8	1912.7
17:29:21	2015.7	19.3	-957.7	1915.6
17:29:31	2013.9	19.4	-902.5	1912.5
17:29:41	2015.1	19.5	-864.2	1905.2
17:29:51	2012.9	19.5	-863.2	1913.1
17:30:01	2014.1	19.5	-856.2	1912.8
17:30:11	2017.7	19.5	-842.9	1909.0
17:30:21	2016.2	19.6	-807.3	1913.3
17:30:31	2015.7	19.6	-819.0	1911.1
17:30:41	2017.0	19.6	-995.5	1928.9
17:30:51	2014.6	19.6	-901.4	1907.4
17:31:01	2014.9	19.6	-880.6	1896.5
17:31:11	2013.0	19.6	-1147.9	1897.6
17:31:21	1349.2	19.6	-933.9	1887.4
17:31:31	1419.1	19.6	-969.1	1854.6
17:31:41	3776.6	19.8	-2615.8	1355.7
17:31:51	3875.9	18.3	-2536.2	3150.6
17:32:01	3900.7	15.7	-659.0	3751.5

Avg. =	2015.8	18.6	-1351.5	1979.4
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2016                      1874

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:32:35

File Name = C:\CEMDATA\062492.FRN Calibration File:C:\CEMDATA\06248.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:32:44	3926.5	3.4	-321.5	3791.5
17:32:44	3926.5	3.4	-321.5	3791.5
17:32:45	3928.5	3.4	-321.5	3791.5
17:32:51	3936.1	0.2	-282.9	3811.3
17:33:01	3941.5	-0.0	129.1	3883.5
17:33:11	3930.0	-0.1	712.2	3851.3
17:33:21	3973.1	-0.4	756.7	3910.0
17:33:31	3971.1	-0.4	1018.4	3833.9
17:33:41	3973.6	-0.5	1334.5	3908.7
17:33:51	3954.7	0.2	1547.7	3832.1
17:34:01	3941.0	0.0	1645.0	3886.2
17:34:11	3938.3	0.2	1734.9	3875.5
17:34:21	3938.8	-0.3	1656.6	3866.1
17:34:31	3948.7	-0.1	1007.0	3835.3
17:34:41	3933.3	-0.2	1680.5	3843.8
17:34:51	3934.2	0.1	1706.1	3861.1
17:35:01	3937.2	-0.4	1591.5	3823.8
17:35:11	3937.7	-0.0	1479.1	3844.6
17:35:21	3937.3	-0.2	1594.9	3887.0
17:35:31	3940.5	-0.3	1531.6	3861.0
17:35:41	3942.4	-0.2	1561.8	3834.9

=====  
 Avg. = ~~3942.3~~ 0.4 1028.6 ~~3877.3~~  
 =====

3944.9 3847.2

BAKERY CORPORATION 100 ETHANOL U T L

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES  
.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:47:01

File Name = C:\CEM\DATA\062492.PRN Calibration File: C:\CEM\DATA\06246.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:47:10	19.8	14.7	-295.7	2579.6
17:47:11	467.4	14.3	-1353.4	2657.4
17:47:21	347.5	14.3	-368.1	2503.4
17:47:31	308.0	13.5	-2277.8	691.7
17:47:41	297.4	8.4	-4629.1	416.6
17:47:51	297.0	2.9	-5123.5	362.7
17:48:01	301.1	8.5	-5126.6	330.2
17:48:11	298.5	-0.3	-5144.2	324.7
17:48:21	297.0	-0.1	-5127.9	321.2
17:48:31	301.7	-0.3	-5152.2	316.7
17:48:41	301.9	-0.1	-5143.1	315.8
17:48:51	301.5	-0.1	-5155.3	315.1
17:49:01	302.3	-0.2	-5164.7	315.1
17:49:11	300.9	-0.1	-5162.8	312.7
Avg. =	<del>306.0</del>	4.8	-3944.6	<del>839.5</del>

300.1

306.1

Field Testing and Process Engineering Dept.  
Continuous Emissions Monitoring Data  
BAKERIES  
.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 17:57:52

File Name = C:\CEM\DATA\062492.PRN Calibration File:C:\CEM\DATA\062492.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
17:58:00	80.6	16.0	-240.8	3073.1
17:58:01	706.5	15.0	-1610.9	1842.9
17:58:11	723.8	14.3	-3487.7	904.6
17:58:21	738.8	12.8	-3603.7	839.4
17:58:31	745.5	6.9	-3615.2	800.6
17:58:41	748.5	2.3	-3706.5	793.1
17:58:51	751.4	0.3	-3772.3	772.3
17:59:01	751.0	-0.1	-3745.6	768.3
17:59:11	752.9	-0.3	-3777.0	752.4
17:59:21	755.9	-0.2	-3792.4	762.2
17:59:31	756.4	-0.3	-3786.8	751.4
17:59:41	758.8	-0.2	-3796.8	777.7
17:59:51	759.5	-0.1	-3763.6	765.3
18:00:01	758.2	-0.2	-3797.5	776.3

=====  
Ave.= ~~697.1~~ 4.7 -3326.9 ~~1027.1~~  
=====

755.5

765.7

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES

.PA

Performed for:

Date Printed = 06-24-1992 Current Time = 18:01:13

File Name = C:\CEMDATA\062492.PAN Calibration File:C:\CEMDATA\0624B.CAL

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
18:01:22	207.1	6.8	-520.6	2719.9
18:01:22	207.1	6.8	-520.6	2719.9
18:01:31	13.1	12.0	-4197.5	479.9
18:01:41	4.6	9.9	-4040.3	146.8
18:01:51	3.6	4.1	-4270.3	89.9
18:02:01	1.8	0.7	-3844.1	63.3
18:02:11	-0.9	-0.2	-3685.8	44.1
18:02:21	0.0	-0.4	-3693.3	33.6
18:02:31	-0.2	-0.4	-3690.5	38.4
18:02:41	-2.3	-0.4	-3698.2	35.2
18:02:51	-1.7	-0.3	-3736.1	32.3
18:03:01	-3.2	-0.1	-3698.3	27.4
18:03:11	-0.8	-0.2	-3718.7	27.9
18:03:21	-2.8	-0.1	-3713.1	25.3
18:03:31	-2.8	-0.3	-3674.7	24.6
18:03:41	-3.4	-0.1	-3702.3	25.7
18:03:51	-1.8	-0.2	-3675.4	22.9
18:04:01	-1.5	-0.2	-3679.4	19.5
18:04:11	-3.0	-0.2	-3684.8	21.0
18:04:21	-2.0	-0.1	-3714.8	18.9
18:04:31	1.2	-0.3	-3851.1	12.7
18:04:41	-1.6	-0.1	-3709.8	16.2
=====				
=====				
Avg. =	10.7	1.7	-3523.9	302.1

*Handwritten:*  
 -1.97  
 23.8

Field Testing and Process Engineering Dept.  
 Continuous Emissions Monitoring Data  
 BAKERIES  
 .PA

Performed for:

Date Printed = 06-24-1992 Current Time = 18:09:54  
 File Name = C:\CEMDATA\062492.PRN Calibration File: D:\CEMDATA\0624B.CAL

*Talk*

*Rack*

06-24-1992 Time	THC1 PPM	O2 %	THC2 PPM	PPM
--------------------	-------------	---------	-------------	-----

18:10:02	63.2	14.4	-272.1	2680.9
18:10:02	63.2	14.4	-272.1	2680.9
18:10:11	97.5	12.9	-5088.2	299.2
18:10:21	97.3	7.3	-2431.2	235.0
18:10:31	95.4	2.2	-5829.6	180.6
18:10:41	94.4	0.8	-4924.5	154.5
18:10:51	96.0	-0.1	-4962.3	147.8
18:11:01	97.0	-0.2	-4977.9	136.4
18:11:11	98.4	-0.3	-4970.8	132.6
18:11:21	97.3	-0.4	-4815.5	128.6
18:11:31	97.0	-0.5	-4711.7	120.5
18:11:41	98.1	-0.4	-4573.6	115.0
18:11:51	100.4	-0.5	-4414.6	110.4
18:12:01	100.2	-0.5	-4555.3	111.1
18:12:11	99.9	-0.5	-4431.5	108.7
18:12:21	98.3	-0.6	-4387.1	107.4
18:12:31	99.1	-0.4	-4400.1	104.9
18:12:41	100.6	-0.6	-4394.3	106.0
18:12:51	100.3	-0.5	-4453.4	103.5
18:13:01	100.0	-0.2	-4177.9	100.0
18:13:11	100.5	-0.5	-4378.5	102.7
18:13:21	102.7	-0.4	-4374.5	100.5
18:13:31	99.9	-0.4	-4330.1	100.9
18:13:41	98.5	-0.5	-4247.3	101.2
18:13:51	99.5	-0.5	-4307.6	101.8
18:14:01	101.5	-0.4	-4187.0	97.1
18:14:11	100.3	-0.5	-4422.8	106.0
18:14:21	101.6	-0.2	-4266.5	98.7

=====  
 Avg. = 96.4 1.5 -4162.8 109.7  
 =====

*95.9*

*101.0*

CALIBRATION SUMMARY  
 06-24-1992 18:24:29  
 CALIBRATION FILE NAME =C:\CEM\DATA\@E14C.CAL

```
=====
```

Chan.	Name	Units	Zero		Span		Slope	Int.
			Conc.	Resp.	Conc.	Resp.		
1	THC1	PPM	0.00	0.0016	1490.00	1.480	1007.724	-1.63
2	O2	%	0.00	0.0004	20.90	0.085	247.860	-0.11
3	THC2	PPM	0.00	-0.0011	3980.00	3.772	1054.014	1.18
4		PPM	0.00	0.0261	1490.00	1.555	974.433	-25.39

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=====
```

Press Shift-FrtSc to Print Out Table  
 Press (C) to Continue

CEM INSTRUMENT DRIFT SUMMARY  
 06-24-1992 18:24:38

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=====
```

Chan.	Name	Units	Zero Conc.		Span		Drift % of Scale	
			Actual	Observed	Actual	Observed	Zero	Span
1	THC1	PPM	0.000	-0.237	1490.00	1484.60	-0.00	-0.36
2	O2	%	0.000	0.000	20.90	0.00	0.00	-03.60
3	THC2	PPM	0.000	0.000	3980.00	0.00	0.00	-35.60
4		PPM	0.000	716.554	1490.00	1518.02	0.17	0.29

```
=====
```

Appendix e.3  
Method 18 Analytical Summary

SIGNATURE M. D. [Signature]

DATE 7-17-92

CALC. NO. \_\_\_\_\_

CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MAIER'S BAKERY : EASTON, PA.

JOB NO. \_\_\_\_\_

SUBJECT 6-22-92 DATA REVIEW

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Final Cal. Curve

Ethanol

Run#	Conc. (ppm)	AREA
2	200	638,781
3	498	1,630,059
4	1000	2,979,406
5	4000	11,697,936

$r = 0.9999$   
 $m = 2,897$   
 $b = 109,479$

all 15  
 $\frac{11,697,936}{4000} = \frac{2,979,406}{1000} + b$   
 $2924.484 = \frac{2979.406}{m} + b$   
 $2986$   
 $147,110$   
 $\frac{4.5}{m}$   
~~Ethanol~~  

Conc	HI
200	0.9
498	2.4
1000	4.9

Acetaldehyde

Run#	Conc. (ppm)	AREA
6	1.52	54,311
8	3.03	105,388
9	22.15	730,749
10	44.3	1,413,787
11	82.15	2,964,186

$r = 0.9980$   
 $m = 35,944$   
 $b = -37,502$

~~all final #'s used~~

METHANE

Run#	Conc. (ppm)	AREA
12	16.0	864,493
13	3.25	295,355
14	4.88	313,276
15	9.76	452,440
16	80.2	3,074,457
18	399	14,869,800

$r = 0.9999$   
 $m = 36,866$   
 $b = 155,737$

SIGNATURE M. D. [Signature] DATE 7-17-92 CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MAIER'S BAKERY EASTON, PA JOB NO. \_\_\_\_\_

SUBJECT 6-22-92 DATA REVIEW SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Run #	TIME	LOCATION	METHANE AREA/CONC.	Acetaldehyde AREA/CONC.	Ethanol AREA/CONC.
22	10:49:25	READCO OVEN BURNER #2	449,792 7.98	1,188,870 34.5	1,971,626 643
23	10:59:25	READCO OVEN	240,993 2.31	862,262 25.3	3,753,794 1240
24	11:07:31	BURNER #1	601,009 12.1	2,473,040 70.6	2,435,277 878
25	11:16:41	READCO OVEN	186,351 0.83	275,861 8.82	1,126,603 427
27	11:37:00	READCO OVEN	172,797 0.46	606,090 18.1	2,474,900 816
28	11:45:55	BURNER #2	302,213 3.97	1,410,599 40.7	1,661,829 611
29	11:54:45	READCO OVEN	176,966 0.58	631,732 18.8	2,472,482 891
30	12:03:45	PETERSON OVEN	24,316,016 796	346,015 10.8	1,941,578 709
31	12:12:45	BURNER	1,075,069 24.9	68,097 2.97	<u>LMDC</u>
32	12:21:45	OVEN	6,807,728 180	757,652 22.4	2,179,198 790
33	12:31:25	BURNER	27,061,104 912	185,404 6.27	3,10,464 69.4
34	12:40:25	OVEN	24,312,832 796	1,137,104 33.1	3,609,958 1283
35	12:49:25	BURNER	2,307,022 58.4	146,463 5.18	82,100 <del>666 mg</del> LMDC
36	12:59:25	OVEN	27,448,336 899	865,134 25.4	2,468,205 814
37	13:08:10	OVEN	8,386,128 223	777,630 22.9	2,719,358 898
38	13:17:15	BURNER	31,858,792 1920	167,380 5.76	426,924 113
39	13:24:15	OVEN	24,562,480 870	828,595 24.4	1,565,046 502

SIGNATURE M.D. [Signature] DATE 7-17-92

CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MAIER'S BAKERY; EASTON, PA

JOB NO. \_\_\_\_\_

SUBJECT 6-22-92 DATA REVIEW contd.

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Run #	TIME	Location	METHANE AREA / CONC.	Acetaldehyde AREA / CONC.	Ethanol AREA / CONC.
40	13:35:5	BURNER	32,328,518 1950	157,570 5.49	279,247 58.6
41	13:45:00	BURNER	31,969,280 1930	136,868 4.90	327,645 75.3
46	14:14:40	BATTER COOLING PROOF OVEN	17,306,976 567	1,028,481 30.0	3,723,949 1250
47	14:23:40	BURNER	23,930,1736 784	228,044 7.47	126,457 5.86
48	14:32:30	OVEN	14,003,176 376	1,104,768 32.1	3,947,957 1320
49	14:41:31	BURNER	27,351,456 784 895	203,832 6.79	183,789 25.7
50	14:50:30	OVEN	17,656,288 578	1,106,098 32.2	2,983,789 992
51	14:59:45	BURNER	33,640,224 2030	1,99,210 6.66	437,331 113
52	15:08:32	OVEN	26,626,976 872	1,081,052 31.5	2,158,163 707
53	15:18:30	BURNER	31,340,960 1890	136,627 4.90	421,779 108
54	15:27:30	OVEN	29,471,152 900	236,529 7.71	385,264 95.2
55	15:36:30	BURNER	32,937,952 1980	145,784 5.16	229,527 41.4
56	15:45:30	OVEN	21,374,048 700	662,268 19.7	1,671,743 539
57	15:54:30	BURNER	25,170,000 824	185,736 6.28	1,21,654 4.20
58	16:03:30	OVEN	22,560,752 742	994,483 29.0	3,091,214 1030
59	16:13:00	BURNER	32,010,980 1930	159,075 5.53	185,506 26.3



SIGNATURE M.D. [Signature] DATE 7-17-92

CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MAJERS BATTERY, EASTON, PA.

JOB NO. \_\_\_\_\_

SUBJECT 6-22-92 FINAL CAL. CURVE

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

ACETALDEHYDE

Run#	Conc. (ppm)	AREA	
71	3.03	119,421	$r = 0.9997$ $m = 33,897$ $b = 33,686$
72	44.3	1,363,123	
73	82.5	2,807,298	

Ethanol

Run#	Conc. (ppm)	AREA	
74	200	589,466	$r = 0.9999$ $m = 2888$ $b = 855$
75	2000	5,756,314	
76	4000	11,563,376	

METHANE

Run#	Conc. (ppm)	AREA	
77	16.0	748,470	$r = 1.0000$ $m = 36,683$ $b = 160,151$
78	40.1	1,636,512	
79	80.2	3,084,824	
80	199.5	7,443,552	
81	399.0	14,791,768	

SINGLE PT > RANGE

82	798	24,371,408
83	2000	33,191,616
84	3980	39,110,272

SIGNATURE M.D. [Signature]

DATE 7-18-92

CHECKED \_\_\_\_\_

DATE \_\_\_\_\_

PROJECT MAVER'S BAKERY : EASTON, PA.

JOB NO. \_\_\_\_\_

SUBJECT 6-24-92 Initial CALIBRATION

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Ethanol

Run#	Conc. (ppm)	AREA	
87	200	602,888	$r = 0.9999$
88	498	1,417,032	$m = 2,850$
89	2000	5,675,651	$b = 7,194$
90	4000	11,423,960	

Acetaldehyde

Run#	Conc. (ppm)	AREA	
91	1.52	50,831	$r = 0.9999$
93	3.03	103,052	$m = 34,519$
94	20.6	726,564	$b = 7222$
95	41.2	1,451,311	
96	82.5	2,842,578	

METHANE

Run#	Conc. (ppm)	AREA	
98	16.0	773,409	$r = 1.000$
99	40.1	1,650,794	$m = 36,327$
100	80.2	3,085,282	$b = 184,780$
101	160	5,989,490	
102	399	14,684,032	

SIGNATURE Mr. D. [Signature]

DATE 7-18-92

CHECKED \_\_\_\_\_

DATE \_\_\_\_\_

PROJECT MAIERS BAKERY: EASTON, PA.

JOB NO. \_\_\_\_\_

SUBJECT 6-24-92 DATA REVIEW

SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Run #	TIME	LOCATION	METHANE AREA/CONC.	Acetaldehyde AREA/CONC.	Ethanol AREA/CONC.
109	10:17:10	READCO OVEN	225,255 1.11	658,597 18.9	2,586,957 905
110	10:26:15	BURNER #02	472,208 7.91	1,966,735 56.8	1,486,804 519
111	10:35:05	OVEN	259,839 2.07	684,707 19.6	2,541,150 889
112	10:44:00	BURNER #01	473,426 7.95	1,703,909 49.1	1,605,854 562
113	10:52:59	OVEN	251,366 1.83	762,163 21.9	3,057,446
114	11:01:50	BURNER #02	390,965 5.68	1,497,186 43.2	1,922,875 1070
115	11:10:50	OVEN	276,635 2.53	757,658 21.6	3,024,334 1860
116	11:19:45	PETERSON OVEN	16,100,360 531	674,651 19.3	2,095,724 733
117	11:28:45	BURNER	33,912,576 2050	120,298 3.28	243,254 82.8
118	11:37:35	OVEN	14,882,296 405	432,187 12.3	673,060 234
119	11:46:45	BURNER	27,641,648 1680	110,065 2.98	73,712 23.4
120	11:55:50	OVEN	23,622,176 779	1,071,595 30.8	1,657,328 579
121	12:04:50	BURNER	34,110,920 2070	147,053 4.05	203,724 69.0
122	12:13:45	OVEN	21,133,248 1770	904,207 26.0	981,577 342
128	14:15:10	BURNER PETERSON	29,990,032 1820	162,246 4.49	86,821 27.9
129	14:24:00	OVEN	24,026,624 792	486,866 13.9	414,318 155
130	14:32:55	BURNER	2,250,736 56.9	119,918 3.26	63,961 19.9

SIGNATURE M.D. [Signature] DATE 7-18-92 CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MALET'S BAKERY; EASTON, PA. JOB NO. \_\_\_\_\_

SUBJECT 6-24-92 DATA REVIEW CONTD. SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Run #	TIME	LOCATION	METHANE AREA / CONC.	Acetylene AREA / CONC.	Ethanol AREA / CONC.
131	14:42:05	OVEN	8,374,618 225	550,300 15.7	263,643 90.0
132	14:51:10	BURNER	14,555,088 396	157,969 4.37	168,796 56.7
133	15:00:25	OVEN	20,290,528 669	1,152,642 33.2	1,053,054 367
134	15:09:40	BURNER	33,150,960 2010	132,015 3.62	661,848 230
135	15:18:30	OVEN	19,785,504 652	979,243 28.1	1,233,619 430
136	15:27:30	BURNER	33,168,336 2020	188,246 4.66	566,165 196
137	15:36:25	OVEN	28,972,192	397,033 11.3	636,383 221
138	15:45:40	BURNER	3,975,877 104	89,314 2.38	145,172 48.4
139	15:54:40	OVEN	14,933,456 406	783,684 22.5	592,681 205
140	16:03:45	BURNER	29,117,520 1760	128,557 3.52	235,368 80.1
141	16:13:10	OVEN	24,860,272 820	999,520 28.7	647,570 225
142	16:22:05	BURNER	24,391,248 804	1,117,553 32.2	1,280,355 447
143	16:32:25	OVEN	23,082,752 761	1,102,280 31.7	2,526,109 884
144	16:41:25	BURNER	26,734,160 881	176,316 4.90	539,968 187
145	16:50:10	OVEN	25,371,776 836	950,204 27.3	1,016,168 354
146	16:59:01	BURNER	25,286,720 834	212,288 5.94	162,022 54.3

SIGNATURE M.D. [Signature] DATE 7-18-92 CHECKED \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT MAJER'S BAKERY EASTON, PA JOB NO. \_\_\_\_\_

SUBJECT 6-24-92: FINAL CALIBRATION SHEET \_\_\_\_\_ OF \_\_\_\_\_ SHEETS

Ethanol

Run#	Conc. (ppm)	AREA	
161	200	588,025	$r = 0.9995$
162	498	1463,845	$m = 2777$
165	7000	11,161,720	$b = 55,785$

ACETALDEHYDE

Run#	Conc. (ppm)	AREA	
166	3.03	103,385	$r = 0.9994$
167	41.2	1,447,116	$m = 34,816$
168	82.5	2,870,592	$b = 2956$

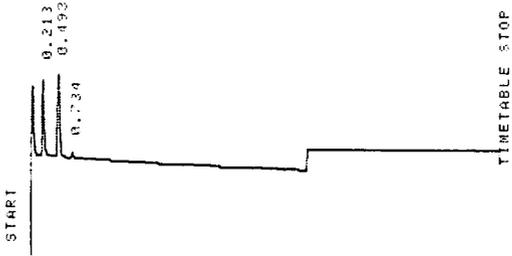
METHANE (SINGLE PT. VALUES)

Run#	Conc	AREA
158	798	24,205,264
159	2000	32,940,592
160	3980	38,981,056

Appendix C.4

Method 18 Chromatogram





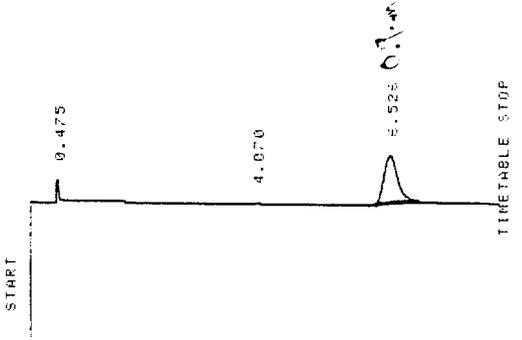
RUN# 1 JUN 22, 1992 08123100

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.213	112019	BB	.037	41.64213	
.493	144211	BB	.044	53.60925	
.734	12774	BB	.052	4.74863	

TOTAL AREA# 269004  
MUL FACTOR#1.0000E+00

*withanol @ 200ppm*

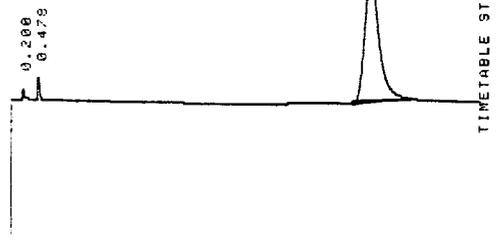
\* RUN # 2 JUN 22, 1992 08139117 ALM 018891



AREA%	RT	AREA	TYPE	WIDTH	AREA%
.475	33577	BB	.037	4.84585	
4.070	20544	PB	.159	2.96492	
6.526	639781	PB	.320	92.18925	

TOTAL AREA= 592992  
 MUL FACTOR=1.0000E+00

\* RUN # 3 JUN 22, 1992 08148137 *ACM 079446 Standard @ 498 ppm*

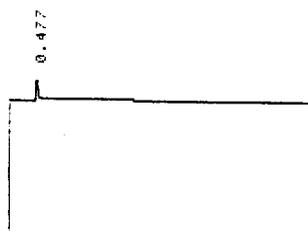


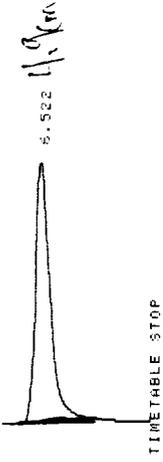
RUN# 3 JUN 22, 1992 08148137

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.200	18155	BB	.039	1.07617	
.478	38783	BB	.040	2.29903	
6.525	1630059	BB	.324	96.62480	

TOTAL AREA=1686999  
 MUL FACTOR=1.0000E+00

\* RUN # 4 JUN 22, 1992 09180124 *ACM 079446 Standard @ 1000 ppm*





RUN# 4 JUN 22, 1992 09100124

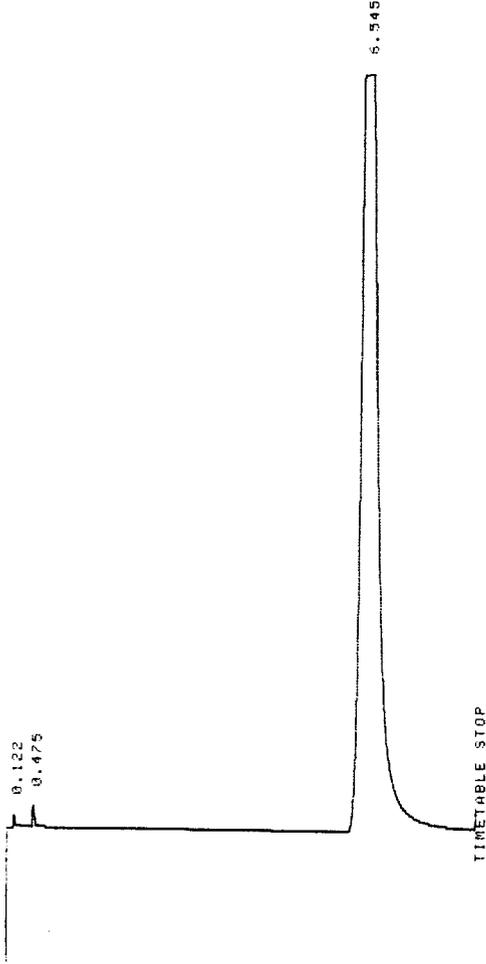
RT	AREA	TYPE	WIDTH	APER%
.477	33355	VB	.039	1.10712
6.522	2979406	PB	.297	98.89290

TOTAL AREA=3012762  
MUL FACTOR=1.0000E+00

*011 908 54000000*

\* RUN # 5 JUN 22, 1992 09112134 ALM

START



PUN# 5 JUN 22, 1992 09112134

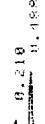
RT	AREA	TYPE	WIDTH	APER%
.122	17385	PV	.034	.14798
.475	33286	VV	.039	.28315
6.545	11697936	PB	.287	99.56886

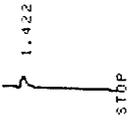
TOTAL AREA=1.1749E+07  
MUL FACTOR=1.0000E+00

*13714*  
*1.528pm*

\* RUN # 6 JUN 22, 1992 09123131

START



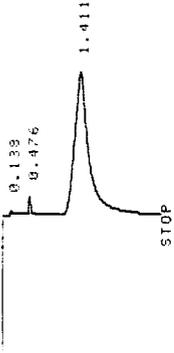


RUN# 6 JUN 22, 1992 09:23:31

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.210	1.3845	87	BB	.035	8.09015
.489	1.82948	162	BB	.046	68.15637
	1.422	54341	BB	.111	31.75348

TOTAL AREA= 171134  
MUL FACTOR=1.0000E+00

\* RUN # 7 JUN 22, 1992 09:28:141  
START



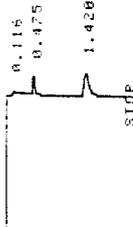
RUN# 7 JUN 22, 1992 09:28:141

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.476	0.139	30130	VB	.038	1.84128
	1.411	160943	BB	.291	99.15972

TOTAL AREA=1639722  
MUL FACTOR=1.0000E+00

*137774 Acet-Whisk @ 300 ppm*

\* RUN # 8 JUN 22, 1992 09:32:124  
START



RUN# 8 JUN 22, 1992 09:32:124

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.116	1.8489	88	BB	.039	12.00348
.475	0.147	30147	BB	.039	19.157305
	1.420	105389	BB	.110	68.42355

TOTAL AREA= 154823

\* RUN # 9 JUN 22, 1992 09137144 P2 DA. APC 9441  
 ACETALDEHYDE @ 22.15 ppm  
 START  
 0.495  
 1.238  
 1.429  
 STOP

RUN# 9 JUN 22, 1992 09137144

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.495	123803	PB	.042	13.73479	
1.238	46831	PV	.185	5.19546	
1.429	730749	VB	.107	81.06976	

TOTAL AREA= 901393  
 MUL FACTOR=1.0000E+00

\* RUN # 10 JUN 22, 1992 09141142 P4C 9441 Acetaldehyde @ 44.3 ppm  
 START  
 0.136  
 0.488  
 1.416  
 STOP

RUN# 10 JUN 22, 1992 09141142

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.480	30609	VB	.040	2.11916	
1.416	1413797	PB	.104	97.89083	

TOTAL AREA=1444396  
 MUL FACTOR=1.0000E+00

\* RUN # 11 JUN 22, 1992 09145136 ALM 001155 Acetaldehyde @ 22.15 ppm  
 START  
 0.084  
 0.482  
 1.414  
 STOP 2.689

RUN# 11 JUN 22, 1992 09145136

RT	AREA	TYPE	WIDTH	AREM%
.482	39128	BB	.044	1.25254
1.414	2954186	PB	.103	97.37532
2.589	41739	IBH	.236	1.37117

TOTAL AREA=3044053  
MUL FACTOR=1.0000E+00

\* RUN # 12 JUN 22, 1992 09155101 1:50h 1L-7046  
METHANOL @ 16.0 ppm

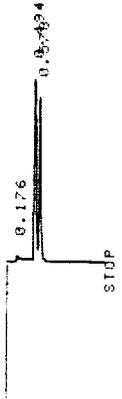


RUN# 12 JUN 22, 1992 09155101

AREM%	RT	AREA	TYPE	WIDTH	AREM%
.495	064493	SPB	.037	100.00000	

TOTAL AREA= 064493  
MUL FACTOR=1.0000E+00

\* RUN # 13 JUN 22, 1992 10101153 1:30h AM 21441  
METHANOL @ 3.25 ppm  
Ethanol @ 3.51 ppm



RUN# 13 JUN 22, 1992 10101153

AREM%	RT	AREA	TYPE	WIDTH	AREM%
.176	12711	PB	.051	2.49094	
.494	275355	BV	.039	53.96051	
.579	222223	VB	.035	43.54846	

TOTAL AREA= 510289  
MUL FACTOR=1.0000E+00

\* RUN # 14 JUN 22, 1992 10104102 1:20h AM 21441  
METHANOL @ 4.80 ppm  
Ethanol @ 5.15 ppm



RUN# 14 JUN 22, 1992 10104102

AREM%

.497 313276 PV .038 48.26848  
.581 335752 VB .036 51.73150

TOTAL AREA=649029  
MUL FACTOR=1.0000E+00

*total area 649029  
MUL FACTOR=1.0000E+00  
MUL FACTOR=1.0000E+00*

\* RUN # 15 JUN 22, 1992 10:06:15  
START



RUN# 15 JUN 22, 1992 10:06:15

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.493	452440	VV	.037	40.42750	
.577	666699	VB	.036	59.57248	

TOTAL AREA=1119139  
MUL FACTOR=1.0000E+00

*11-7014 METALWAVE @ 26.7900*

\* RUN # 16 JUN 22, 1992 10:13:13  
START



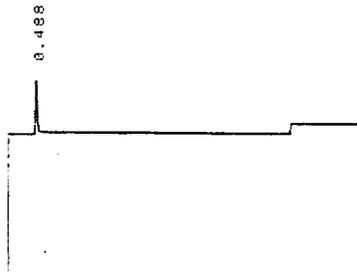
RUN# 16 JUN 22, 1992 10:13:13

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.497	397453	SFB	.036	100.00000	

TOTAL AREA=397453  
MUL FACTOR=1.0000E+00

*QC 013222 AIR TEDAL BAG*

\* RUN # 17 JUN 22, 1992 10:17:10  
START



TIMETHBLE STOP

RUN# 17 JUN 22, 1992 10:17:30

AREA%  
RT AREA TYPE WIDTH WREK%  
.499 70739 VB .035 100.00000

TOTAL AREA= 70739  
MUL FACTOR=1.0000E+00

*ALM 011031 309 ppm  
METHANE @ 11031*

\* RUN # 18 JUN 22, 1992 10:34:37 17 ALM 011031 309 ppm  
START  
STOP  
0.495

RUN# 18 JUN 22, 1992 10:34:37

AREA%  
RT AREA TYPE WIDTH WREK%  
.495 14869800 SPB .036 100.00000

TOTAL AREA=1.4870E+07  
MUL FACTOR=1.0000E+00

*ALM 011031 309 ppm  
METHANE @ 11031*

\* RUN # 19 JUN 22, 1992 10:37:58 19 ALM 011031 309 ppm  
START  
STOP  
0.488

RUN# 19 JUN 22, 1992 10:37:58

AREA%  
RT AREA TYPE WIDTH WREK%  
.499 24665024 >SBB .047 99.92640  
.770 18174 BB .037 .07369

TOTAL AREA=2.4683E+07  
MUL FACTOR=1.0000E+00

*ALM 011031 309 ppm  
METHANE @ 11031*

\* RUN # 20 JUN 22, 1992 10:42:29 20 ALM 011031 309 ppm  
START  
STOP  
0.489

*ALM 011031 309 ppm  
METHANE @ 11031*

RUN# 20 JUN 22, 1992 10:42:29

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.488	24894720	>SPB	.047	99.90269
	.771	24048	BP	.039	.09733

TOTAL AREA=2.4709E+07  
 MUL FACTOR=1.0000E+00

READCO  
 QUEN HEAT TRACE  
 METUANE @ 718 PPM

\* RUN # 21 JUN 22, 1992 10:45:03  
 START



RUN# 21 JUN 22, 1992 10:45:03

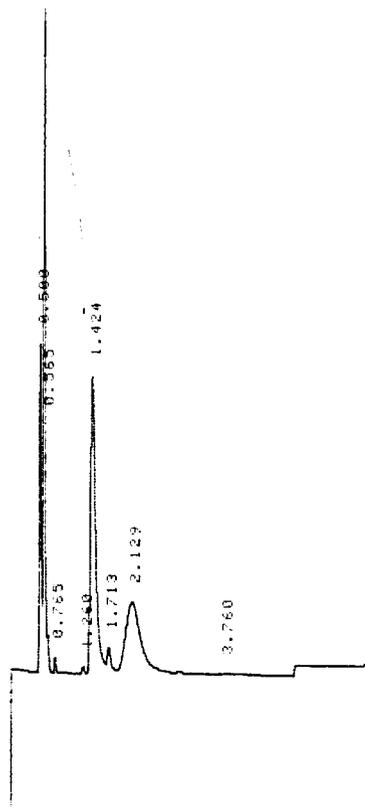
AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.496	23974880	>SHB	.046	99.91194
	.773	21133	BP	.039	.08807

TOTAL AREA=2.3996E+07  
 MUL FACTOR=1.0000E+00

READCO QUEN

\*

\* RUN # 22 JUN 22, 1992 10:49:25  
 START



READCO QUEN BURSTEL-#7

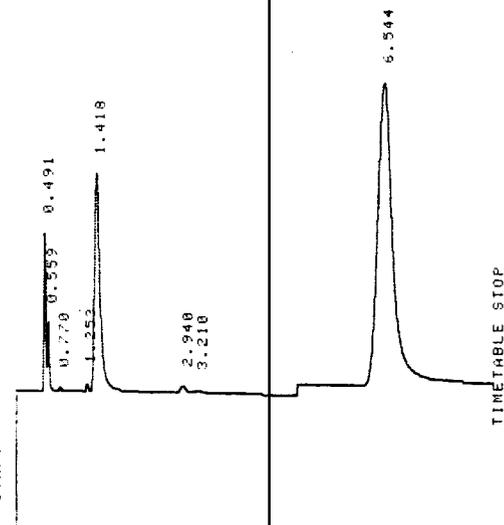
TIMETABLE STOP

RUN# 22 JUN 22, 1992 10:49:25

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.500	449792	PV	.035	7.86434	
.565	973956	VB	.030	17.01871	
.765	20415	BB	.032	.35694	
1.260	19441	BV	.053	.33991	
1.424	1188978	VV	.185	20.78667	
1.713	102060	VV	.094	1.78446	
2.129	941220	VV	.332	16.45666	
3.760	52596	VP	.326	.91961	
6.540	1971626	PB	.388	34.47269	

TOTAL AREA=5719386  
 MUL FACTOR=1.0000E+00

START  
 \* RUN # 23 JUN 22, 1992 10:50:25  
 OVER



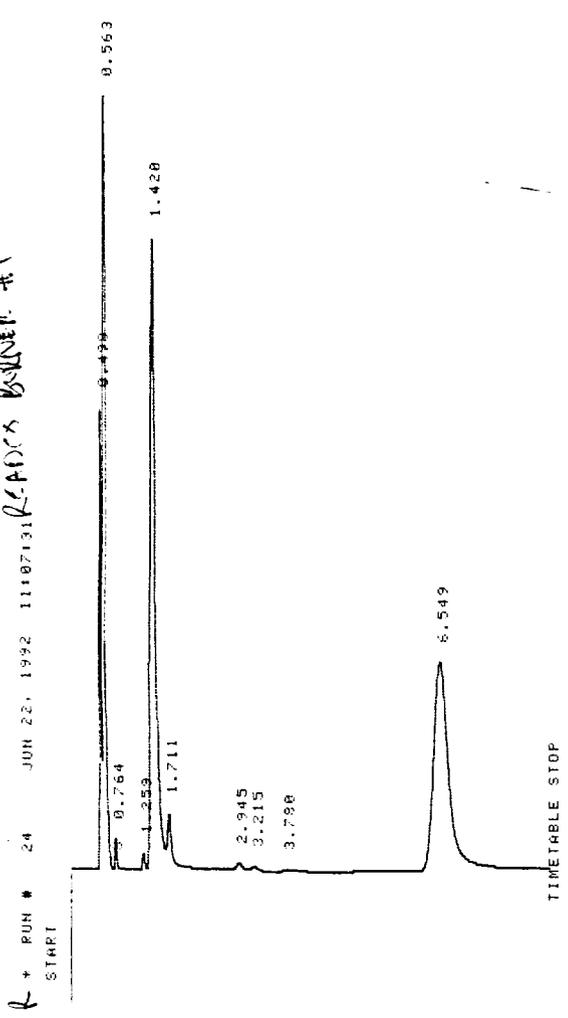
TIMETABLE STOP

RUN# 23 JUN 22, 1992 10:50:25

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.491	240993	VV	.039	4.71727	
.559	103749	VB	.030	2.03001	
1.253	17598	FF	.049	.34643	
1.418	862262	PB	.185	16.87818	
2.940	58027	BV	.180	1.13584	
3.210	32215	VP	.166	.63059	
6.544	3793794	PB	.392	74.26090	

MUL FACTOR=1.0000E+00

*REAR'S BARNER. #1*



RUN# 24 JUN 22, 1992 11:07:31

AREA#	RT	AREA	TYPE	WIDTH	MPER%
1	.498	601009	PH	.034	7.86003
2	.563	1753402	SHB	.037	22.93109
3	.764	48259	BB	.039	.63166
4	1.259	36800	PV	.052	.47876
5	1.420	2473048	VV	.103	32.34267
6	1.711	190886	VB	.090	2.49642
7	2.945	30369	BV	.105	.39715
8	3.215	24899	VP	.116	.32550
9	3.780	52611	PP	.312	.68805
10	6.549	2435277	VB	.311	31.84868

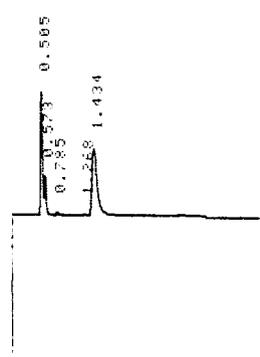
TOTAL AREA=7646397  
MUL FACTOR=1.0000E+00

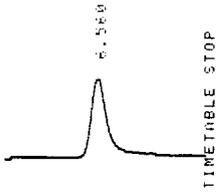
*gymnastics to 000-17*

+L BREAK

*REAR'S BARNER. #1*

R \* RUN # 25 JUN 22, 1992 11:16:41





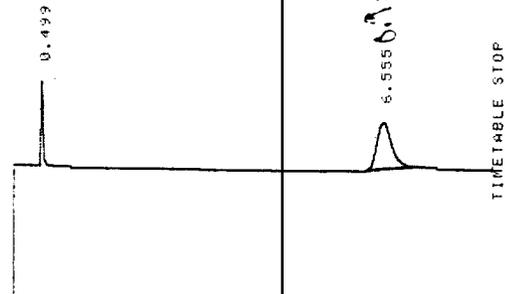
RUN# 25 JUN 22, 1992 11:16:41

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.505	186351	FV	.039	11.33555
	.573	55123	VB	.036	3.35311
	1.434	275861	VB	.106	16.78850
	6.560	1126603	PB	.373	68.53675

TOTAL AREA=1643938  
 MUL FACTOR=1.0000E+00

*Handwritten:* Check good in front of burner space heater case  
 ATM-018872

R \* RUN # 26 JUN 22, 1992 11:27:50

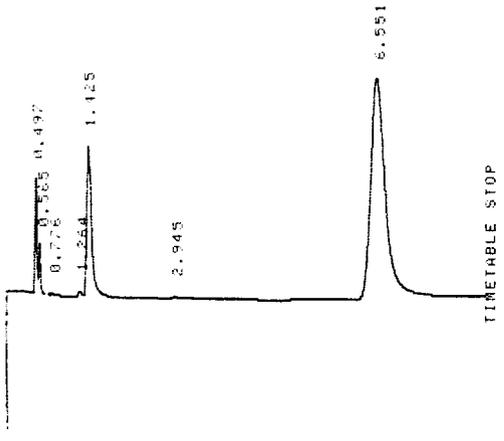


RUN# 26 JUN 22, 1992 11:27:50

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.499	136319	BB	.041	16.35289
	6.555	67289	BB	.306	83.64710

TOTAL AREA= 833608  
 MUL FACTOR=1.0000E+00

T+ RUN # 27 JUN 22, 1992 11:27:00 *REMOVED*

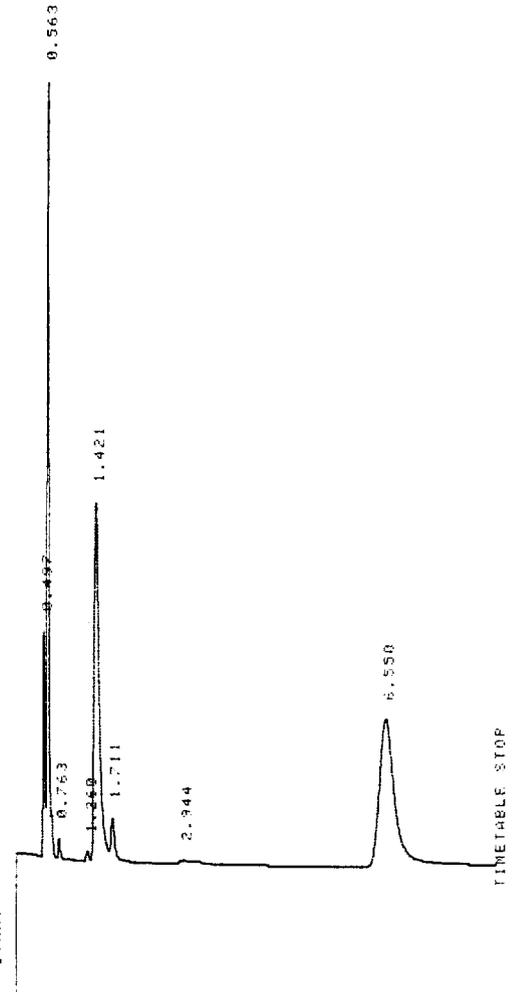


RUN# 27 JUN 22, 1992 11:37:00

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.497	172797	BV	.039	5.13279
	.565	74707	VB	.036	2.21911
	1.264	19200	PV	.066	.57032
	1.425	606090	VB	.104	18.00330
	2.945	10031	VV	.110	.55936
	6.551	2474909	PB	.298	73.51504

TOTAL AREA=3366533  
MUL FACTOR=1.0000E+00

R\* RUN # 28 JUN 22, 1992 11:45:55 *BURNEL-#2*

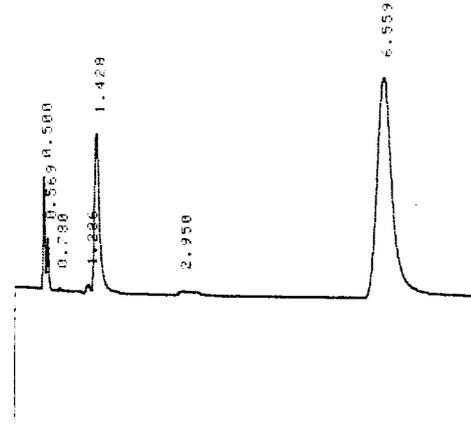


RUN# 29 JUN 22, 1992 11154155

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.497	392213	BV	.035	6.33230
	.563	1151295	VB	.038	24.14988
	.763	32641	PB	.038	.78566
	1.260	26365	PV	.060	.58304
	1.421	1410599	VV	.104	23.58911
	1.711	144003	VB	.084	3.03743
	2.944	36546	BV	.172	.76660
	6.550	1661829	PB	.303	34.85898

TOTAL AREA=4767290  
 MUL FACTOR=1.0000E+00

RUN # 29 JUN 22, 1992 11154145 *REMOVED AREA*  
 START



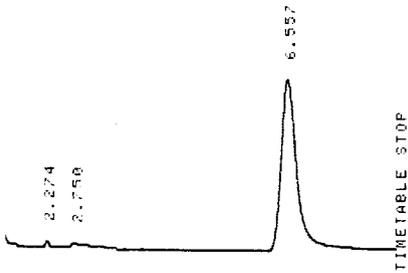
TIME/TABLE STOP

RUN# 29 JUN 22, 1992 11154145

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.500	176965	BV	.040	5.15502
	.569	74251	VB	.037	2.16293
	1.286	25414	PV	.076	.74031
	1.428	631732	VB	.104	18.40236
	2.950	52041	BV	.201	1.51596
	6.559	2472482	PB	.299	72.02342

TOTAL AREA=3432886  
 MUL FACTOR=1.0000E+00

RUN # 30 JUN 22, 1992 12103145 *CHANGE FROM READER TO PETERSON*  
 START



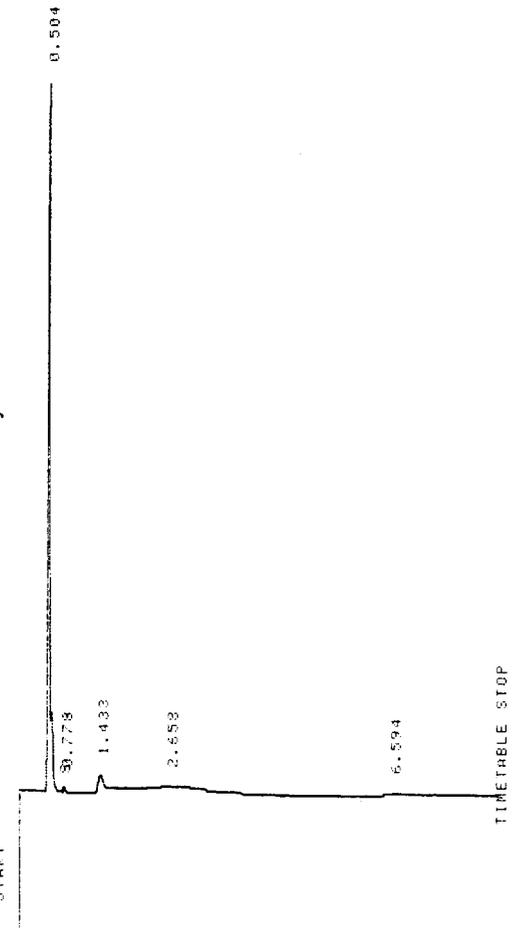
RUN# 30 JUN 22, 1992 12:03:45

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.488	24516016	>SPB	.847	90.02922	
.769	238334	BB	.838	.87522	
1.140	58354	PV	.847	.18491	
1.293	66894	VV	.858	.24565	
1.423	346015	VV	.187	1.27866	
2.274	26941	PV	.881	.09893	
2.750	45866	VV	.152	.16549	
6.557	1941578	PB	.302	7.12998	

TOTAL AREA=2.7231E+07  
 MUL FACTOR=1.0000E+80

*ANNER*

\* RUN # 31 JUN 22, 1992 12:12:45



RUN# 31 JUN 22, 1992 12:12:45

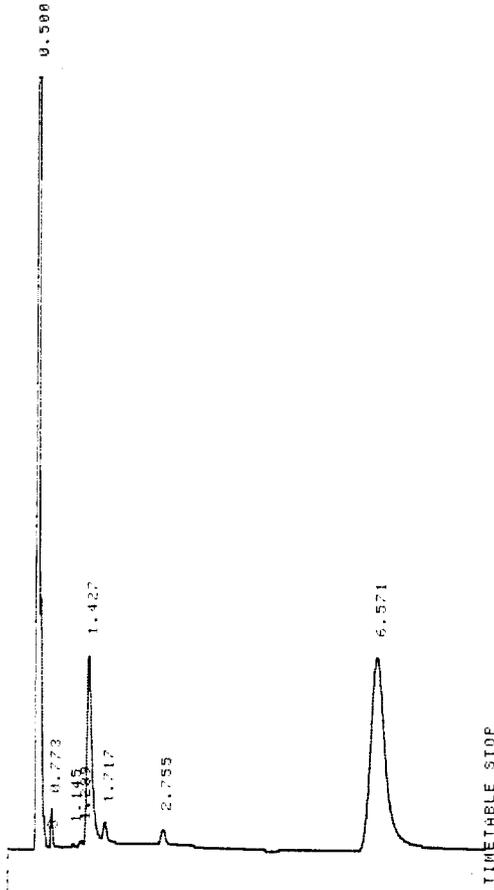
AREA%  
START

RT	AREA	TYPE	WIDTH	AREA%
.504	1075069	SPB	.040	24.29712
.773	12635	BB	.044	.87314
1.423	69097	FB	.192	4.70613
2.658	241108	BF	1.014	16.66278
6.571	50072	FB	.334	3.46078

TOTAL AREA=1446986  
MUL FACTOR=1.0000E+00

R\* RUN # 32 JUN 22. 1992 12121145

START



RUN# 32 JUN 22. 1992 12121145

AREA%  
START

RT	AREA	TYPE	WIDTH	AREA%
.500	690720	SPB	.038	68.37533
.773	58870	BB	.039	.59128
1.289	20580	PV	.072	.20670
1.427	757652	VV	.104	7.60969
1.717	75733	VB	.085	.76065
2.735	56648	BV	.096	.56896
6.571	2179198	FB	.301	21.88740

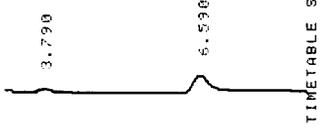
TOTAL AREA=9.9564E+05  
MUL FACTOR=1.0000E+00

T RUN # 33 JUN 22. 1992 12121125

START

START





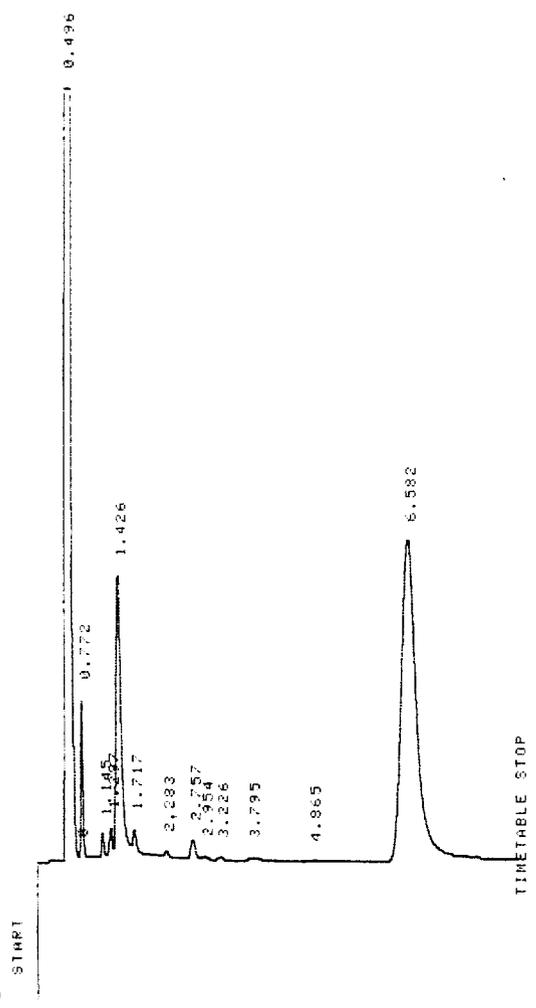
TIMETABLE STOP

RUN# 33 JUN 22, 1992 12:31:25

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.496	27861104	SPB	.054	96.28714
	.775	310854	BB	.039	1.10195
	1.148	65752	VV	.050	.22724
	1.301	89516	VV	.061	.30936
	1.432	185409	VV	.115	.64877
	2.284	29561	BP	.073	.10216
	2.759	18709	PP	.085	.06466
	3.790	56076	FB	.259	.19380
	6.530	310464	VB	.450	1.07295

TOTAL AREA=2.8935E+07  
 MUL FACTOR=1.0000E+00

*R* \* RUN # 34 JUN 22, 1992 12:40:25 *OVER*



TIMETABLE STOP

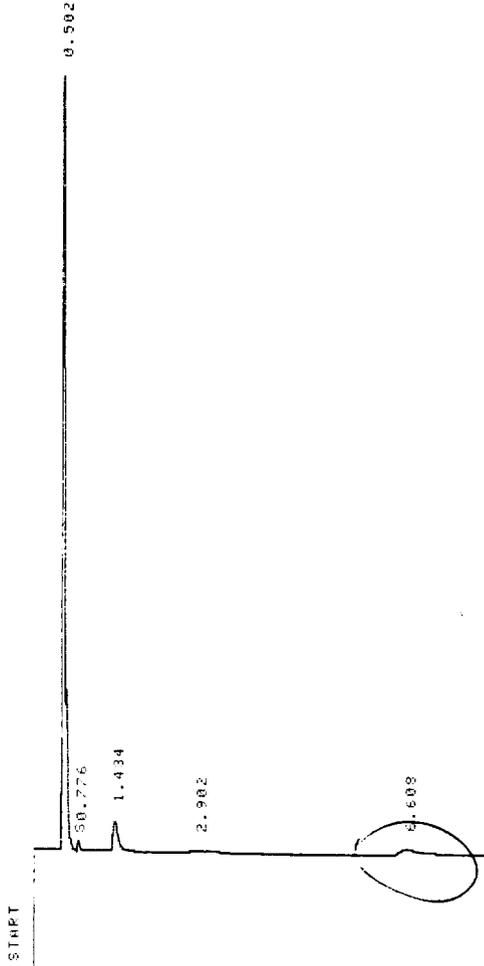
RUN# 34 JUN 22, 1992 12:40:25

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	0.496				
	0.772				
	1.145				
	1.426				
	1.717				
	2.1283				
	2.2757				
	2.954				
	3.226				
	3.795				
	4.865				
	6.582				

.772	229995	BB	.038	.77194
1.145	49224	VV	.049	.15534
1.297	78589	VV	.068	.26398
1.426	1125104	VV	.107	3.82624
1.717	143142	VV	.127	.48093
2.283	29535	VB	.090	.09341
2.757	27417	BV	.097	.26004
2.954	23462	VV	.110	.07861
3.226	26384	VF	.132	.08862
3.795	51542	PV	.230	.17313
6.592	368958	PB	.300	12.12580

TOTAL AREA=2.9771E+07  
 MUL FACTOR=1.0000E+00

*POWER*  
 \* RUN # 35 JUN 22. 1992 12149125

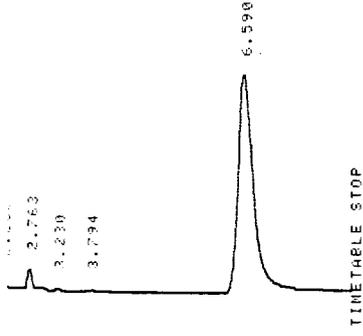


RT	AREA	TYPE	WIDTH	AREA%
.502	2387022	SB	.048	89.36490
.776	20055	BB	.043	.76816
1.434	146463	VP	.118	5.60991
2.902	55150	BV	.393	2.11239
6.608	82100	BB	.329	3.14464

TOTAL AREA=2610790  
 MUL FACTOR=1.0000E+00

\* RUN # 36 JUN 22. 1992 12158125  
 START



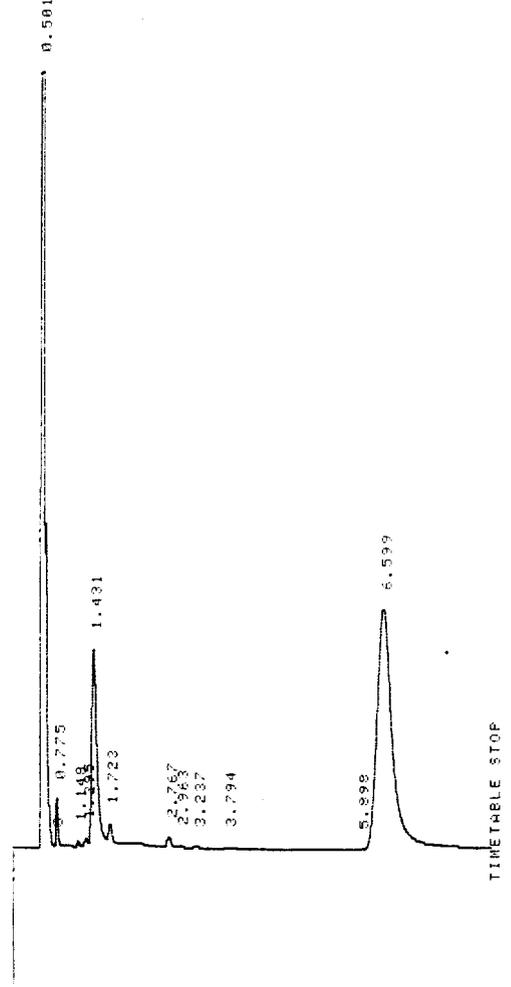


RUN# 36 JUN 22, 1992 12:58:25

RT	AREA%	W	H	T	Y	M	W	M	A
0.496	27.40336	>	SBB	.053	87.03091				
0.775	318.753	BB	.039	1.01077					
1.147	73064	VV	.049	.23169					
1.300	101021	VV	.061	.32034					
1.430	865136	VV	.108	2.74335					
1.720	89358	VB	.137	.28526					
2.286	36116	PP	.082	.11452					
2.763	76478	BY	.097	.24251					
3.230	17787	PP	.117	.05540					
3.794	40868	PV	.231	.12959					
6.590	2468205	PB	.303	7.82669					

TOTAL AREA=3.15336E+07  
MUL FACTOR=1.0000E+00

R \* RUN # 37 JUN 22, 1992 13:09:10 *OPEN*



START

0.501

AREA#	RT	AREA TYPE	WIDTH	AREA
	.501	388	.038	69.62686
	.775	BB	.039	50390
	1.148	FF	.044	10452
	1.295	FV	.072	21878
	1.431	VV	.104	6.37814
	1.723	VB	.081	55141
	2.767	FV	.095	35820
	2.963	VV	.104	13752
	3.237	VP	.127	16889
	3.794	FV	.204	24389
	5.898	PB	.375	35939
	6.599	PB	.303	22.20251

TOTAL AREA=1.2207E+07  
MUL FACTOR=1.0000E+00

*Back*



\* RUN # 38 JUN 22, 1992 13:17:15

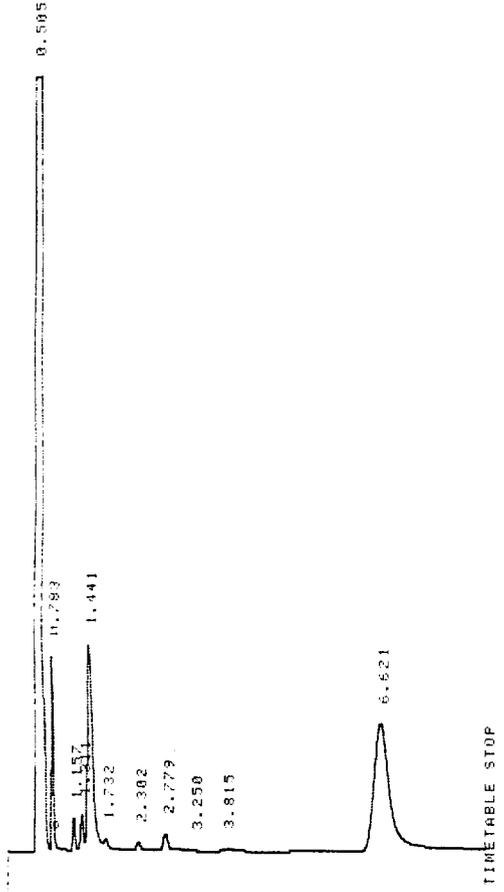
RUN# 38 JUN 22, 1992 13:17:15

AREA#	RT	AREA TYPE	WIDTH	AREA
	.496	388	.061	95.61890
	.791	TBP	.039	1.35962
	.982	TFV	.047	83685
	1.155	TVV	.050	31372
	1.310	TVV	.059	39872
	1.440	TVB	.133	50217
	2.298	BB	.077	14227
	2.774	BV	.121	15213
	3.803	FV	.268	18073
	6.624	PB	.477	1.31986

TOTAL AREA=3.3931E+07  
MUL FACTOR=1.0000E+00

R \* RUN # 39 JUN 22, 1992 13:26:15 QUEN

STMP1



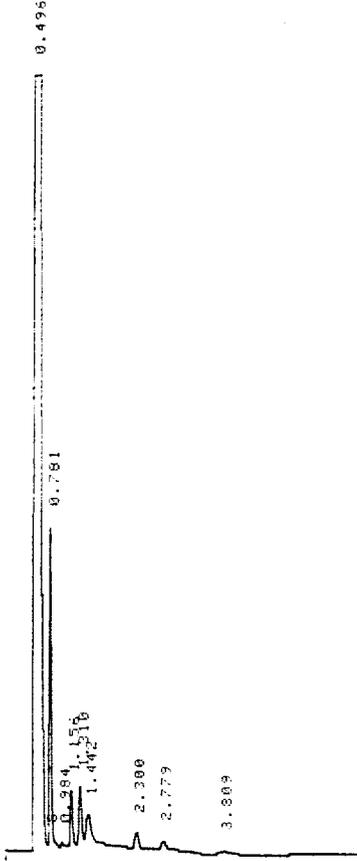
RUN# 39 JUN 22, 1992 13:26:15

RT	AREA	TYPE	WIDTH	AREA%
.505	26562480	>SHD	.051	89.66461
.793	289075	BB	.039	.97581
1.157	61600	PV	.047	.20794
1.311	85587	VV	.060	.28891
1.441	823595	VV	.106	2.79781
1.732	51070	VV	.103	.17239
2.302	30948	PB	.080	.10447
2.779	69658	BY	.100	.23180
3.250	19739	VP	.133	.66563
3.815	61465	PP	.282	.20748
6.621	1565846	VB	.325	5.28299

TOTAL AREA=2.9624E+07  
MUL FACTOR=1.0000E+00

X \* RUN # 40 JUN 22, 1992 13:35:15 QUEN

START



0.496

0.0000  
TIMETABLE STOP

RUN# 40 JUN 22, 1992 13:35:15

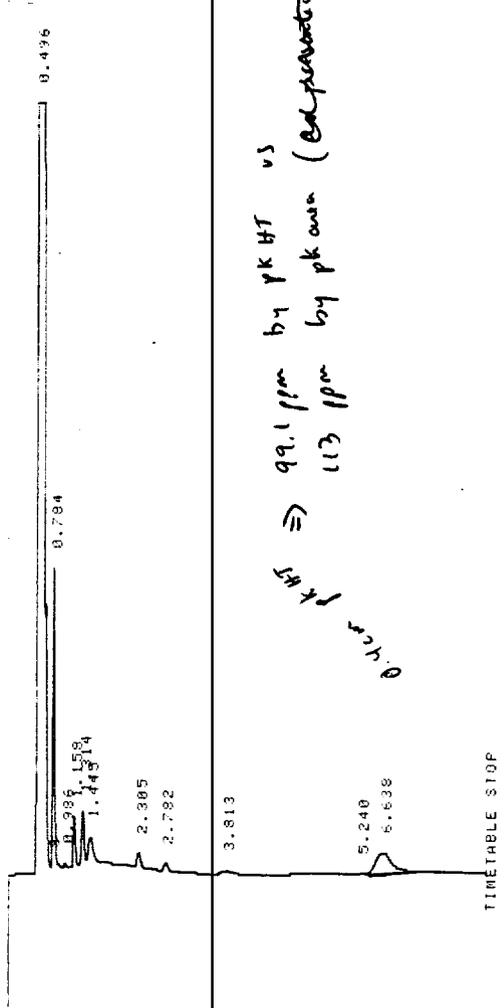
AREA#

RT	AREA	TYPE	WIDTH	AREA%
.496	32329528	>SBB	.062	95.68480
.791	468210	BB	.030	1.38579
.994	10856	BV	.045	.03243
1.156	106267	VV	.050	.31453
1.310	132285	VV	.058	.39301
1.442	157570	VB	.126	.46637
2.300	53894	PP	.082	.15948
2.779	65457	BB	.155	.19374
3.989	60393	PV	.262	.17875
5.259	123198	PV	.076	.36464
6.635	279247	VB	.384	.82651

TOTAL AREA=3.3786E+07  
MUL FACTOR=1.0000E+00

*BURNER*

T \* RUN # 41 JUN 22, 1992 13:45:00  
START



*0.496 PK HT*  
*⇒ 99.1 ppm by PK HT vs*  
*113 ppm by PK area (calculated)*

RUN# 41 JUN 22, 1992 13:45:00

AREA#

RT	AREA	TYPE	WIDTH	AREA%
.496	31969280	>SBB	.061	95.69270
.794	449050	BB	.039	1.34413
.996	11126	BP	.044	.03330
1.158	97695	PV	.048	.29243
1.314	121829	VV	.056	.36467
1.445	126668	VB	.118	.40969

TIMETABLE STOP

2.782 34243 BP .894 .10250  
 3.913 59258 PV .255 .17738  
 5.240 151966 PV .850 .45488  
 6.639 327645 VB .381 .98073

TOTAL AREA=3.3408E+07  
 MUL FACTOR=1.0000E+00

*Q*\* RUN # 42 JUN 22, 1992 13154100  
 START  
 STOP  
 0.585  
 AREA% RT AREA TYPE WIDTH AREA%  
 .595 30107680 >SBB .058 99.49621  
 .790 151845 BB .030 .50181  
 TOTAL AREA=3.0268E+07  
 MUL FACTOR=1.0000E+00

*Q*\* RUN # 42 JUN 22, 1992 13154100  
 START  
 STOP  
 0.790  
 AREA% RT AREA TYPE WIDTH AREA%  
 .496 30032296 >SBB .058 99.48467  
 .783 155685 BB .030 .51534  
 TOTAL AREA=3.0195E+07  
 MUL FACTOR=1.0000E+00

*Y*\* RUN # 43 JUN 22, 1992 13156100  
 START  
 STOP  
 0.496  
 AREA% RT AREA TYPE WIDTH AREA%  
 .496 30032296 >SBB .058 99.48467  
 .783 155685 BB .030 .51534  
 TOTAL AREA=3.0195E+07  
 MUL FACTOR=1.0000E+00

*Y*\* RUN # 44 JUN 22, 1992 14102100  
 START  
 STOP  
 0.514  
 2.328

0.585

0.790

STOP

RUN# 42 JUN 22, 1992 13154100

AREA% RT AREA TYPE WIDTH AREA%  
 .595 30107680 >SBB .058 99.49621  
 .790 151845 BB .030 .50181

TOTAL AREA=3.0268E+07  
 MUL FACTOR=1.0000E+00

*Y*\* RUN # 43 JUN 22, 1992 13156100  
 START  
 STOP  
 0.783  
 AREA% RT AREA TYPE WIDTH AREA%  
 .496 30032296 >SBB .058 99.48467  
 .783 155685 BB .030 .51534  
 TOTAL AREA=3.0195E+07  
 MUL FACTOR=1.0000E+00

*Y*\* RUN # 44 JUN 22, 1992 14102100  
 START  
 STOP  
 0.514  
 2.328

0.783

STOP

RUN# 43 JUN 22, 1992 13156100

AREA% RT AREA TYPE WIDTH AREA%  
 .496 30032296 >SBB .058 99.48467  
 .783 155685 BB .030 .51534

TOTAL AREA=3.0195E+07  
 MUL FACTOR=1.0000E+00

*Y*\* RUN # 44 JUN 22, 1992 14102100  
 START  
 STOP  
 0.514  
 2.328

*Y*\* RUN # 44 JUN 22, 1992 14102100  
 START  
 STOP  
 0.514  
 2.328

0.496

0.2% lower than given

0.514

2.328

5.106

TIMETABLE STOP

RUN# 44 JUN 22, 1992 14102100

WREK

RT	WREK TYPE	WIDTH	WREK%
.514	PB	.043	40.60906
2.328	VV	.562	25.04376
5.106	PB	.608	34.34518

TOTAL WREK=411423  
MUL FACTOR=1.0000E+00

\* RUN # 45 JUN 22, 1992 14111113  
START



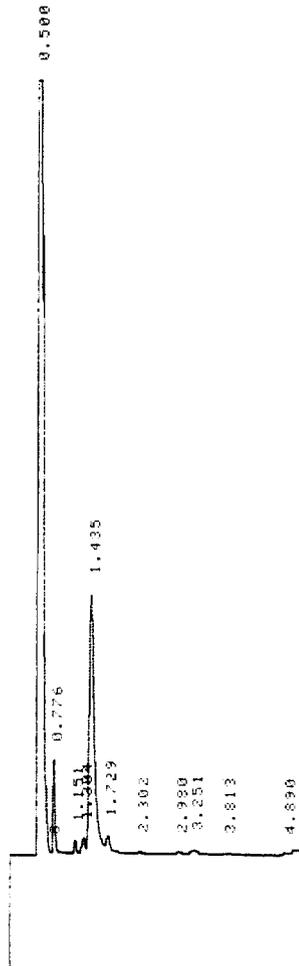
RUN# 45 JUN 22, 1992 14111113

WREK

RT	WREK TYPE	WIDTH	WREK%
.243	PV	.059	82.994
.496	>SHB	.057	99.42086
.780	BB	.038	.49120

TOTAL WREK=2.9845E+07  
MUL FACTOR=1.0000E+00

\* RUN # 46 JUN 22, 1992 14114140  
START



ALMOST 50% WREK @ 1410 GUEST

WATER-CONTAMINATED BLEND

PETERSON OVEN

TIMETABLE STOP

RUN# 46 JUN 22, 1992 14:11:40

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.500	17305976	SBB	.038	77.03357	
.776	148913	BB	.033	.62721	
1.151	26137	PV	.046	.11634	
1.304	44882	VV	.068	.19977	
1.435	1028489	VV	.105	4.57782	
1.729	64694	VB	.090	.28735	
2.302	14148	BP	.082	.06297	
2.980	21442	VV	.118	.09544	
3.251	45394	VV	.164	.20205	
3.813	33419	VV	.218	.14875	
4.890	16370	PV	.146	.07286	
6.633	3723949	VB	.314	16.57534	

TOTAL AREA=2.2467E+07  
MUL FACTOR=1.0000E+00

\* RUN # 47 JUN 22, 1992 14:23:48  
START



RUN# 47 JUN 22, 1992 14:23:48

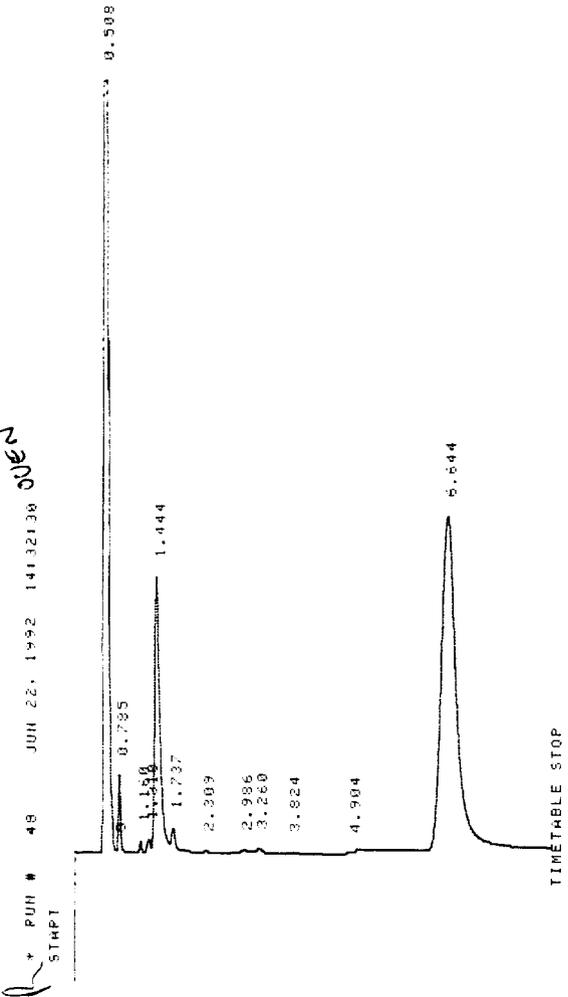
AREA%	RT	AREA	TYPE	WIDTH	AREA%
.505	23930736	SBB	.046	96.26131	
.798	216969	BB	.039	.07276	
1.165	39373	PV	.048	.15930	
1.318	56061	VV	.063	.22551	
1.451	228044	VB	.110	.91731	

TIMETABLE STOP

2.793 37346 VV .165 .15422  
 3.831 63049 FF .292 .25361  
 5.195 141638 FB .742 .56971  
 6.660 135457 BB .329 .58967

TOTAL AREA=2.4858E+07  
 MUL FACTOR=1.0000E+00

*NEW*

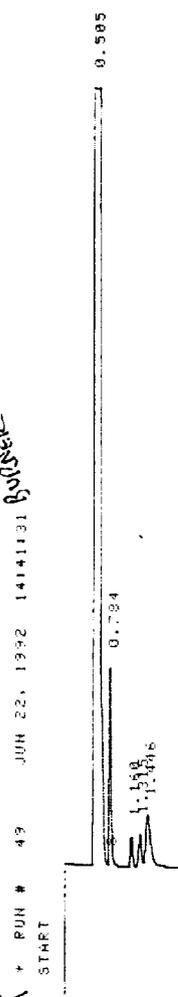


RUN# 48 JUN 22. 1992 14132130

AREA2	RT	AREA	TYPE	WIDTH	AREA3
.589	14003176	SP6	.039	72.80083	
.795	117478	BB	.039	.60471	
1.160	22887	PV	.046	.11328	
1.310	40070	VV	.070	.20626	
1.444	1184768	VV	.105	5.68675	
1.737	93273	VB	.090	.43122	
2.309	11519	FB	.093	.05929	
2.986	19086	BY	.104	.09310	
3.260	31731	VF	.129	.16333	
3.824	27562	PV	.202	.14107	
4.904	18924	PV	.153	.09741	
6.644	3947957	VB	.315	20.32196	

TOTAL AREA=1.9427E+07  
 MUL FACTOR=1.0000E+00

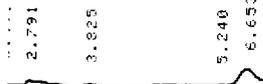
*BUNSER*



RUN# 49 JUN 22. 1992 14141131

AREA2	RT	AREA	TYPE	WIDTH	AREA3
.784	117478	BB	.039	.60471	
1.160	22887	PV	.046	.11328	
1.310	40070	VV	.070	.20626	
1.444	1184768	VV	.105	5.68675	
1.737	93273	VB	.090	.43122	
2.309	11519	FB	.093	.05929	
2.986	19086	BY	.104	.09310	
3.260	31731	VF	.129	.16333	
3.824	27562	PV	.202	.14107	
4.904	18924	PV	.153	.09741	
6.644	3947957	VB	.315	20.32196	

TOTAL AREA=1.9427E+07  
 MUL FACTOR=1.0000E+00



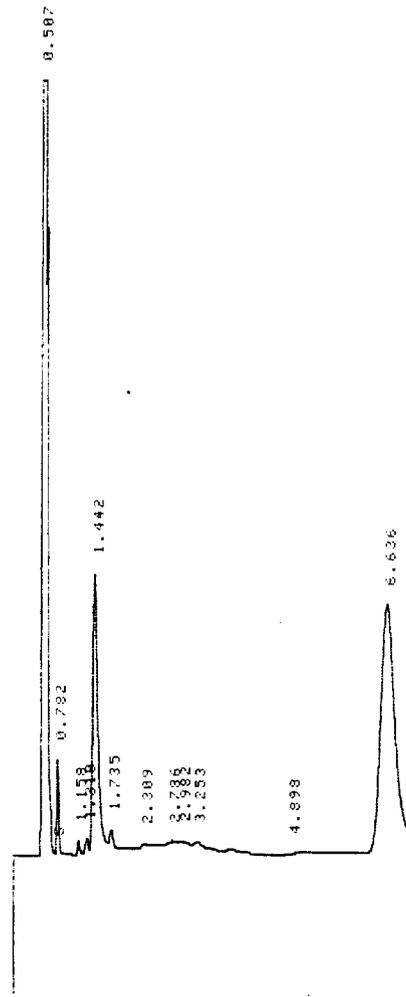
TIMETABLE STOP

RUN# 49 JUN 22, 1992 14:41:31

RT	AREA	TYPE	WIDTH	AREA%
.585	27351456	SPB	.853	96.17587
.784	388195	BB	.039	1.05558
1.160	58185	PV	.047	.20460
1.315	75692	VV	.059	.26967
1.446	203832	VB	.102	.71673
2.389	38370	BB	.081	.18679
2.791	41684	BV	.137	.14629
3.825	51552	PV	.243	.18127
5.240	141329	PB	.779	.49695
6.653	183789	PB	.321	.64626

TOTAL AREA=2.8439E+07  
MUL FACTOR=1.0000E+00

RUN # 50 JUN 22, 1992 14:50:30 *NIK*



TIMETABLE STOP

RUN# 50 JUN 22, 1992 14:50:30

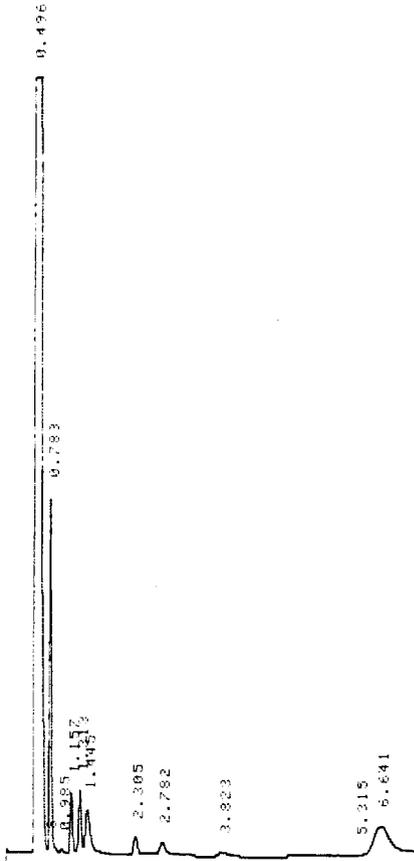
ARENA

RT	AREA	TYPE	WIDTH	AREA2
.587	1765288	SPB	.037	79.42083
.782	141595	BB	.039	.65037
1.158	25672	FP	.045	.11548
1.310	42945	PV	.055	.19318
1.442	1106098	VV	.105	4.97541
1.735	59763	VF	.084	.31981
2.796	60175	BV	.227	.27668
2.982	57643	VV	.175	.25929
3.253	63377	VV	.190	.28508
4.998	20983	PV	.173	.09438
6.636	2893789	VB	.320	13.42157

TOTAL AREA=2.2231E+07  
 MUL FACTOR=1.0000E+00

\* PUN # 51 JUN 22 1992 14159145

START

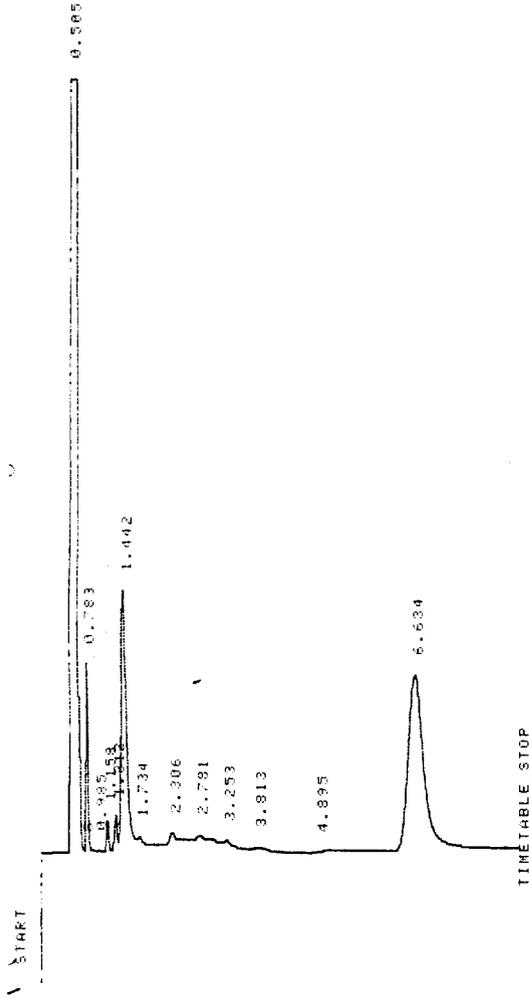


TIMETABLE STOP

PUN# 51 JUN 22 1992 14159145

RT	AREA	TYPE	WIDTH	AREA2
.496	33640224	SPB	.065	94.77846
.783	527269	BB	.039	1.48554
1.157	115948	PV	.048	.32667
1.313	140640	VV	.055	.39624
1.445	192290	VB	.111	.56148
2.305	71607	BV	.093	.208175
2.792	119639	VV	.205	.33707
3.823	66699	FP	.259	.18792
5.315	174914	PV	.874	.49281
6.641	437331	VB	.377	1.29214

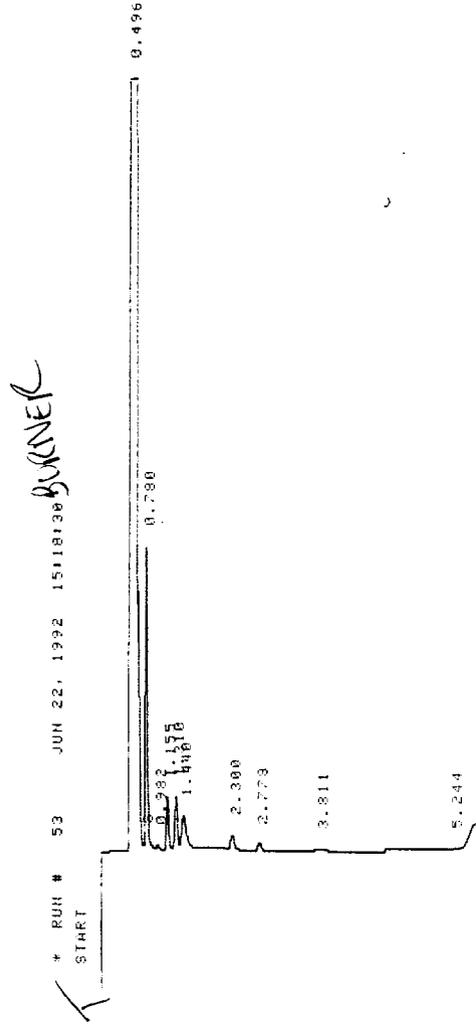
TOTAL AREA=3.5494E+07  
 MUL FACTOR=1.0000E+00



RUN# 52 JUN 22, 1992 15:08:32

RT	AREA	TYPE	WIDTH	AREA%
.585	2662976	SPB	.051	95.45034
.783	283741	BB	.038	.91057
1.158	60289	PV	.047	.19322
1.312	86989	VV	.062	.27916
1.442	1081052	VV	.108	3.46928
1.734	84889	VV	.127	.26968
2.306	247161	VV	.308	.79318
2.781	262889	VV	.358	.84189
3.253	149416	VV	.281	.47950
3.813	102376	VP	.342	.32854
4.895	18584	PV	.160	.05964
6.634	2159163	VB	.326	6.92598

TOTAL AREA=3.1161E+07  
MUL FACTOR=1.0000E+00



RUN# 53 JUN 22, 1992 15:18:30

RT	AREA	TYPE	WIDTH	AREA%
.583	2662976	SPB	.051	95.45034
1.475	283741	BB	.038	.91057
1.780	60289	PV	.047	.19322
2.300	86989	VV	.062	.27916
2.773	1081052	VV	.108	3.46928
3.811	84889	VV	.127	.26968
5.244	247161	VV	.308	.79318
6.634	262889	VV	.358	.84189

TOTAL AREA=3.1161E+07  
MUL FACTOR=1.0000E+00

TIMETABLE STOP

RUN# 53 JUN 22, 1992 15:19:30

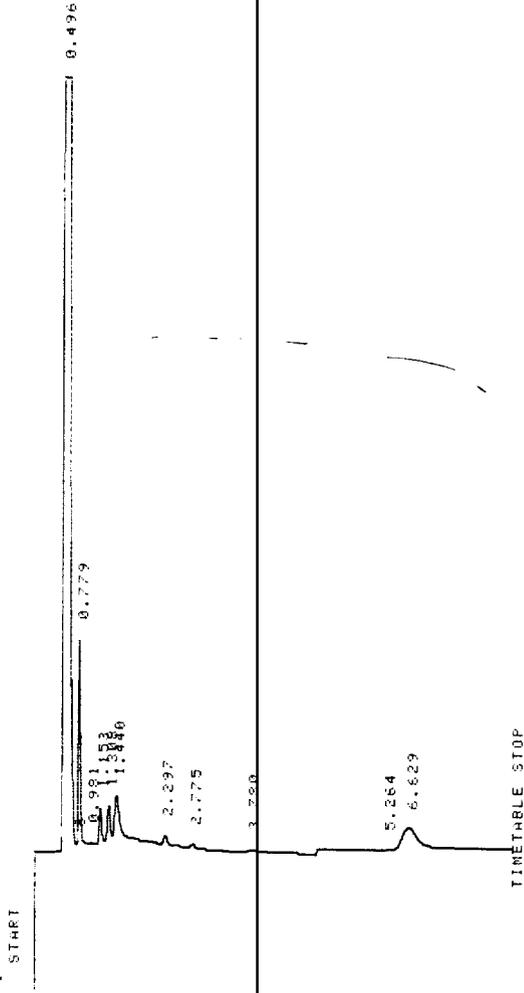
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.496	31340960	SPB	.060	95.29648
.790	432984	BB	.030	1.31655
.982	11037	BP	.045	.03374
1.155	9492	PV	.047	.28884
1.310	113899	VV	.055	.34632
1.440	136627	VB	.105	.41543
2.300	51006	VB	.082	.15509
2.778	35019	BV	.096	.10648
3.811	53254	PV	.254	.16193
5.244	196254	PV	.850	.59674
6.629	421779	VB	.481	1.28248

TOTAL AREA=3.2888E+07  
MUL FACTOR=1.0000E+00

*NIEN*

RUN# 54 JUN 22, 1992 15:12:130



RUN# 54 JUN 22, 1992 15:12:130

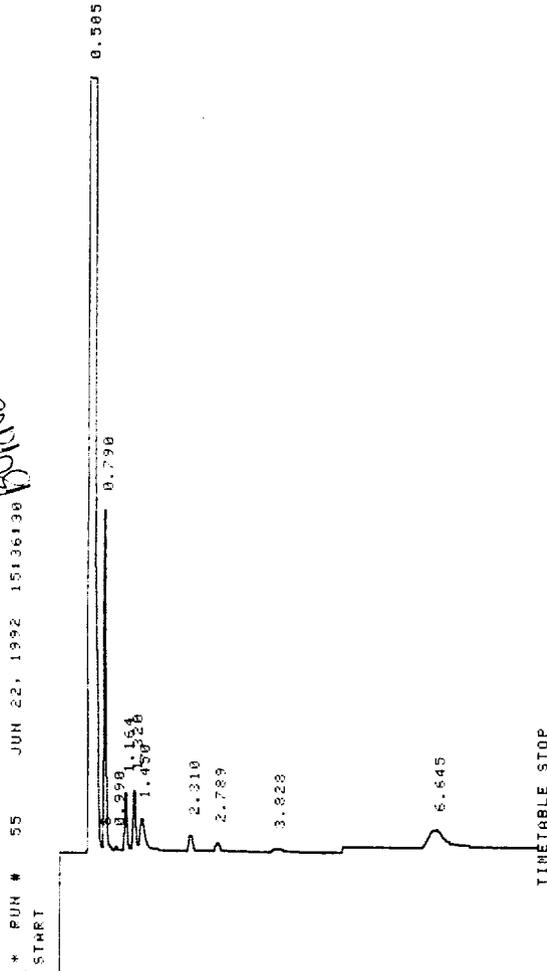
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.496	27477952	SPB	.053	95.16467
.779	299937	BB	.030	1.03670
1.153	73902	VV	.052	.25595
1.308	86363	VV	.062	.33373
1.440	236529	VV	.125	.81917
2.297	31275	BB	.070	.10832
2.775	22457	BP	.062	.07728

5.264 288799 PV .857 .69543  
 6.529 385264 VB .414 1.33428

TOTAL AREA=2.8974E+07  
 MUL FACTOR=1.0000E+00

*Handwritten:* 0.798



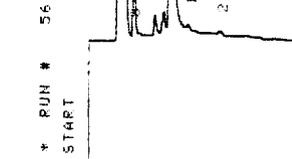
\* RUN # 55 JUN 22, 1992 15136130  
 START

RUN# 55 JUN 22, 1992 15136130

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.505	32937952	>SPB	.063	96.26870	
.798	498231	BB	.038	1.43281	
.998	18054	PP	.043	.02239	
1.164	108213	PV	.048	.31628	
1.320	132761	VV	.056	.38882	
1.458	145784	VB	.113	.42589	
2.310	55802	PB	.091	.15368	
2.789	39248	PB	.096	.11459	
3.828	64868	PV	.266	.18957	
6.545	229527	PB	.321	.57095	

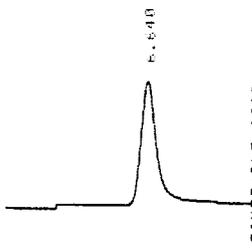
TOTAL AREA=3.4215E+07  
 MUL FACTOR=1.0000E+00

*Handwritten:* 0.798



\* RUN # 56 JUN 22, 1992 15145130  
 START

*Handwritten:* 0.513



TIMETABLE STOP

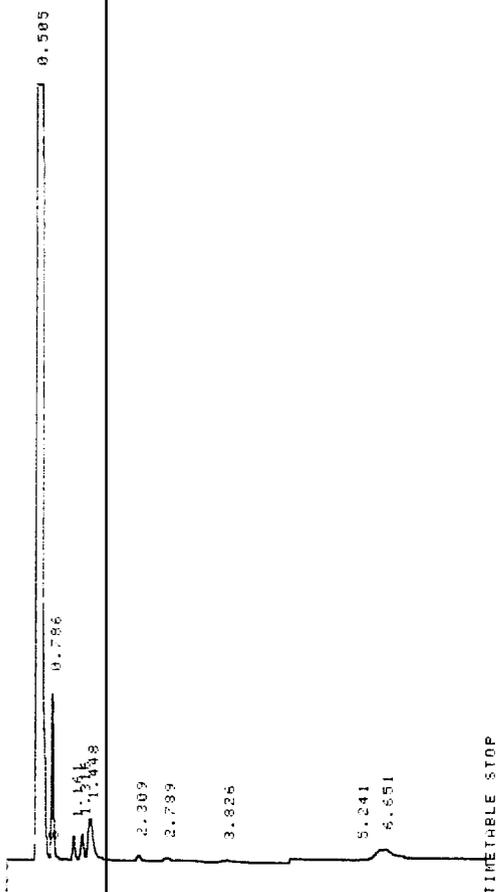
RUN# 56 JUN 22, 1992 15:45:30

AREA:

RT	AREA	TYPE	WIDTH	AREA%
.513	21374048	>SBB	.041	88.47382
.798	180162	BB	.039	.74575
1.165	46136	VV	.056	.13097
1.320	65937	VV	.069	.27293
1.450	66268	VV	.111	2.74133
1.741	92684	VV	.187	.36365
2.311	26386	VB	.099	.10922
3.847	39257	PB	.258	.16250
6.640	1671743	VB	.358	6.91987

TOTAL AREA=2.4159E+07  
MUL FACTOR=1.0000E+00

*Test* RUN # 57 JUN 22, 1992 15:54:30 *Good*



TIMETABLE STOP

RUN# 57 JUN 22, 1992 15:54:30

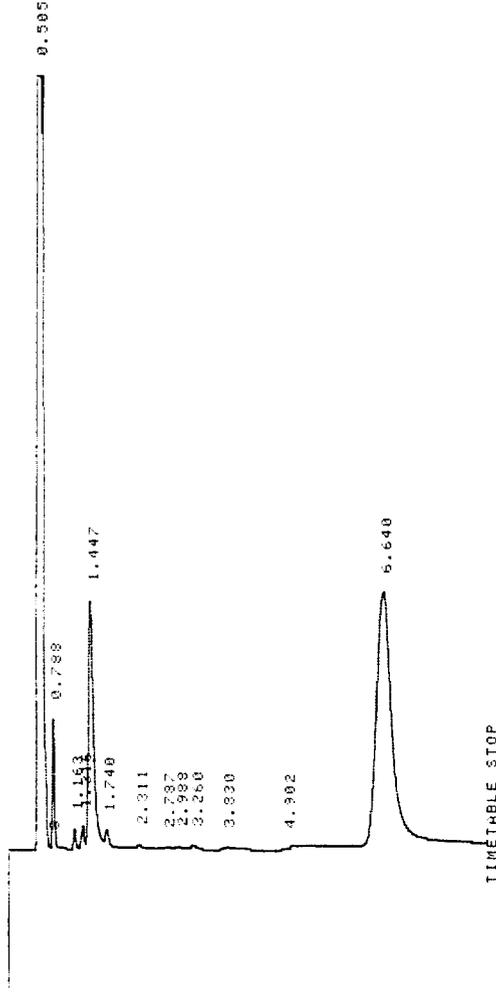
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.505	25170000	>SBB	.049	96.36659
.786	249116	BB	.039	.94394

1.316	65587	VV	.062	.25453
1.448	195736	VB	.111	.71111
2.309	28470	VV	.094	.10300
2.789	39932	VV	.171	.15311
3.826	49487	PV	.266	.18533
5.241	161799	PB	.787	.61943
6.551	121654	BB	.309	.46577

TOTAL AREA=2.6119E+07  
MUL FACTOR=1.0000E+00

START  
JUN 22, 1992 16103130  
0.585

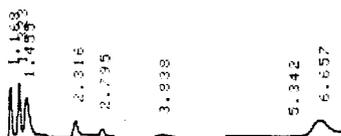


PUN# 59 JUN 22, 1992 16103130

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.505	22660752	>SHB	.044	83.12109	
.789	192934	BB	.038	.70733	
1.163	37687	PV	.047	.13824	
1.316	59692	VV	.065	.21895	
1.447	994483	VV	.105	3.64783	
1.740	68569	VB	.088	.24418	
2.311	19391	BY	.092	.07339	
2.787	25181	VV	.142	.09237	
2.998	24610	VV	.126	.09027	
3.260	34955	VB	.145	.12822	
3.830	54395	BB	.298	.19952	
6.540	3091214	VB	.324	11.33877	

TOTAL AREA=2.7262E+07  
MUL FACTOR=1.0000E+00

START  
JUN 22, 1992 16113100  
0.585



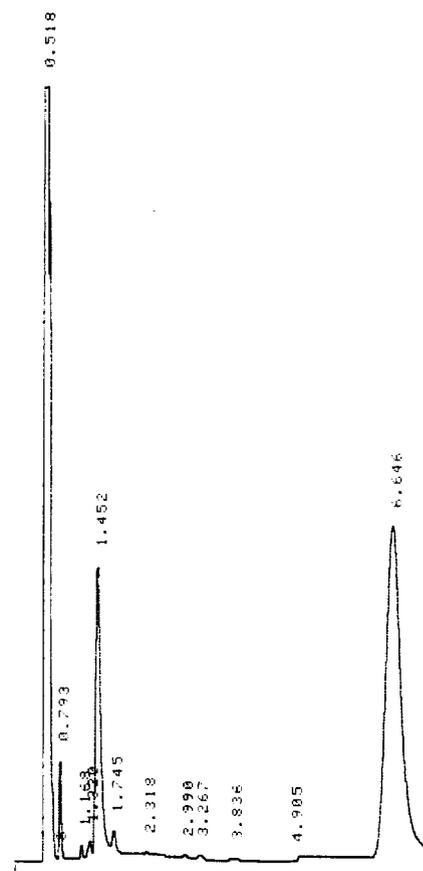
RUN# 59 JUN 22, 1992 16113100

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.505	3201000	>SPB	.062	96.11907	
.793	444831	BB	.039	1.33573	
1.168	94320	PV	.047	.28322	
1.323	115816	VV	.056	.34777	
1.455	159875	VB	.104	.47767	
2.316	55576	PB	.089	.16688	
2.795	33447	BP	.094	.18043	
3.838	68109	PV	.267	.28452	
5.342	135753	PB	.838	.48764	
6.557	185526	PB	.322	.55709	

TOTAL AREA=3.3303E+07  
MUL FACTOR=1.0000E+00

OVEN

RUN # 60 JUN 22, 1992 16122100



TOTAL AREA=3.3303E+07  
MUL FACTOR=1.0000E+00

RUN# 60 JUN 22, 1992 16122100

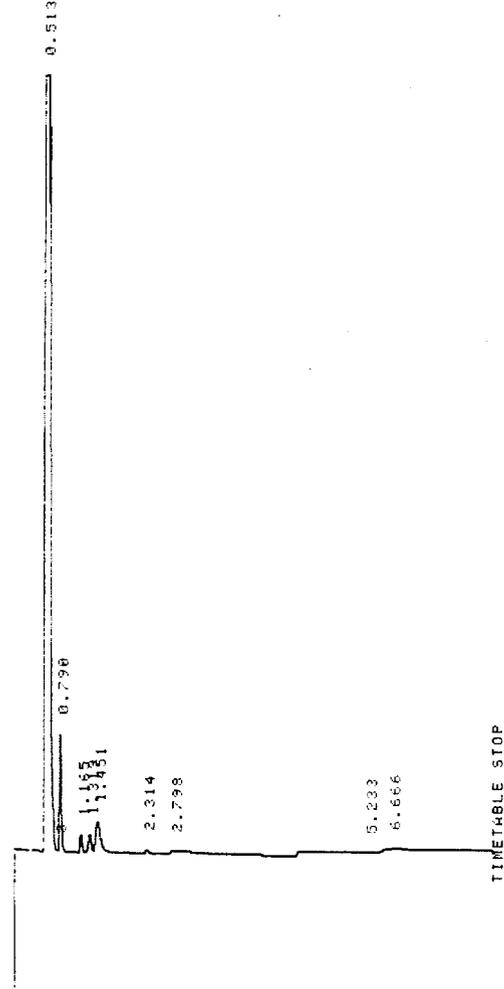
AREA#	RT	AREA	TYPE	WIDTH	AREA%
.518	18197600	588		.830	76.83862
.793	148198	BB		.039	.62572
1.168	26527	PV		.845	.11281
1.320	48340	VV		.068	.20411
1.452	1149907	VV		.105	4.85544
1.745	83656	VB		.085	.35323
2.318	17534	BV		.101	.87404
2.990	19741	VV		.107	.88336
3.267	38899	VP		.126	.13847
3.836	44346	PV		.232	.18725
4.905	10804	PV		.140	.84562
6.646	3385350	VB		.315	16.49019

TOTAL AREA=2.3683E+07  
 MUL FACTOR=1.0000E+00

*ANNER*

\* RUN # 61 JUN 22, 1992 16131100

START



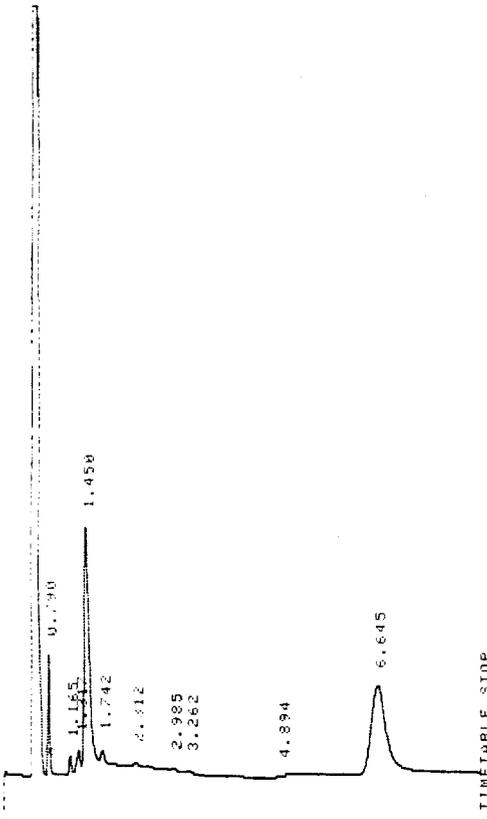
RUN# 61 JUN 22, 1992 16131100

AREA#	RT	AREA	TYPE	WIDTH	AREA%
.513	20849520	>SPB		.040	97.00742
.790	177129	BB		.039	.82482
1.165	36495	PV		.048	.16994
1.319	49700	VV		.060	.23143
1.451	148490	VB		.113	.59146
2.314	19150	BP		.081	.88452
5.233	134155	PB		.794	.62470
6.666	61368	BB		.339	.28576

TOTAL AREA=2.1475E+07  
 MUL FACTOR=1.0000E+00

RUN # 62 JUN 22, 1992 16140100  
 START

0.513



RUN # 62 JUN 22, 1992 16140100

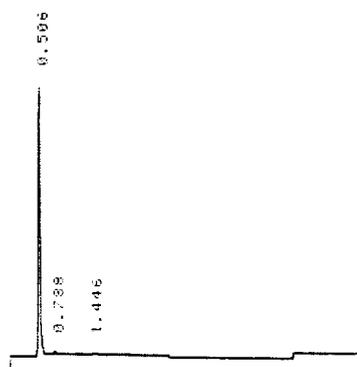
RT	AREA	TYPE	WIDTH	MREZ
.513	21113616	SPB	.041	88.67872
.798	178306	BB	.038	.75142
1.165	35276	PV	.047	.14816
1.317	60553	VV	.068	.25433
1.450	98513	VV	.106	4.14468
1.742	75140	VB	.098	.31559
2.312	29325	BV	.123	.12317
2.985	28981	VV	.117	.10038
3.262	26601	VF	.122	.89913
4.894	21242	PV	.175	.88922
6.645	1268775	VB	.375	5.29534

END RUN

TOTAL AREA=2.3889E+07  
 MUL FACTOR=1.0000E+00

ALUM-018821  
 BACKED-LINE

JUN 22, 1992 1615212500  
 START



TIMETABLE STOP

6.637 V.I.  
TOP  
6.637 V.I.  
6.637 V.I.

6.637 V.I.  
TIME TABLE STOP

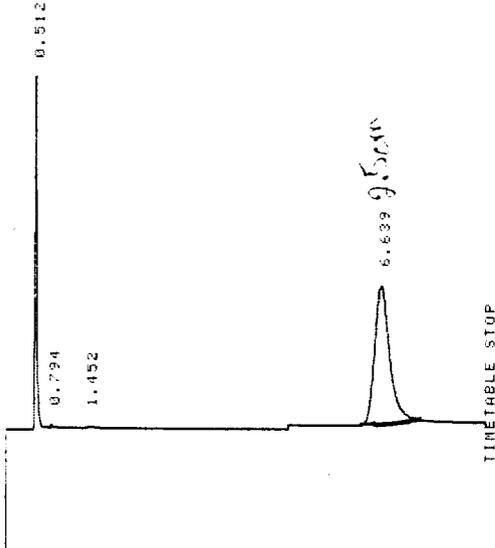
RUN# 63 JUN 22, 1992 16152125

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.586	384116	VB	.038	29.35875
	1.446	16633	PB	.112	1.27129
	6.637	987604	PB	.449	69.36995

TOTAL AREA=138833  
MUL FACTOR=1.0000E+00

TOTAL

\* RUN # 64 JUN 22, 1992 17104140  
START



ATM-20-20  
BANKER CINC  
ATM-20-20

RUN# 64 JUN 22, 1992 17104140

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.512	493905	PB	.037	20.69837
	1.452	20576	VB	.125	.96229
	6.639	187121	PB	.359	78.43933

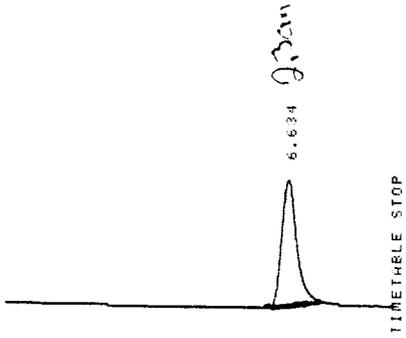
TOTAL AREA=2386202  
MUL FACTOR=1.0000E+00

TOTAL

\* RUN # 65 JUN 22, 1992 17110121  
START



ATM-07-11-91  
ATM-07-11-91  
ATM-07-11-91



RUN# 65 JUN 22, 1992 17:18:21

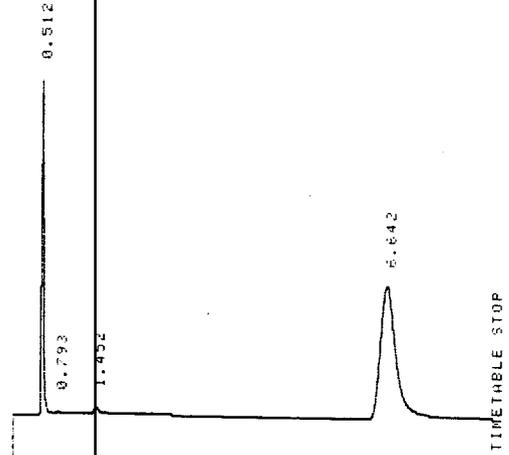
AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.500	430708	VB	.039	21.94677
	.783	10745	BB	.052	.54751
	1.440	14398	PP	.098	.76422
	6.634	1508051	PB	.312	76.74147

TOTAL AREA=1962512  
MUL FACTOR=1.0000E+00

*Handwritten notes:*  
 Original @ 10/20/92  
 17:18:21  
 Open file  
 17:18:21

*Handwritten initials:* J200

RUN# 66 JUN 22, 1992 17:30:56



RUN# 66 JUN 22, 1992 17:30:56

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.512	480296	BB	.038	23.68543

6.642 1517864 FB .303 74.74493

TOTAL AREA=2030725  
MUL FACTOR=1.0000E+00

*Area* \* RUN # 67 JUN 22, 1992 17:43:10 *85.7 CH1 OPEN HEAD TOWER*



RUN# 67 JUN 22, 1992 17:43:10

AREA%	RT	AREA TYPE	WIDTH	AREA%
.505	3421128	SHB	.037	100.00000

TOTAL AREA=3421128  
MUL FACTOR=1.0000E+00

*TRIG* \* RUN # 68 JUN 22, 1992 17:45:30 *85.7 CH1 BURST W/ TOWER 11-2-2016*



RUN# 68 JUN 22, 1992 17:45:30

AREA%	RT	AREA TYPE	WIDTH	AREA%
.512	3353726	SPB	.037	100.00000

TOTAL AREA=3353726  
MUL FACTOR=1.0000E+00

*TRIG* \* RUN # 69 JUN 22, 1992 17:48:50 *85.7 CH1 BURST*



RUN# 69 JUN 22, 1992 17:48:50

AREA%	RT	AREA TYPE	WIDTH	AREA%
.509	8033040	SHB	.036	83.97363
.990	1533105	BY	.317	16.02636

TOTAL AREA=9.5661E+06  
MUL FACTOR=1.0000E+00

\* RUN # 70 JUN 22, 1992 17:51:00  
 START 0.793 STOP 0.510

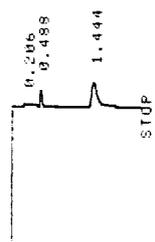
RUN# 70 JUN 22, 1992 17:51:00

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.510	8030048	SPB	.037	99.86334
	.793	10515	BP	.047	.13664

TOTAL AREA=8040563  
 MUL FACTOR=1.0000E+00

*ACETIC ACID  
 12.11.19  
 AAC*

\* RUN # 71 JUN 22, 1992 17:56:16  
 START



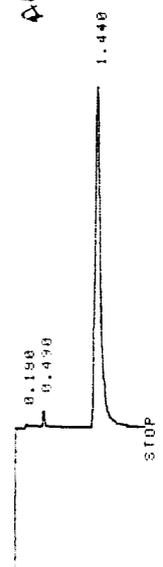
RUN# 71 JUN 22, 1992 17:56:16

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.488	28746	BB	.040	19.40109
	1.444	119421	PB	.118	80.59894

TOTAL AREA=148167  
 MUL FACTOR=1.0000E+00

*ACETIC ACID  
 14.11.11  
 AAC*

\* RUN # 72 JUN 22, 1992 18:01:21  
 START

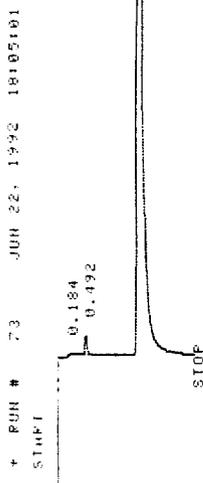


RUN# 72 JUN 22, 1992 18:01:21

AREA%	RT	AREA	TYPE	WIDTH	AREA%
	.190	11795	BB	.066	.93879
	.490	30093	BB	.042	2.14157
	1.440	136323	PB	.106	97.01962

TOTAL AREA=140497  
 MUL FACTOR=1.0000E+00

82.5 ppm AESTRACERIDE  
 A111-000113



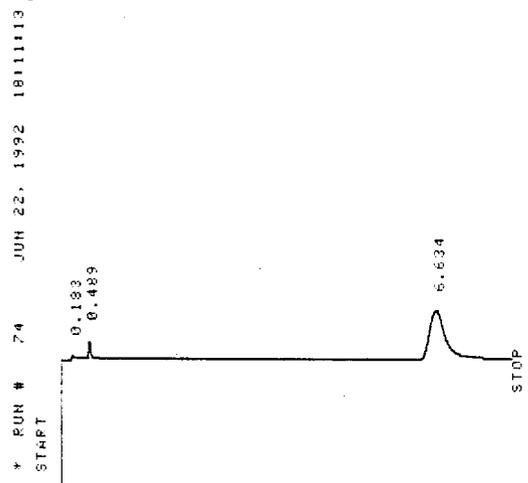
\* RUN # 73 JUN 22, 1992 18105101  
 START

RUN# 73 JUN 22, 1992 18105101

RT	AREA	TYPE	WIDTH	AREA%
.492	35679	BB	.045	1.25059
1.436	2817298	PB	.104	98.74941

TOTAL AREA=2852978  
 MUL FACTOR=1.0000E+00

82.5 ppm AESTRACERIDE  
 A111-011708



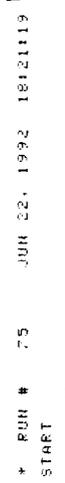
\* RUN # 74 JUN 22, 1992 18111113  
 START

RUN# 74 JUN 22, 1992 18111113

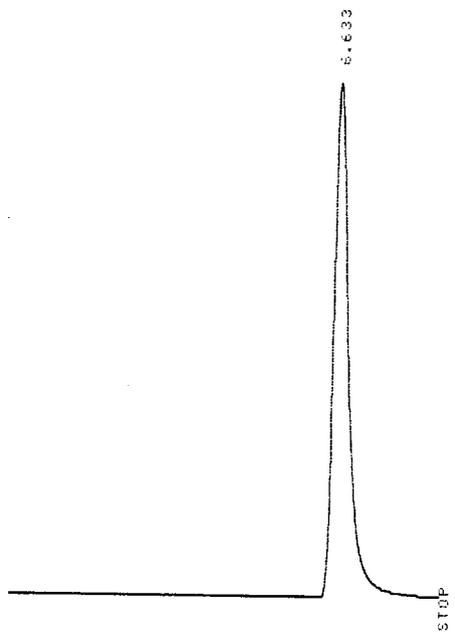
RT	AREA	TYPE	WIDTH	AREA%
.193	11433	BB	.060	1.81710
.489	28292	BB	.042	4.49657
6.634	589466	PB	.322	93.68634

TOTAL AREA= 629191  
 MUL FACTOR=1.0000E+00

82.5 ppm AESTRACERIDE  
 A111-011708



\* RUN # 75 JUN 22, 1992 18121119  
 START



RUN# 75 JUN 22, 1992 18121119

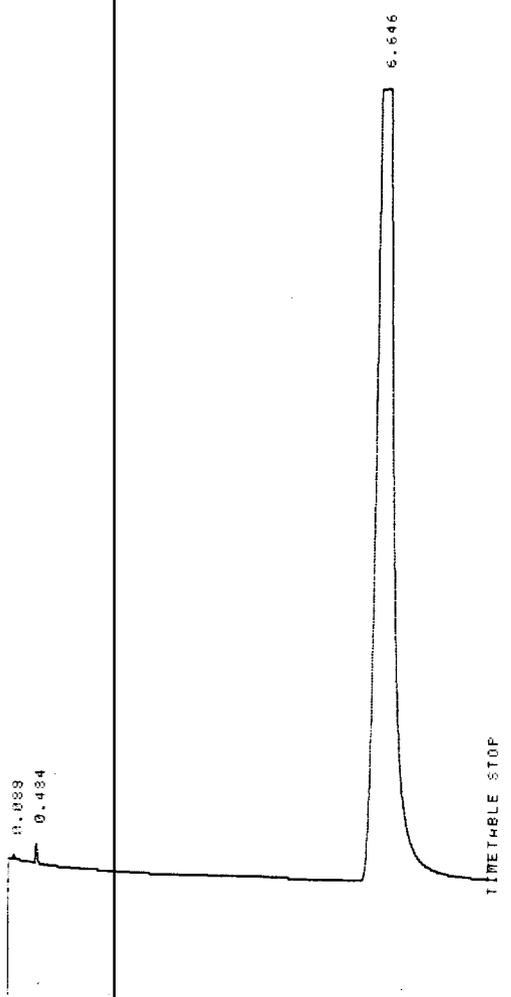
AREA:

RT	AREA	TYPE	WIDTH	AREA2
.500	108275	VB	.044	1.84625
6.633	5756314	PB	.297	98.15376

TOTAL AREA=5864586  
 MUL FACTOR=1.0000E+00

*Handwritten:* 1400 ppm  
 6.633 min

\* RUN# 76 JUN 22, 1992 18129156  
 START



RUN# 76 JUN 22, 1992 18129156

AREA:

RT	AREA	TYPE	WIDTH	AREA2
.484	30480	PV	.038	.28221
6.646	11563276	PB	.294	99.73779

TOTAL AREA=1.1594E+07  
MUL FACTOR=1.0000E+00

\* RUN # 77 JUN 22, 1992 18141110 11.5 SL. 16-2016  
START CHN@100ppm



RUN# 77 JUN 22, 1992 18141110

AREA%  
RT AREA TYPE WIDTH AREA%  
.200 11605 BB .030 1.52681  
.500 740479 BB .038 98.47322

TOTAL AREA=760093  
MUL FACTOR=1.0000E+00

\* RUN # 78 JUN 22, 1992 18142152 11.2 SL. 16-2016 CHN@40.1ppm



RUN# 78 JUN 22, 1992 18142152

AREA%  
RT AREA TYPE WIDTH AREA%  
.504 1636512 SPB .037 100.00000

TOTAL AREA=1636512  
MUL FACTOR=1.0000E+00

\* RUN # 79 JUN 22, 1992 18145109 11-2016 CHN@80.2ppm



RUN# 79 JUN 22, 1992 18145109

AREA%  
RT AREA TYPE WIDTH AREA%  
.502 3084824 SBB .037 86.45402  
2.702 483343 I PH .120 13.54598

MUL FACTOR=1.0000E+00

\* RUN # 80 JUN 22, 1992 18:49:40 1:11A, APM N1001 CH4 @ 197.5 ppm

START



RUN# 80 JUN 22, 1992 18:49:40

AREA:

RT	AREA	TYPE	WIDTH	AREA%
.501	7493552	SFB	.037	100.00000

TOTAL AREA=7493552  
MUL FACTOR=1.0000E+00

\* RUN # 81 JUN 22, 1992 18:51:44 1:2 Diurnal CH4 @ 399.0 ppm  
START



RUN# 81 JUN 22, 1992 18:51:44

AREA:

RT	AREA	TYPE	WIDTH	AREA%
.500	14791768	SFB	.037	100.00000

TOTAL AREA=14792E+07  
MUL FACTOR=1.0000E+00

\* RUN # 82 JUN 22, 1992 18:53:08 1:29 PM CH4 APM-N1001  
START



RUN# 82 JUN 22, 1992 18:53:08

AREA:

RT	AREA	TYPE	WIDTH	AREA%
.496	24371408	SBB	.047	99.92514
.780	18003	BB	.037	.07384

TOTAL AREA=2.4389E+07  
MUL FACTOR=1.0000E+00



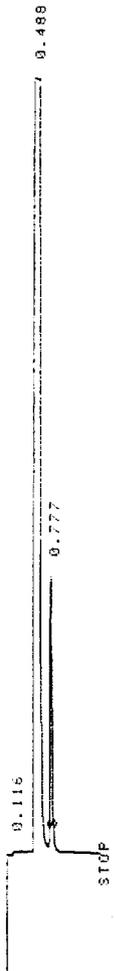
3981

RUN# 83 JUN 22, 1992 18:55:17

RT	AREA	TYPE	WIDTH	AREA%
.488	33191616	>SBB	.054	99.36429
1.053	212355	I VH	.285	.63572

TOTAL AREA=3.2404E+07  
MUL FACTOR=1.0000E+00

\* RUN # 84 JUN 22, 1992 18:59:27 398 ppm City



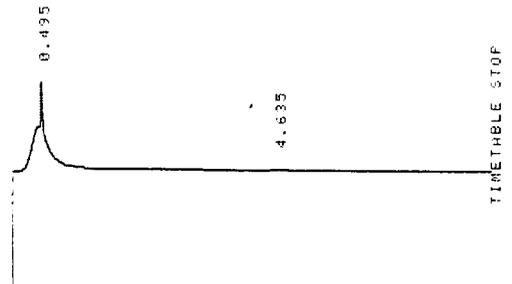
RUN# 84 JUN 22, 1992 18:59:27

RT	AREA	TYPE	WIDTH	AREA%
.488	39110272	>SBB	.075	98.98730
.777	400126	BB	.039	1.01271

TOTAL AREA=3.9510E+07  
MUL FACTOR=1.0000E+00

QC CHECK TECKAR BAG WYAIR

\* RUN # 85 JUN 22, 1992 19:01:30



TIMETABLE STOP

RUN# 85 JUN 22, 1992 19:01:30

AREA#	PT	AREA	TYPE	WIDTH	AREA#
	.495	512455	PB	.158	90.70064
	4.835	52541	PB	.326	9.29936

TOTAL AREA= 564996  
 MUL FACTOR=1.0000E+00

\*F BREAK

METHOD ANALYZE  
 06/24/1992 08:14:32  
 TEDLAR SAG

\* RUN # 86 JUN 24, 1992 08:14:32

START

0.234
0.490

TIMETABLE STOP

RUN# 86 JUN 24, 1992 08:14:32

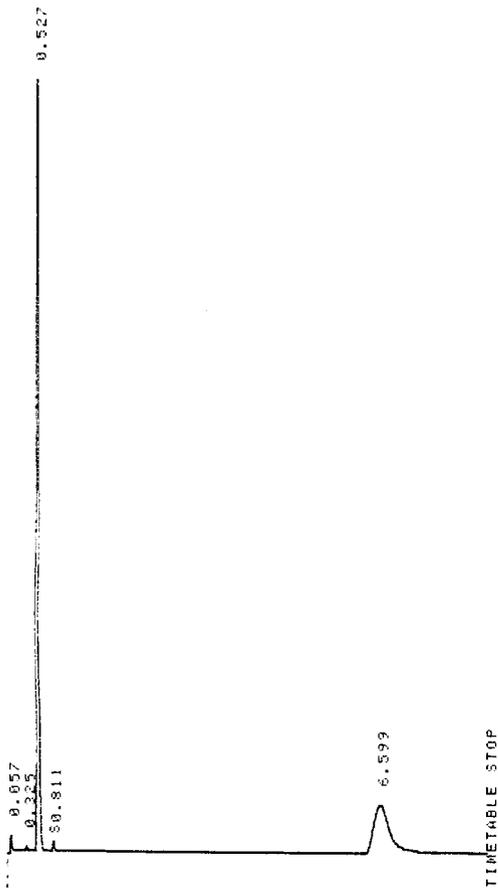
AREA#	PT	AREA	TYPE	WIDTH	AREA#
	.234	16400	BB	.148	17.66461
	.490	76441	PB	.036	82.33539

TOTAL AREA= 92041  
 MUL FACTOR=1.0000E+00

06/24/1992 08:14:32

\* RUN # 07 JUN 24 1992 08:12:20

START



RUN# 07 JUN 24, 1992 08:25:28

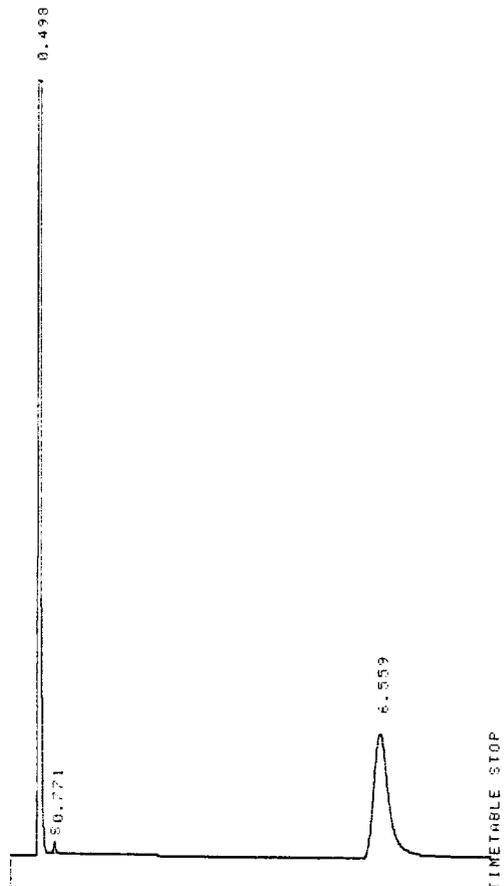
RT	AREA	TYPE	WIDTH	AREA%
.057	22050	BY	.029	.91196
.325	10785	VB	.041	.44585
.527	1764175	SPB	.037	72.93123
.811	19048	BB	.040	.78745
6.599	602888	PB	.312	24.92348

TOTAL AREA=2418957  
MUL FACTOR=1.0000E+00

\* RUN # 38

JUN 24, 1992 08:35:32 ALAN 001416 271110 @ 498 RB

START



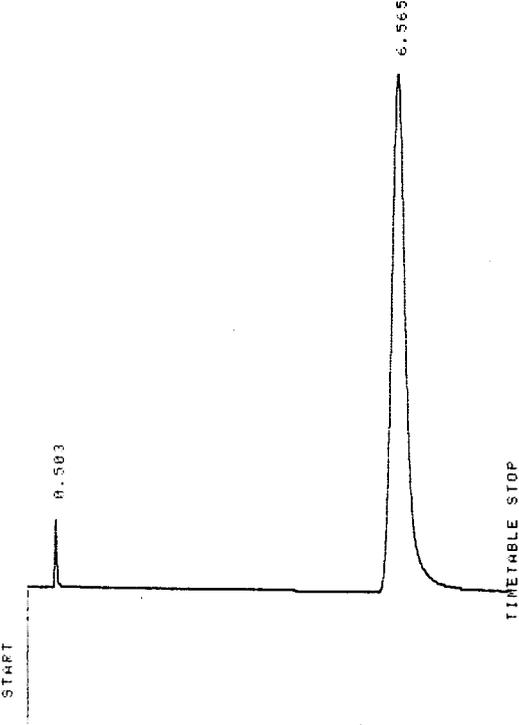
TIMETABLE STOP

RUN# 88 JUN 24, 1992 08135132

RT	AREA	TYPE	WIDTH	AREA%
.499	5489216	SH	.036	79.26819
.771	18618	BP	.038	.26886
6.559	1417032	PE	.298	20.46295

TOTAL AREA=6924867  
 MUL FACTOR=1.0000E+00

\* RUN # 89 JUN 24, 1992 08145108 (4 Oil. ALM 011908 Ethanol @ 2000 ppm)

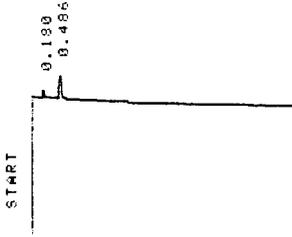


RUN# 89 JUN 24, 1992 08145108

RT	AREA	TYPE	WIDTH	AREA%
.503	111741	BP	.043	1.93077
6.565	5675651	PE	.292	98.06925

TOTAL AREA=5787392  
 MUL FACTOR=1.0000E+00

\* RUN # 90 JUN 24, 1992 08154143 ALM 011908 Ethanol @ 4000 ppm



6.570

TIMETABLE STOP

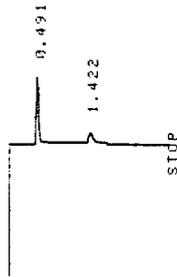
RUN# 90 JUN 24, 1992 00:54:43

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.180	12214	BV	.034	.10539	
.486	44704	VV	.040	.38938	
6.570	11423960	PB	.297	99.50426	

TOTAL AREA=1.1481E+07  
 MUL FACTOR=1.0000E+00

*1.57 min - 13 min  
 PROXIMATE @ 1.57 min*

\* RUN # 91 JUN 24, 1992 09:07:39 1:2  
 START



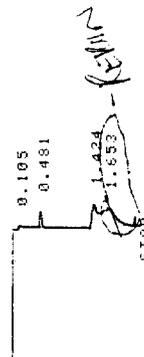
RUN# 91 JUN 24, 1992 09:07:39

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.491	115262	BB	.044	69.39606	
1.422	50831	PB	.108	30.60394	

TOTAL AREA= 168093  
 MUL FACTOR=1.0000E+00

*1.57 min - 13 min  
 PROXIMATE @ 1.57 min*

\* RUN # 92 JUN 24, 1992 09:12:34  
 START



RUN# 92 JUN 24, 1992 09:12:34

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.481	29528	BB	.041	6.58142	

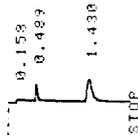
*1.424 - 1.653  
 MIN*

1.853 311177 VV .250 65.35744

TOTAL AREA= 448657  
MUL FACTOR=1.0000E+00

*15:11 Acetone @ 308ppm*

\* RUN # 93 JUN 24, 1992 09:15:22 AM  
START: not ready



RUN# 93 JUN 24, 1992 09:15:22

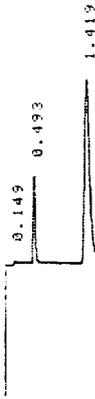
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.159	11044	BV	.065	7.65309
.489	30212	VB	.044	20.93578
1.430	103052	PB	.110	71.41117

TOTAL AREA= 144308  
MUL FACTOR=1.0000E+00

*102105 Acetone @ 210ppm*

\* RUN # 94 JUN 24, 1992 09:20:49  
START



RUN# 94 JUN 24, 1992 09:20:49

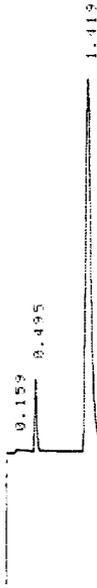
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.149	11562	BB	.065	1.31514
.493	141020	PB	.042	16.04057
1.419	726564	PB	.104	82.64429

TOTAL AREA= 879146  
MUL FACTOR=1.0000E+00

*412ppm*

\* RUN # 95 JUN 24, 1992 09:24:24  
START



PUN# 95 JUN 24, 1992 09:24:24

AREA%

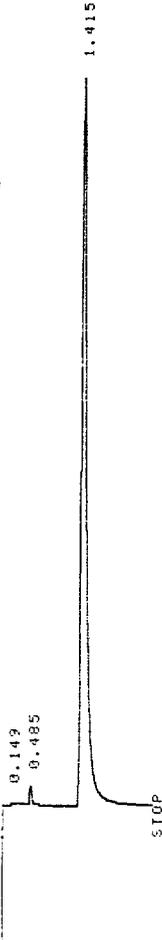
RT	AREA	TYPE	WIDTH	AREA%
.495	115395	PB	.041	7.36545
1.419	1451311	PB	.103	92.63456

TOTAL AREA=1566706

MUL FACTOR=1.0000E+00

\* RUN # 96 JUN 24, 1992 09:27:52 *ALUM W/10% Acetone @ 2.5% RT*

START



RUN# 96 JUN 24, 1992 09:27:52

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.485	32583	BB	.043	1.13326
1.415	2842578	BB	.103	98.86672

TOTAL AREA=2875162

MUL FACTOR=1.0000E+00

\* RUN # 97 JUN 24, 1992 09:34:59

START



RUN# 97 JUN 24, 1992 09:34:59

AREA%

RT	AREA	TYPE	WIDTH	AREA%
.507	5952074	SHB	.036	100.00000

TOTAL AREA=5952074

MUL FACTOR=1.0000E+00

\* RUN # 98 JUN 24, 1992 09:39:20 *DA, H-2000 (Methanol) @ 10.0 RT*

START



TOTAL AREA=5052074

MUL FACTOR=1.0000E+00

RUN# 98 JUN 24, 1992 09142136

AREA%	RT	AREA TYPE	WIDTH	AREA%
.188	19021	PH	.101	2.40034
.439	773109	SBB	.037	97.59968

TOTAL AREA=792430  
 MUL FACTOR=1.0000E+00

\* RUN # 99 JUN 24, 1992 09142136 1:2 Dil. 11-20% MEASURED 10.6ppm

START

STOP 0.499

RUN# 99 JUN 24, 1992 09142136

AREA%	RT	AREA TYPE	WIDTH	AREA%
.498	1450794	SBB	.036	100.00000

TOTAL AREA=1450794  
 MUL FACTOR=1.0000E+00

\* RUN # 100 JUN 24, 1992 09145101 11-20% MEASURED 10.2ppm

START

STOP 0.906

RUN# 100 JUN 24, 1992 09145101

AREA%	RT	AREA TYPE	WIDTH	AREA%
.498	3085282	SBB	.036	99.57862
.906	44486	I BH	.234	1.42138

TOTAL AREA=3129768  
 MUL FACTOR=1.0000E+00

\* RUN # 101 JUN 24, 1992 09148155 1:5 Dil. 11-20% MEASURED 10.6ppm

START

STOP 0.214

RUN# 101 JUN 24, 1992 09148155

AREA%	RT	AREA TYPE	WIDTH	AREA%
.214	47005	BH	.196	.77891
.497	5968490	SBB	.036	99.22110

INITIAL AREA=0.00000000  
MUL FACTOR=1.00000E+00

\* RUN # 102 JUN 24, 1992 09151150 1:2 OIL AIR-MIXED METHANE @ 399  
STMPRT NOT READY

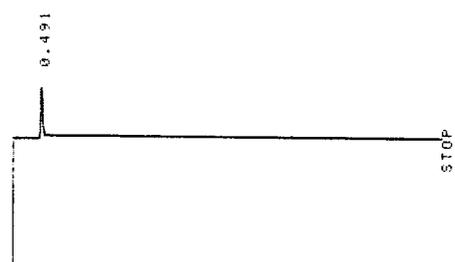


PUN# 102 JUN 24, 1992 09151150

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.499	14684032	SPB	.036	99.92299	
.772	10301	BB	.040	.07010	

TOTAL AREA=1.4694E+07  
MUL FACTOR=1.0000E+00

\* RUN # 103 JUN 24, 1992 09157100 6L CHECK AIR / FEDERAL BANC



PUN# 103 JUN 24, 1992 09157100

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.491	74140	VB	.037	100.00000	

TOTAL AREA= 74140  
MUL FACTOR=1.0000E+00

\* RUN # 104 JUN 24, 1992 10105120 FERRO BUNKER HIGH-TANK @ 80.2  
STMPRT NOT READY



RUN# 104 JUN 24, 1992 10:05:20  
AREA%  
RT AREA TYPE WIDTH AREA%  
.502 2840544 SHB .037 100.00000

TOTAL AREA=2840544  
MUL FACTOR=1.0000E+00

*MEMPHIS @ 11:00 AM  
START 10:00 AM  
STOP 11:00 AM*

*TRAIL*

\* RUN # 105 JUN 24, 1992 10:07:00  
START

STOP 0.507

RUN# 105 JUN 24, 1992 10:07:00  
AREA%  
RT AREA TYPE WIDTH AREA%  
.507 3184322 SHB .036 100.00000

TOTAL AREA=3184322  
MUL FACTOR=1.0000E+00

*MEMPHIS @ 11:00 AM  
START 10:00 AM  
STOP 11:00 AM*

*TRAIL*

\* RUN # 106 JUN 24, 1992 10:10:00  
START

STOP 0.505

RUN# 106 JUN 24, 1992 10:10:00  
AREA%  
RT AREA TYPE WIDTH AREA%  
.505 6309075 SHB .036 100.00000

TOTAL AREA=6309075  
MUL FACTOR=1.0000E+00

*MEMPHIS @ 11:00 AM  
START 10:00 AM  
STOP 11:00 AM*

*TRAIL*

\* RUN # 107 JUN 24, 1992 10:12:49  
START

STOP 0.498

RUN# 107 JUN 24, 1992 10:12:49  
AREA%  
RT AREA TYPE WIDTH AREA%  
.498 7315152 SHB .036 100.00000

MUL FACTOR=1.0000E+00

*Handwritten:* KERO OVEN, 1st RT, 2nd RT, 3rd RT, 4th RT, 5th RT, 6th RT, 7th RT, 8th RT, 9th RT, 10th RT, 11th RT, 12th RT, 13th RT, 14th RT, 15th RT, 16th RT, 17th RT, 18th RT, 19th RT, 20th RT, 21st RT, 22nd RT, 23rd RT, 24th RT, 25th RT, 26th RT, 27th RT, 28th RT, 29th RT, 30th RT, 31st RT, 32nd RT, 33rd RT, 34th RT, 35th RT, 36th RT, 37th RT, 38th RT, 39th RT, 40th RT, 41st RT, 42nd RT, 43rd RT, 44th RT, 45th RT, 46th RT, 47th RT, 48th RT, 49th RT, 50th RT, 51st RT, 52nd RT, 53rd RT, 54th RT, 55th RT, 56th RT, 57th RT, 58th RT, 59th RT, 60th RT, 61st RT, 62nd RT, 63rd RT, 64th RT, 65th RT, 66th RT, 67th RT, 68th RT, 69th RT, 70th RT, 71st RT, 72nd RT, 73rd RT, 74th RT, 75th RT, 76th RT, 77th RT, 78th RT, 79th RT, 80th RT, 81st RT, 82nd RT, 83rd RT, 84th RT, 85th RT, 86th RT, 87th RT, 88th RT, 89th RT, 90th RT, 91st RT, 92nd RT, 93rd RT, 94th RT, 95th RT, 96th RT, 97th RT, 98th RT, 99th RT, 100th RT

\* RUN # 108 JUN 24, 1992 10:11:25

START



RUN# 108 JUN 24, 1992 10:11:25

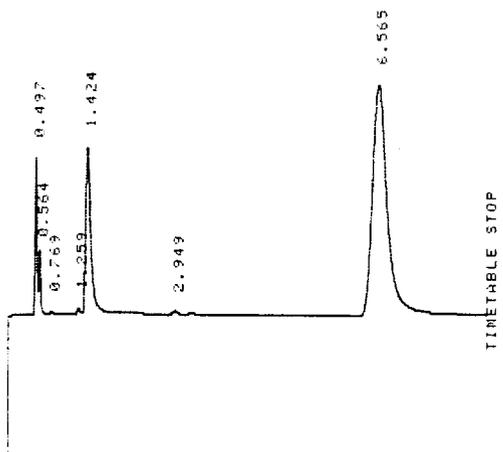
RT	AREA	TYPE	WIDTH	AREA%
.501	7.52227	SHB	.036	100.00000

TOTAL AREA=7.52227  
MUL FACTOR=1.0000E+00

*Handwritten:* KERO OVEN

\* RUN # 109 JUN 24, 1992 10:17:20

START



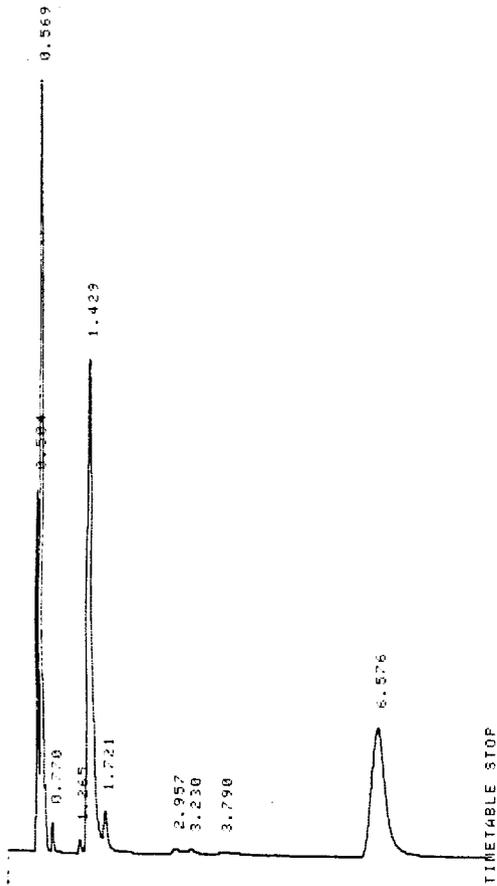
RUN# 109 JUN 24, 1992 10:17:20

RT	AREA	TYPE	WIDTH	AREA%
.497	225255	PV	.038	6.26257
.564	91540	VB	.037	2.54501
1.253	12842	PV	.045	.35703
1.424	658597	VB	.104	19.31039
2.949	21658	PV	.108	.60214
6.565	2586357	PB	.299	71.92285

TOTAL AREA=3595548  
MUL FACTOR=1.0000E+00

*Handwritten:* KERO OVEN

START

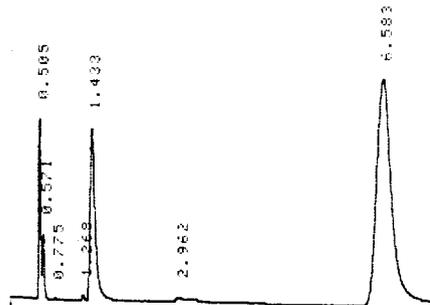


RUN# 110 JUN 24, 1992 10:26:15

RT	AREA	TYPE	WIDTH	AREA%
.584	472208	BV	.034	7.79242
.569	1753443	VB	.039	28.93549
.770	46695	PB	.040	.77057
1.265	30543	PV	.052	.50402
1.429	1966735	VV	.104	32.45525
1.721	150534	VB	.091	2.48413
2.957	45874	BV	.164	.75702
3.230	43893	VV	.174	.72433
3.790	63108	VP	.328	1.04141
6.576	1486804	PB	.299	24.93538

TOTAL AREA=5053837  
MUL FACTOR=1.0000E+00

T \* RUN # 111 JUN 24, 1992 10:35:05 OVER  
START



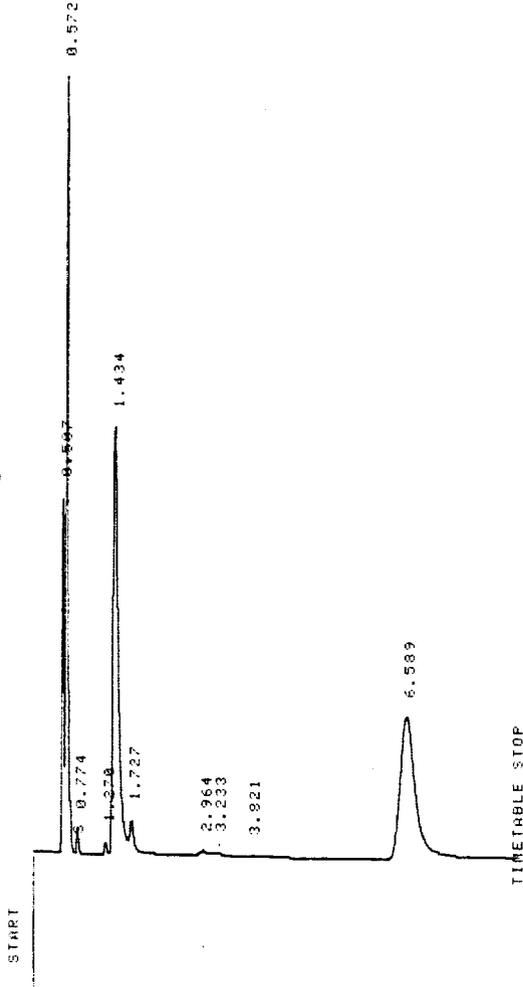
TIMETABLE STOP

RUN# 111 JUN 24, 1992 10135105

RT	AREA	TYPE	WIDTH	AREA%
.505	259839	BV	.038	7.13630
.571	95507	VB	.037	2.62305
1.268	14770	PP	.050	.48565
1.433	604707	PB	.104	18.00522
2.962	45074	VV	.159	1.23794
6.593	2541150	PB	.299	69.79174

TOTAL AREA=3641046  
MUL FACTOR=1.0000E+00

R+ RUN # 112 JUN 24, 1992 10144100 *GENER # 01*

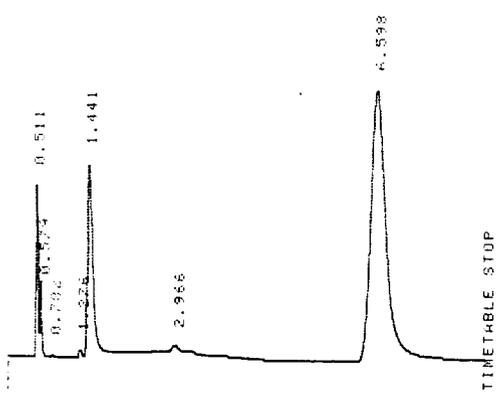


RUN# 112 JUN 24, 1992 10144100

RT	AREA	TYPE	WIDTH	AREA%
.507	473426	BH	.034	8.43087
.572	1474220	SHB	.038	26.44008
.774	39514	BB	.039	.70068
1.270	22005	PV	.053	.48433
1.434	1703909	VV	.105	30.55954
1.727	121586	VB	.094	2.18064
2.964	51294	BV	.197	.91996
3.233	36435	VP	.168	.65346
3.921	38461	PP	.302	.60900
6.599	1609854	PB	.302	28.87266

TOTAL AREA=5575786  
MUL FACTOR=1.0000E+00

X\* RUN # 113 JUN 24, 1992 10:52:59 AM  
START

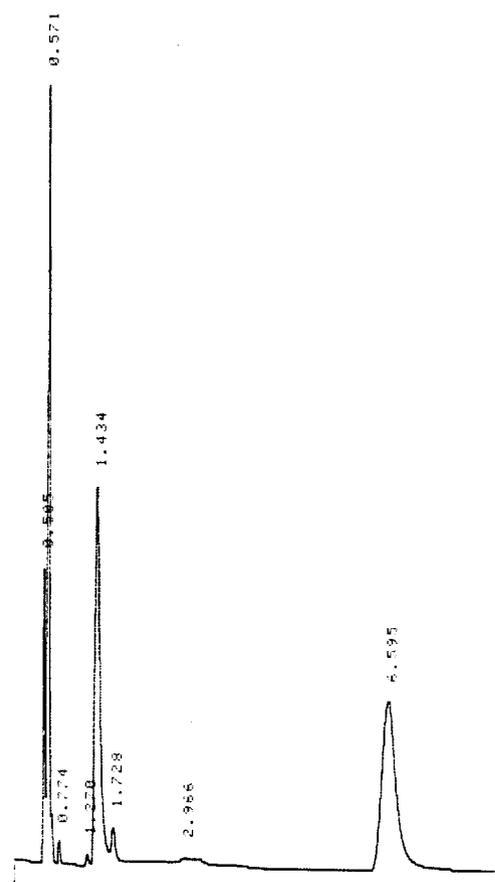


RUN# 113 JUN 24, 1992 10:52:59

RT	AREA	TYPE	WIDTH	AREA%
.511	251366	VV	.038	5.73293
.579	111464	VB	.037	2.54217
1.276	16503	PP	.049	.37867
1.441	762163	PB	.104	17.39273
2.966	185557	BV	.438	4.23202
6.598	3057446	PB	.300	69.73149

TOTAL AREA=4384599  
MUL FACTOR=1.0000E+00

R\* RUN # 114 JUN 24, 1992 11:01:50  
START



RUN# 114 JUN 24, 1992 11:01:50

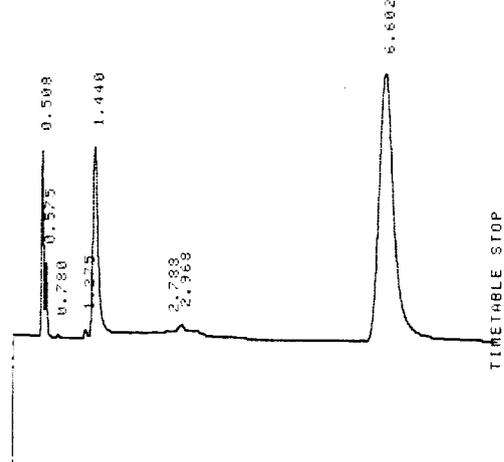
RT	AREA	TYPE	WIDTH	AREA%
.571	251366	VV	.038	5.73293
.579	111464	VB	.037	2.54217
1.276	16503	PP	.049	.37867
1.434	762163	PB	.104	17.39273
2.966	185557	BV	.438	4.23202
6.595	3057446	PB	.300	69.73149

TOTAL AREA=4384599  
MUL FACTOR=1.0000E+00

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.505	390965	BV	.035	7.27636
	.571	1300400	VB	.030	24.35450
	.774	35689	PB	.033	.66427
	1.270	22069	PV	.040	.41077
	1.434	1497186	VV	.104	27.86685
	1.728	121848	VB	.086	2.26793
	2.966	73531	VV	.228	1.36862
	6.595	1922875	PB	.302	35.79011

TOTAL AREA=5372643  
MUL FACTOR=1.0000E+00

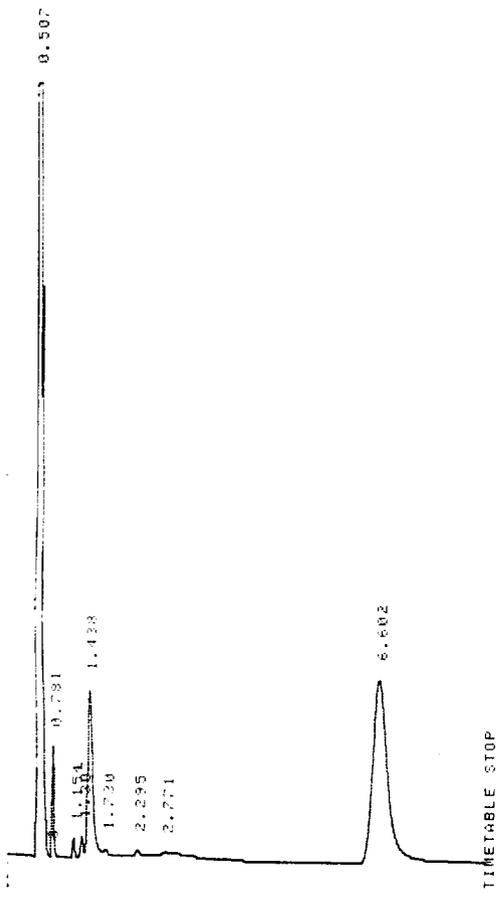
RUN # 115 JUN 24, 1992 11:10:50 *DUEN*



AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.508	276635	BV	.030	6.30579
	.575	113334	VB	.030	2.59340
	1.275	18826	PP	.049	.38354
	1.440	751658	PB	.104	17.13374
	2.788	122904	BV	.529	2.80155
	2.968	81314	VV	.194	1.85352
	6.602	3024334	PB	.299	68.93846

TOTAL AREA=4387005  
MUL FACTOR=1.0000E+00

*ONE OF THE ORIGINAL TESTS*  
*REPELION OVEN TEST*

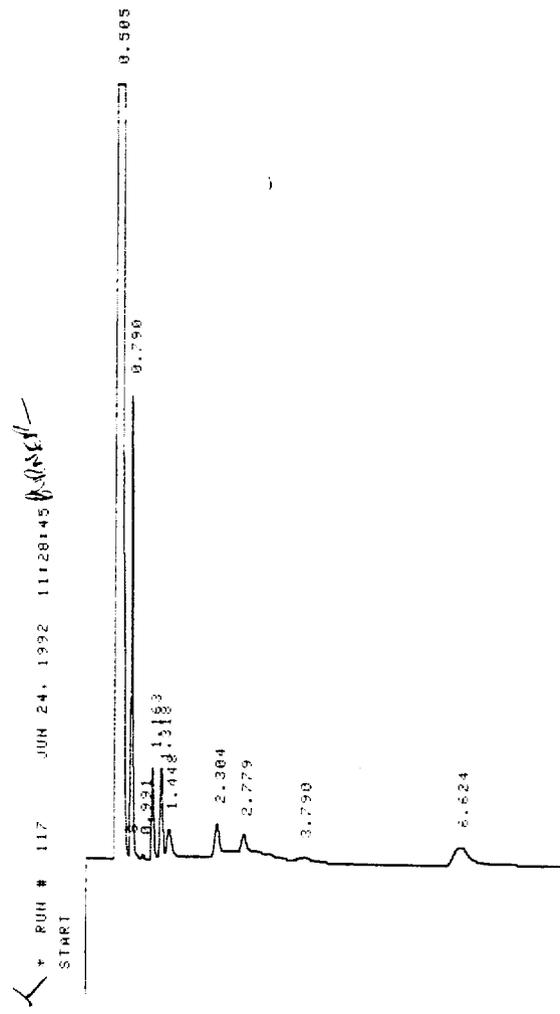


RUN# 116 JUN 24, 1992 11119145

APEND

RT	AREA	TYPE	WIDTH	AREA%
.507	15100360	SPB	.037	93.71520
.781	165975	BB	.038	.96300
1.154	37593	PV	.046	.19547
1.307	48435	VV	.057	.25184
1.438	674651	VV	.105	3.50791
1.730	34297	VB	.094	.17833
2.295	34589	BV	.111	.17985
2.771	40697	VV	.147	.21156
6.602	2095724	FB	.302	10.89690

TOTAL AREA=1.9232E+07  
MUL FACTOR=1.0000E+00



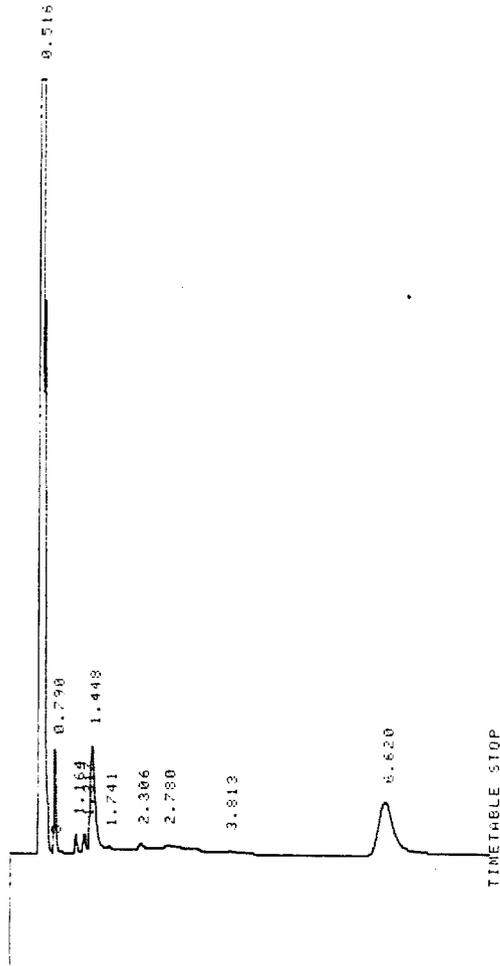
\* RUN # 117 JUN 24, 1992 11128145 *(Signature)*  
START

RUN# 117 JUN 24, 1992 11:28:45

AREA#	RT	AREA	TYPE	WIDTH	MREN#
	.505	33912576	SPB	.065	95.29014
	.790	670480	BB	.030	1.88399
	.991	11572	BP	.043	.03252
	1.163	167770	PV	.047	.47141
	1.318	193811	VV	.055	.54458
	1.448	120298	VV	.101	.33002
	2.384	102276	PV	.095	.28738
	2.779	119508	BB	.159	.33580
	3.798	47239	BP	.220	.13273
	6.624	243254	VB	.319	.68351

TOTAL AREA=3.5589E+07  
MUL FACTOR=1.0000E+00

\* RUN # 118 JUN 24, 1992 11:37:35 *Over*  
START



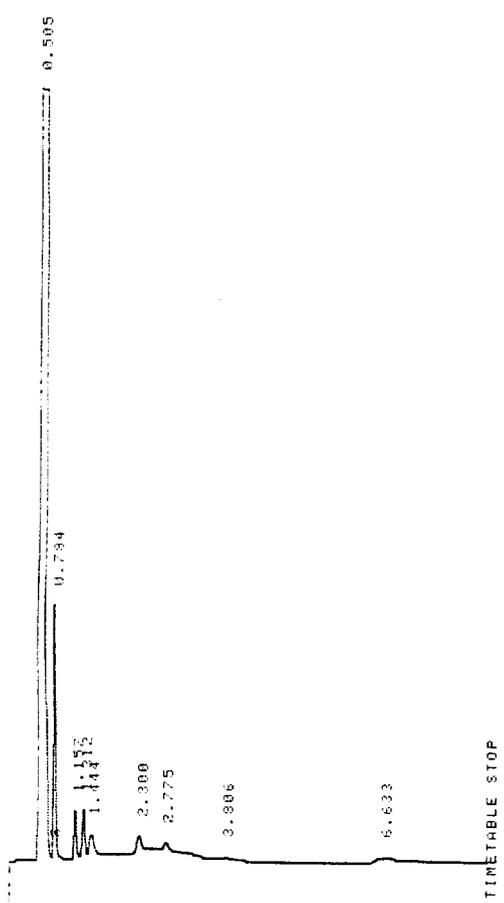
RUN# 118 JUN 24, 1992 11:37:35

AREA#	RT	AREA	TYPE	WIDTH	MREN#
	.516	14982296	SPB	.037	90.49318
	.790	156125	BB	.039	.94933
	1.164	34498	PV	.046	.20977
	1.317	46424	VV	.059	.28229
	1.448	432187	VV	.105	2.62795
	1.741	21907	VB	.088	.19321
	2.386	54620	PV	.155	.33214
	2.780	96056	VV	.280	.58400
	3.813	48591	VP	.269	.29546
	6.620	673060	PB	.334	4.09250

TOTAL AREA=1.6445E+07

*Handwritten mark*

\* RUN # 119 JUN 24, 1992 11:46:145  
START



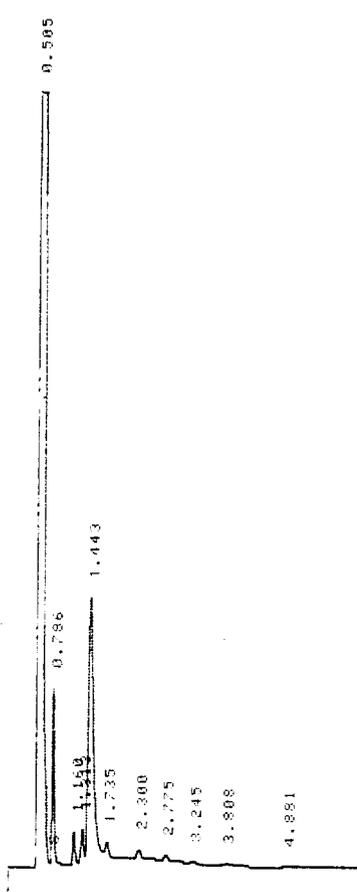
PUN# 119 JUN 24, 1992 11:46:145

RT	AREA	TYPE	WIDTH	AREA%
.505	27641648	>SDB	.053	95.59152
.784	387610	BB	.039	1.34045
1.157	90048	PV	.048	.31417
1.312	113947	VV	.059	.39486
1.444	110065	VV	.114	.38063
2.300	266326	VV	.252	.78269
2.775	238708	VB	.388	.82551
3.806	33480	BP	.222	.11561
6.633	73792	BB	.333	.25519

TOTAL AREA=2.8916E+07  
MUL FACTOR=1.0000E+00

*Handwritten mark*

\* RUN # 120 JUN 24, 1992 11:55:150  
START



0.505

TINETABLE STOP

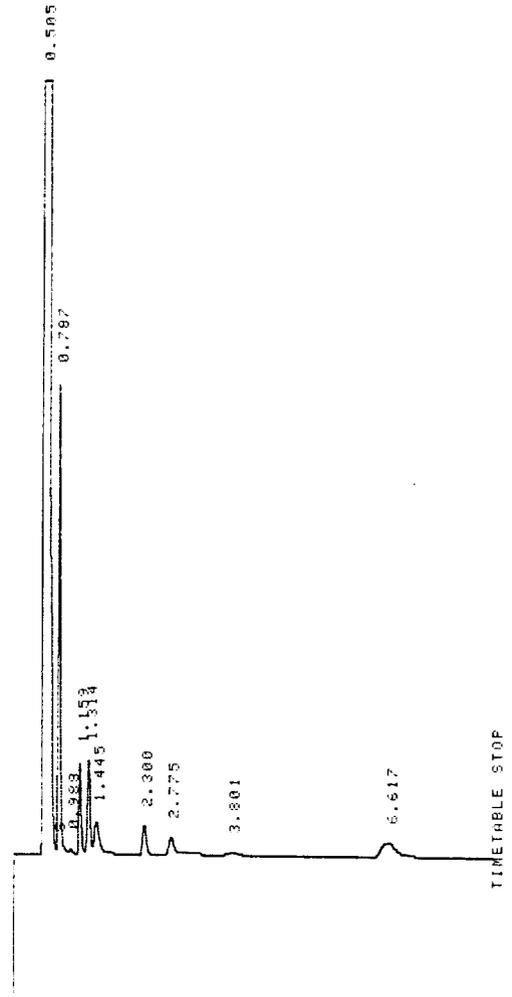
PUR# 120 JUN 24, 1992 11:55:150

RT	AREA	TYPE	WIDTH	AREA%
.505	23622176	SHB	.045	87.50938
.786	260388	BB	.039	.96459
1.160	59215	PV	.047	.21936
1.313	79578	VV	.059	.29480
1.443	1071595	VV	.106	3.96977
1.735	81245	VV	.104	.30098
2.300	58143	VB	.132	.21539
2.775	24777	BV	.094	.09179
3.245	19139	VP	.113	.07090
3.808	39376	PV	.223	.14439
4.891	21300	PB	.196	.07891
6.610	1657378	PB	.302	6.13993

TOTAL AREA=2.6994E+07  
MUL FACTOR=1.0000E+00

*BARNER*

PUR# 121 JUN 24, 1992 12:04:150



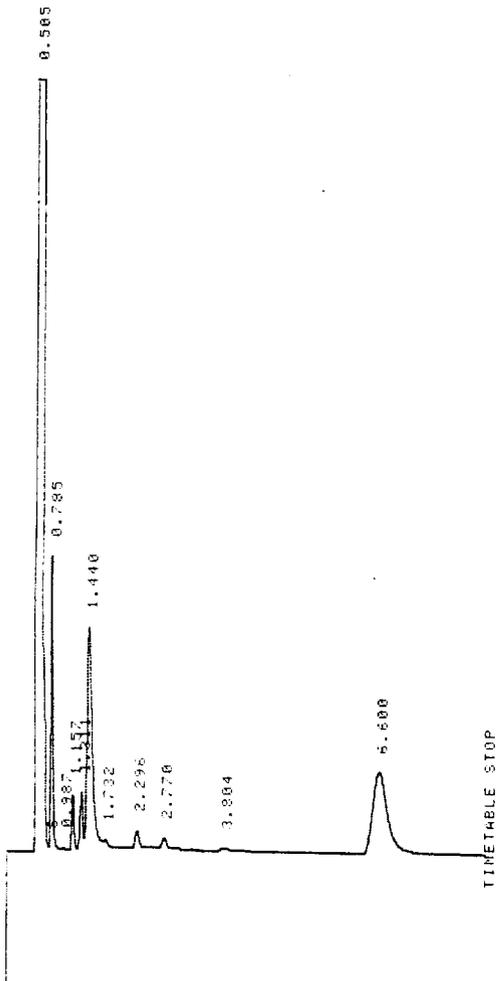
PUR# 121 JUN 24, 1992 12:04:150

RT	AREA	TYPE	WIDTH	AREA%
.505	34118720	SHB	.066	95.27191
.787	675228	BB	.039	1.88592
.988	10722	BP	.044	.02995
1.159	163030	PV	.048	.47210
1.314	192602	VV	.055	.55191

4.300 100002 PV .000 .00154  
 2.775 127568 VV .165 .35630  
 3.801 61152 PP .270 .17800  
 6.617 203724 PB .317 .56900

TOTAL AREA=3.5804E+07  
 MUL FACTOR=1.0000E+00

RUN # 122 JUN 24, 1992 12:13:45 *DOWN*



RUN# 122 JUN 24, 1992 12:13:45

RT	AREA	TYPE	WIDTH	AREA2
.505	2133248	SBB	.056	91.32707
.785	430912	BB	.038	1.35083
1.157	104575	PV	.047	.32782
1.311	130041	VV	.057	.40765
1.440	904207	VV	.106	2.03451
1.732	40725	VV	.098	.12766
2.296	56724	VV	.089	.20917
2.770	58697	VV	.115	.18400
3.804	43212	PV	.232	.15427
6.600	981577	PB	.305	3.07705

TOTAL AREA=3.1900E+07  
 MUL FACTOR=1.0000E+00

*NO CARBON  
 MANIFOLD  
 NOT CALIBRATED  
 REGION*

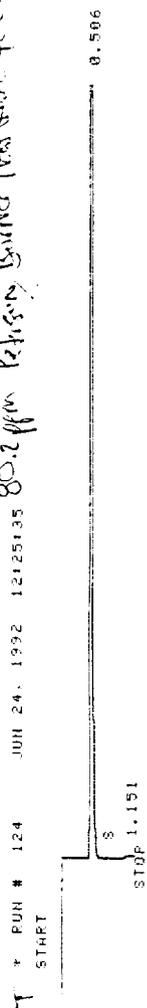
RUN # 123 JUN 24, 1992 12:22:55



RUN# 123 JUN 24, 1992 12:22:55

AREAS:  
 RT WREM TYPE WIDTH WREM%  
 .514 2173811 SHB .036 100.00000  
 TOTAL AREA=2173811  
 MUL FACTOR=1.0000E+00

*80.2 ppm Methane Detector (head from Q Check)*



RUN# 124 JUN 24, 1992 12:25:35  
 AREAS:  
 RT WREM TYPE WIDTH WREM%  
 .506 3112573 SPB .036 98.83472  
 1.151 36599 I BH .209 1.16529  
 TOTAL AREA=3149270  
 MUL FACTOR=1.0000E+00

*199.1 ppm METHANE Detector (head from Q Check)*



RUN# 125 JUN 24, 1992 12:25:34  
 AREAS:  
 RT WREM TYPE WIDTH WREM%  
 .499 7393712 SPB .035 100.00000  
 TOTAL AREA=7393712  
 MUL FACTOR=1.0000E+00

*199.1 ppm METHANE Detector (head from Q Check)*



RUN# 126 JUN 24, 1992 12:32:35  
 AREAS:  
 RT WREM TYPE WIDTH WREM%  
 .510 7400018 SPB .036 99.94077  
 .782 11213 BV .069 1.15124  
 TOTAL AREA=7414230

*Handwritten:* AIR-  
METHYLENE

RUN # 127 JUN 24. 1992 12:35:35

START



TIMETABLE STOP

RUN# 127 JUN 24. 1992 12:35:35

AREA2

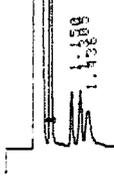
RT	AREA	TYPE	WIDTH	AREA2
.498	197494	BY	.069	100.00000

TOTAL AREA= 197494  
MUL FACTOR=1.0000E+00

\* RUN # 128 JUN 24. 1992 14:15:18

START

*Handwritten:* PENTACEN BINDER



0.778

0.496

2.764  
3.792  
6.606

TIMETABLE STOP

PUN# 128 JUN 24, 1992 14115:10

AREA%	RT	AREA TYPE	WIDTH	AREA%
.496	29990032	>S00	.059	96.41229
.778	454256	BB	.039	1.46035
1.150	104726	PV	.040	.33667
1.305	129589	VV	.058	.41660
1.436	162246	VB	.113	.52159
2.290	57209	BP	.082	.18392
2.764	55534	PV	.131	.17853
3.792	65622	PP	.255	.21096
6.606	86821	PB	.341	.27911

TOTAL AREA=3.1106E+07  
MUL FACTOR=1.0000E+00

f \* RUN # 129 JUN 24, 1992 14124:00 *OVER*  
START

1.156  
1.156  
1.440  
1.730  
2.295  
2.768  
3.806  
6.602  
0.783  
0.505

TIMETABLE STOP

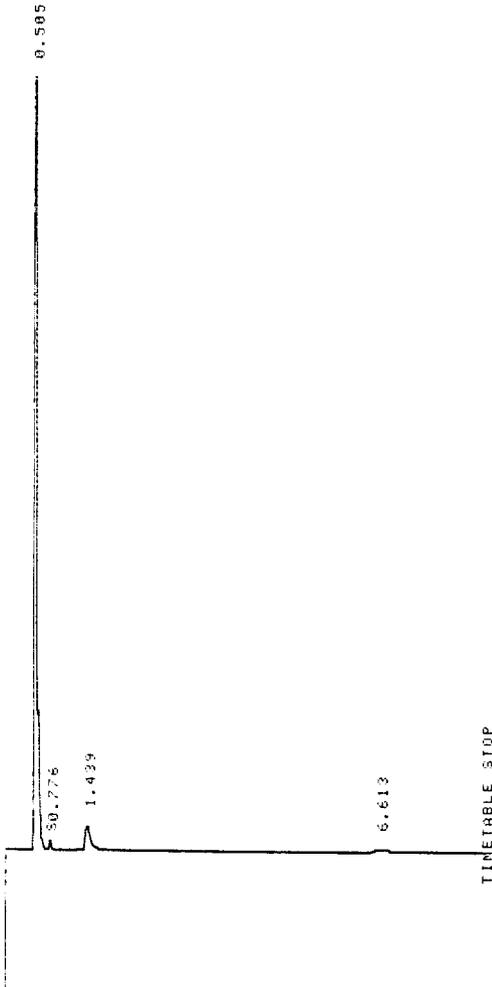
PUN# 129 JUN 24, 1992 14124:00

RT	AREA	TYPE	WIDTH	AREA%
.505	24626624	SHB	.046	94.17478
.783	250532	BB	.030	.98199
1.156	56963	FV	.049	.22327
1.309	76179	VV	.050	.29859
1.440	46696	VV	.106	1.98832
1.730	42160	VB	.093	.16525
2.295	33400	FV	.085	.13091
2.768	46649	VV	.169	.18285
3.806	44125	PP	.274	.17295
6.602	449318	PB	.306	1.76115

TOTAL AREA=2.5513E+07  
MUL FACTOR=1.0000E+00

*GRANITE*

\* RUN # 130 JUN 24, 1992 14:32:15  
START



0.505

RUN# 130 JUN 24, 1992 14:32:15

AREA:	RT	AREA	TYPE	WIDTH	AREA%
.505	2250736	SPB	.039	91.76109	
.776	19207	BP	.041	.74229	
1.439	119918	VB	.118	4.88898	
6.613	63961	VB	.372	2.60765	

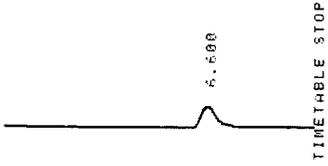
TOTAL AREA=2452022  
MUL FACTOR=1.0000E+00

*OPEN*

\* RUN # 131 JUN 24, 1992 14:42:05  
START



0.506



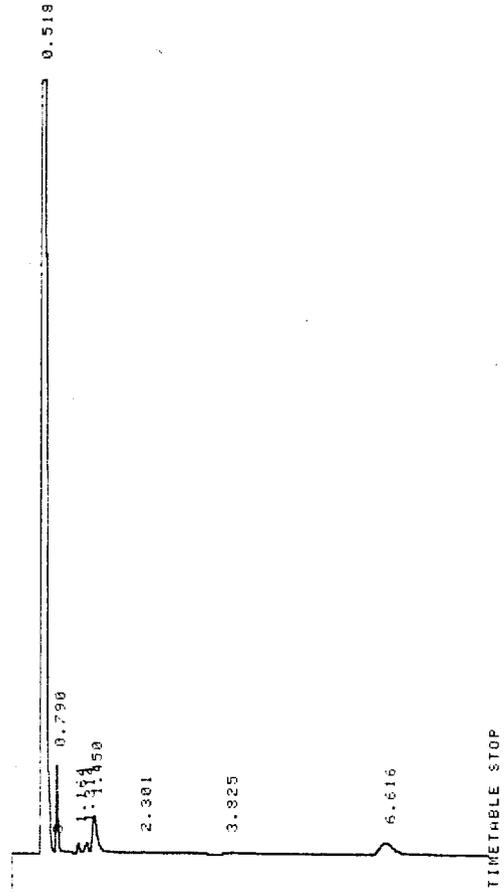
RUN# 131 JUN 24, 1992 14:42:05

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.506	937.4618	SB	.038	89.37795	
.780	82973	BB	.039	.80553	
1.152	17543	BV	.046	.18723	
1.302	29942	VV	.070	.31956	
1.435	550380	VV	.106	5.87307	
1.727	50876	VB	.088	.54297	
5.600	263643	FB	.313	2.81372	

TOTAL AREA=9.3699E+06  
 MUL FACTOR=1.0000E+00

X RUN # 132 JUN 24, 1992 14:51:10  
 START

*QUINEL*



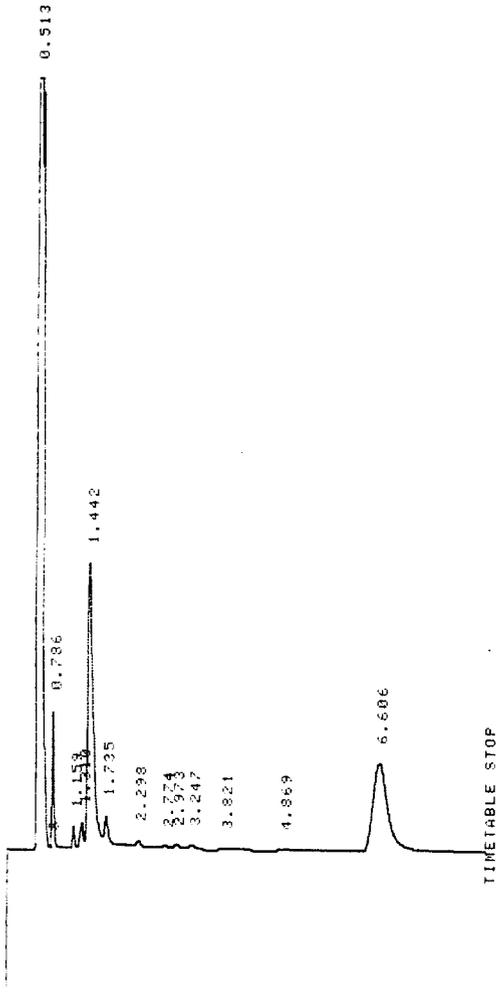
RUN# 132 JUN 24, 1992 14:51:10

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.518	1455098	SB	.038	96.24147	

1.164	21376	PV	.048	.14134
1.314	35415	VV	.072	.23417
1.450	157969	VV	.108	1.04453
2.301	10880	VB	.083	.07194
3.825	42751	PV	.273	.28268
6.616	168796	PB	.318	1.11612

TOTAL AREA=1.5124E+07  
MUL FACTOR=1.0000E+00

R \* RUN # 133 JUN 24. 1992 15100125 002N  
START



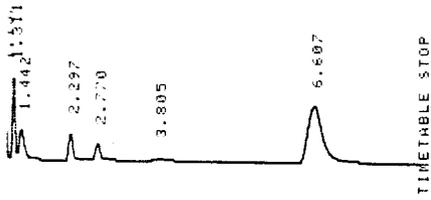
RUN# 133 JUN 24. 1992 15100125

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.513	20290520	>SHB	.039	87.85562	
.786	206412	PB	.039	.89374	
1.159	43861	PV	.047	.18991	
1.310	63503	VV	.066	.30094	
1.442	1152642	VV	.106	4.99081	
1.735	103720	VB	.089	.47508	
2.298	22697	PB	.075	.09828	
2.774	16365	BV	.091	.07086	
2.973	25326	VV	.111	.10966	
3.247	32533	VP	.133	.14086	
3.821	37466	PV	.228	.16222	
4.869	35219	PB	.224	.15249	
6.606	1053054	PB	.306	4.55960	

TOTAL AREA=2.3095E+07  
MUL FACTOR=1.0000E+00

\* RUN # 134 JUN 24. 1992 1510314R  
START

*Handwritten signature*



RUN# 134 JUN 24, 1992 15:09:140

RT	AREA	TYPE	WIDTH	AREA%
1.442	33150950	YSHB	.054	94.46384
1.511	606153	BB	.030	1.72724
2.297	149327	PV	.047	.42266
2.770	174845	VV	.055	.49822
3.805	132015	VB	.113	.37618
6.607	86578	PV	.084	.24670
	76316	VB	.120	.21746
	56795	PV	.300	.16184
	661848	FB	.307	1.89594

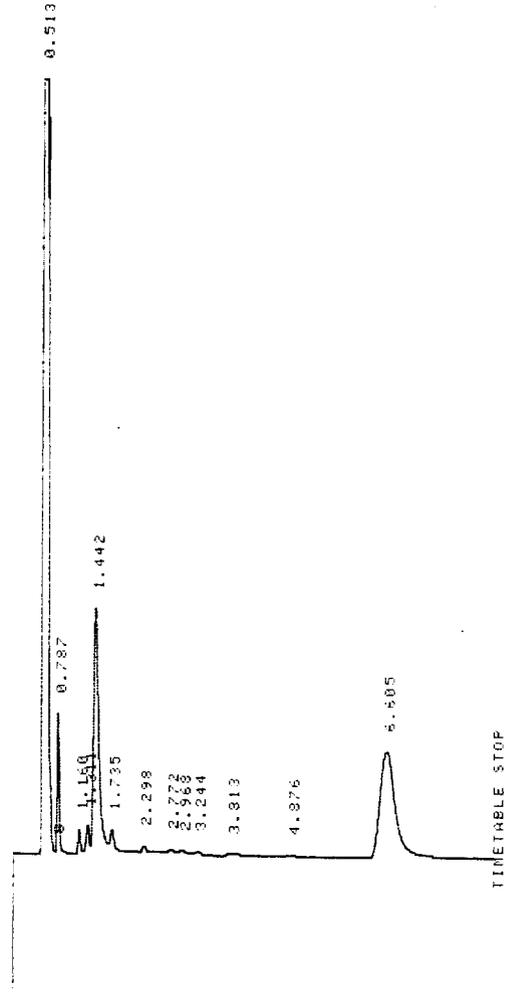
TOTAL AREA=3.5094E+07  
MUL FACTOR=1.0000E+00

TINMETABLE STOP

*QUEN*

\* RUN # 135 JUN 24, 1992 15:18:130

START



TINMETABLE STOP

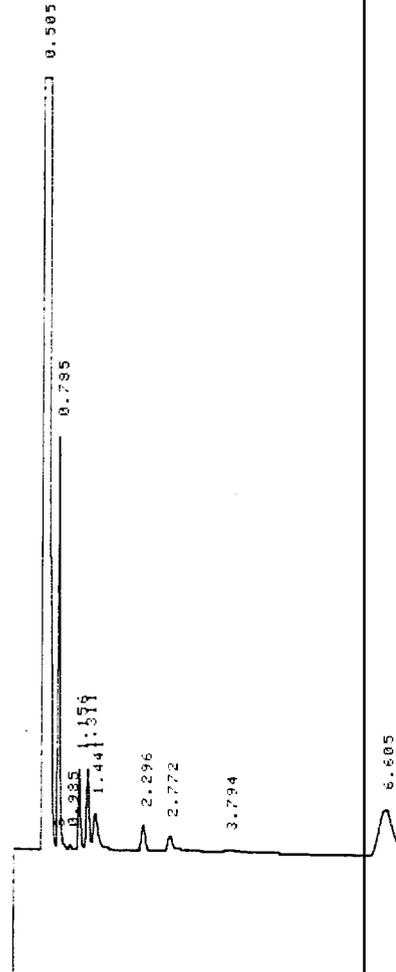
AREA#	RT	WREN TYPE	WIDTH	WREN#
.513	19785504	>SPB	.038	87.58957
.787	206678	BB	.039	.91495
1.160	45597	PV	.047	.20186
1.311	71575	VV	.065	.31686
1.442	379243	VV	.106	4.33587
1.735	79088	VB	.089	.35012
2.298	27839	BV	.085	.12351
2.772	30528	VV	.120	.13515
2.968	31747	VV	.130	.14054
3.244	31593	VP	.144	.13982
3.813	29114	PB	.196	.12889
4.876	36730	BB	.244	.18260
6.605	1233619	PB	.303	5.46118

TOTAL WREN#2.2589E+07  
 MUL FACTOR=1.0000E+00

*Revised*

\* RUN # 136 JUN 24, 1992 15:12:130

START

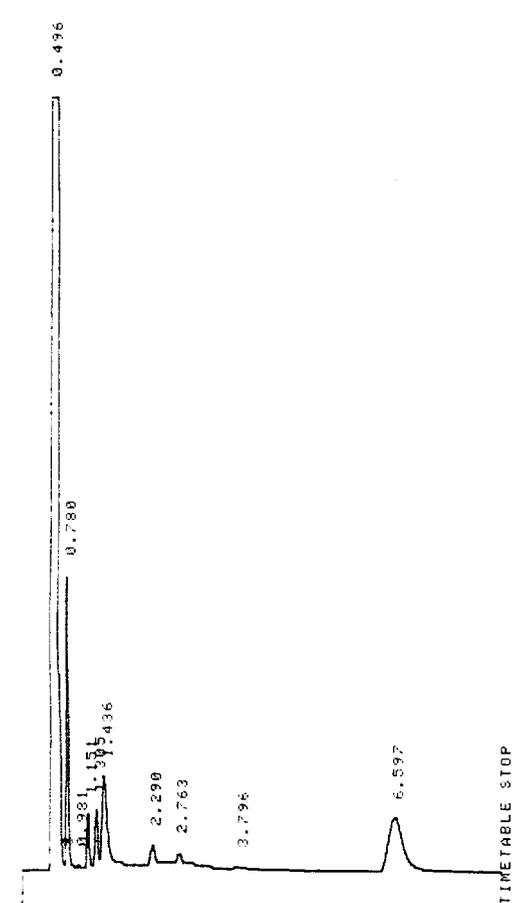


RUN# 136 JUN 24, 1992 15:12:130

AREA#	RT	WREN TYPE	WIDTH	WREN#
.505	33269326	>SBB	.064	94.61786
.785	611514	BB	.038	1.73920
.995	10658	PP	.042	.03023
1.156	152061	PV	.048	.43247
1.311	179259	VV	.076	.50982
1.441	168246	VB	.113	.47851
2.296	86460	PP	.082	.24590
2.772	62414	VB	.100	.17751
3.794	55678	PV	.277	.15833
6.605	566165	PB	.308	1.61022

TOTAL WREN#3.5161E+07

\* RUN # 137 JUN 24, 1992 15136125 OVEN

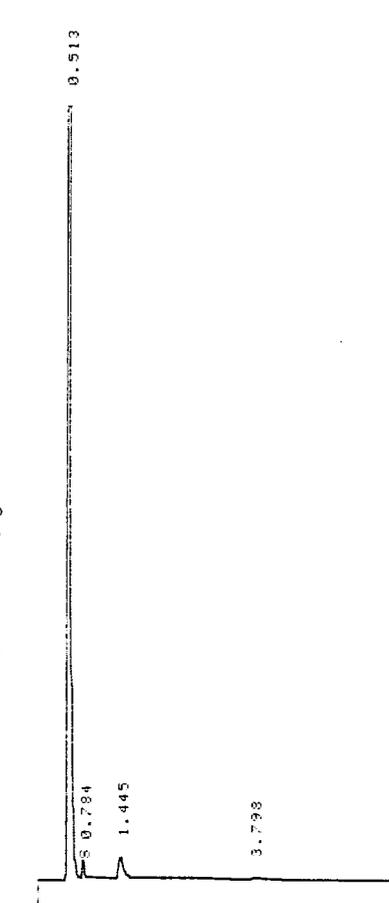


RUN # 137 JUN 24, 1992 15136125

AREA%  
TOTAL AREA=3.1052E+07  
MUL FACTOR=1.0000E+00

RT	AREA	TYPE	WIDTH	AREA%
.496	28972192	>SPB	.056	93.38134
.780	419728	BB	.038	1.35168
1.151	102653	PV	.048	.33058
1.385	131381	VV	.058	.42477
1.436	397833	VV	.113	1.27868
2.290	175719	VV	.187	.56588
2.763	158813	VV	.240	.50886
3.796	58666	VV	.288	.18893
6.597	636393	PB	.307	2.04939

\* RUN # 138 JUN 24, 1992 15145140 OVEN



RUN # 138 JUN 24, 1992 15145140

0.014

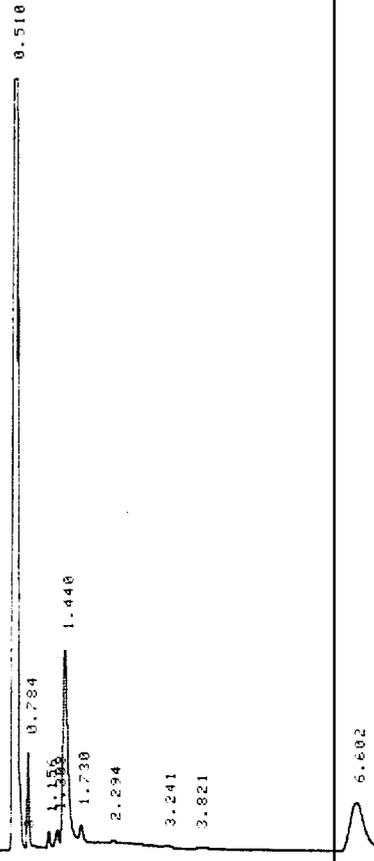
TIMETABLE STOP

RUN# 138 JUN 24. 1992 15145140

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.513	3975877	SHB	.038	92.54163	
.784	30364	BB	.040	.70675	
1.445	89314	PV	.104	2.07885	
3.798	55585	PP	.289	1.29378	
6.614	145172	FB	.307	3.37899	

TOTAL AREA=4295310  
 MUL FACTOR=1.0000E+00

R \* RUN # 139 JUN 24. 1992 15154140 OVER  
 START



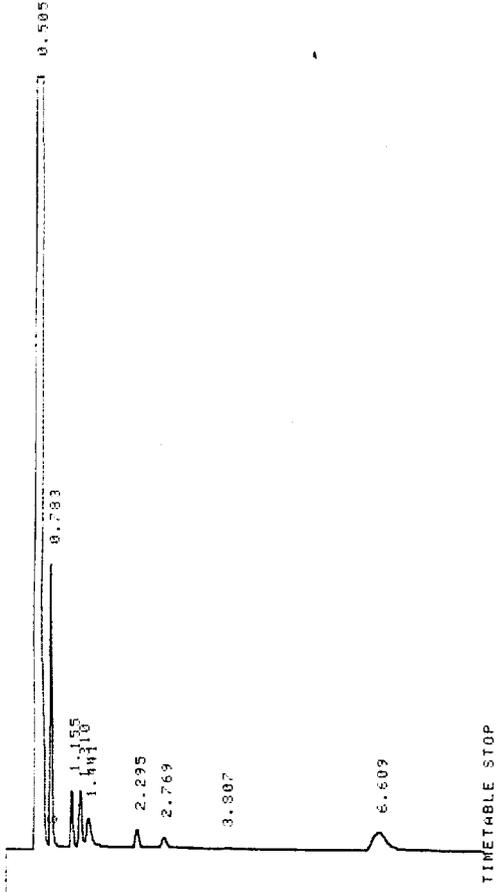
TIMETABLE STOP

RUN# 139 JUN 24. 1992 15154140

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.510	14933456	SHB	.038	89.45274	
.784	147480	BB	.039	.80347	
1.156	29768	PV	.046	.17831	
1.308	46684	VV	.064	.27964	
1.440	783684	VV	.105	4.69434	
1.730	67581	VB	.084	.40482	
2.294	26808	BV	.111	.19058	
3.241	23715	VP	.137	.14205	
3.821	42381	FB	.278	.25387	
6.602	593591	FB	.306	3.55021	

TOTAL AREA=1.6694E+07

X \* RUN # 140 JUN 24, 1992 16:03:45 *Wanted*

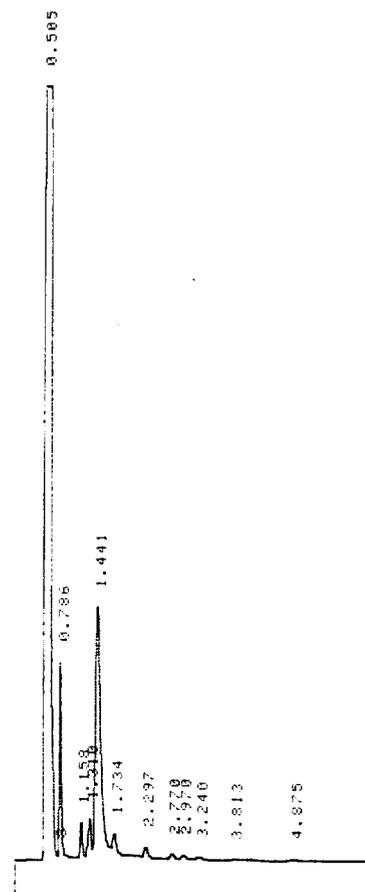


RUN# 140 JUN 24, 1992 16:03:45

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.505	29197520	>SBB	.056	96.17702
	.793	422975	BB	.038	1.33329
	1.155	182373	PV	.047	.93919
	1.310	123249	VV	.056	.40598
	1.441	128557	VV	.110	.42347
	2.295	58556	PB	.080	.18630
	2.769	48080	BV	.110	.15838
	3.907	43935	PP	.291	.14110
	6.609	235369	PB	.315	.77531

TOTAL AREA=3.0358E+07  
MUL FACTOR=1.0000E+00

\* RUN # 141 JUN 24, 1992 16:13:10 *DUEN*



RUN# 141 JUN 24, 1992 16:13:10

AREA#	RT	AREA	TYPE	WIDTH	AREA%
	.505	29197520	>SBB	.056	96.17702
	.793	422975	BB	.038	1.33329
	1.155	182373	PV	.047	.93919
	1.310	123249	VV	.056	.40598
	1.441	128557	VV	.110	.42347
	2.295	58556	PB	.080	.18630
	2.769	48080	BV	.110	.15838
	3.907	43935	PP	.291	.14110
	6.609	235369	PB	.315	.77531

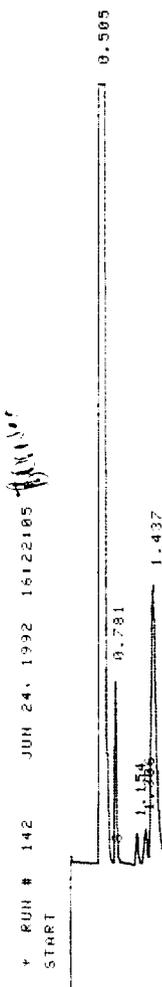
TOTAL AREA=3.0358E+07  
MUL FACTOR=1.0000E+00

TIMETABLE STOP

RUN# 141 JUN 24, 1992 16:13:10

RT	AREA	TYPE	WIDTH	AREA%
.505	2496022	>SFB	.048	91.36739
.795	299199	BB	.039	1.06214
1.158	64487	PV	.047	.23656
1.310	94463	VV	.064	.34695
1.441	999520	VV	.105	3.67106
1.734	81592	VB	.089	.29967
2.297	36172	VB	.091	.13285
2.770	24854	BV	.094	.09132
2.970	27175	VV	.111	.09981
3.240	26451	VP	.137	.09715
3.813	37508	PV	.246	.13776
4.875	37865	PB	.245	.13907
6.605	647570	PB	.307	2.37841

TOTAL AREA=2.7227E+07  
MUL FACTOR=1.0000E+00

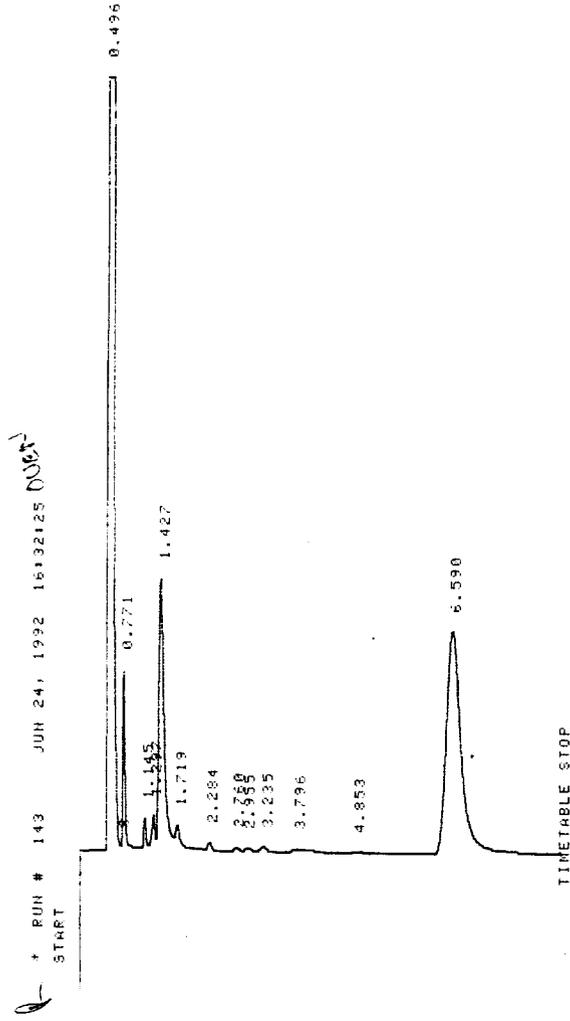


RUN# 142 JUN 24, 1992 16:22:05

RT	AREA	TYPE	WIDTH	AREA%
.505	24391246	>SFB	.047	89.57837
.791	269958	BB	.038	.98001
1.154	58843	PV	.047	.21369
1.306	87457	VV	.064	.31761

1.729	66363	VB	.088	.31363
2.294	31699	PB	.079	.11512
2.769	35542	BV	.127	.13258
2.965	40989	VV	.139	.14885
3.237	46278	VP	.162	.16906
3.812	50424	PV	.337	.18312
4.862	39768	VB	.257	.14876
6.600	128035	PB	.303	4.64969

TOTAL AREA=2.7536E+07  
MUL FACTOR=1.0000E+00



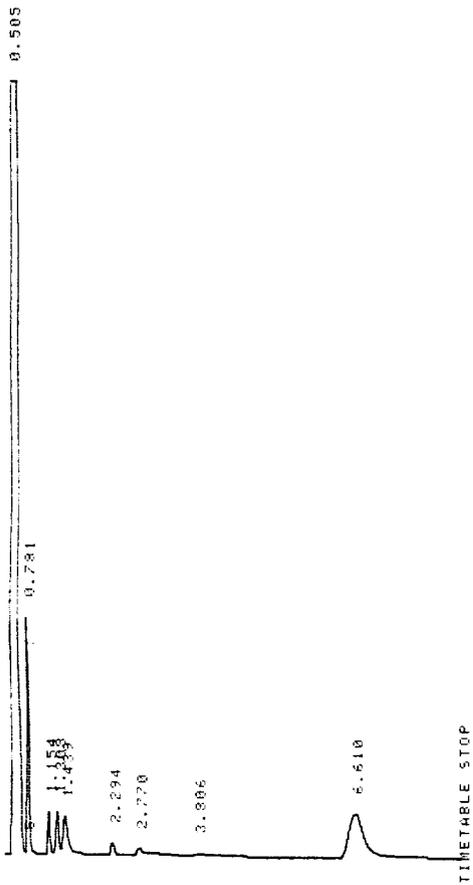
RUN# 143 JUN 24, 1992 16:32:25

AREA:	RT	AREA	TYPE	WIDTH	AREA%
	.496	23892752	>SIB	.844	84.15120
	.771	256727	BB	.038	.93593
	1.145	58007	BV	.047	.21147
	1.297	87228	VV	.066	.31797
	1.427	1102380	VV	.107	4.01887
	1.719	110822	VV	.111	.40402
	2.284	32503	VP	.083	.11849
	2.760	24458	VV	.099	.08916
	2.955	27953	VV	.124	.10191
	3.235	40678	VP	.149	.14830
	3.796	49310	PV	.244	.17977
	4.853	31193	PB	.233	.11372
	6.590	2526109	PB	.301	9.20926

TOTAL AREA=2.7430E+07  
MUL FACTOR=1.0000E+00

\* RUN # 144 JUN 24, 1992 16:41:25  
START

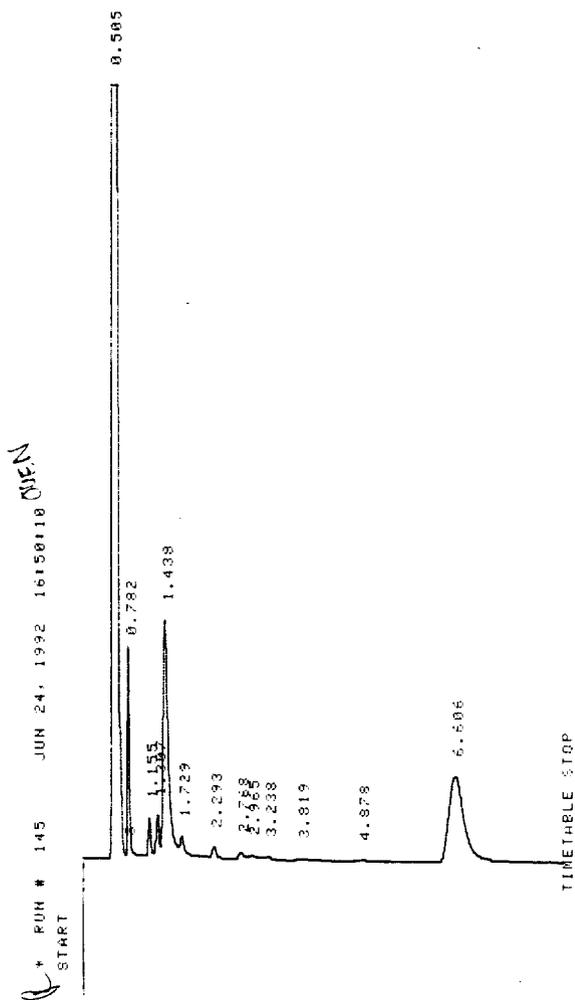
*Handwritten signature*



RUN# 144 JUN 24. 1992 16:41:25

RT	AREA	TYPE	WIDTH	AREA%
.505	26734160	>SPB	.051	95.07750
.781	346579	BB	.038	1.23250
1.154	80402	PV	.047	.28594
1.308	100448	VV	.050	.35723
1.439	176216	VB	.115	.62705
2.294	44658	PB	.082	.15882
2.770	42413	BV	.118	.15084
3.806	53346	PV	.206	.18972
6.610	53968	PB	.309	1.92035

TOTAL AREA=2.8118E+07  
MUL FACTOR=1.0000E+00



RUN # 145 JUN 24. 1992 16:50:10 OPEN

RT	AREA	TYPE	WIDTH	AREA%
.505	26734160	>SPB	.051	95.07750
.782	346579	BB	.038	1.23250
1.155	80402	PV	.047	.28594
1.308	100448	VV	.050	.35723
1.439	176216	VB	.115	.62705
2.293	44658	PB	.082	.15882
2.770	42413	BV	.118	.15084
3.806	53346	PV	.206	.18972
6.610	53968	PB	.309	1.92035

TOTAL AREA=2.8118E+07  
MUL FACTOR=1.0000E+00

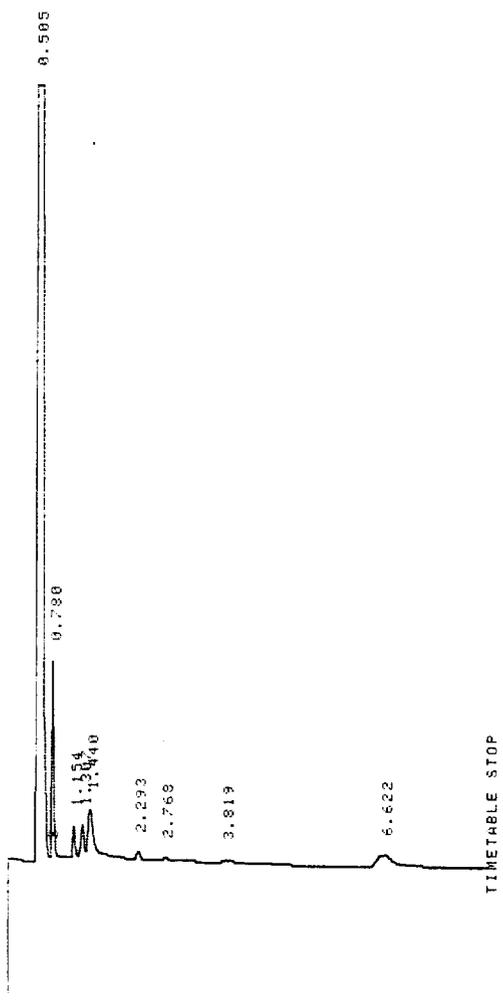
PUN# 145 JUN 24, 1992 16150110

RT	AREA	TYPE	WIDTH	AREA%
.505	2537176	SPB	.049	90.25269
.782	388296	BB	.638	1.09629
1.155	71758	PV	.047	.25532
1.307	182728	VV	.063	.36547
1.438	950304	VV	.106	3.38880
1.729	72803	VB	.090	.25900
2.293	36404	BB	.077	.12951
2.768	29639	EV	.099	.18544
2.965	29164	VV	.132	.10020
3.239	29292	VF	.145	.10421
3.819	53690	PP	.299	.19101
4.878	37797	PB	.252	.13447
6.622	1016168	PB	.305	3.61512

TOTAL AREA=2.8109E+07  
 MUL FACTOR=1.0000E+06

*Handwritten:* OK

X \* RUN # 145 JUN 24, 1992 16159101  
 START



PUN# 146 JUN 24, 1992 16159101

RT	AREA	TYPE	WIDTH	AREA%
.505	2528720	SPB	.049	96.48515
.780	292072	BB	.099	1.11444
1.154	60335	EV	.049	.22984
1.307	94770	VV	.065	.32345
1.440	21289	VB	.112	.81802
2.293	29592	BB	.079	.11297
2.768	18008	EP	.089	.06871
3.819	6204	PB	.270	.23735
6.622	162022	PB	.311	.61822

\* RUN # 147 JUN 24, 1992 17:09:35 80.7 ppm Methane BUREAU HEAD SPACE

START  
0.778  
STOP 1.272 0.505

RUN# 147 JUN 24, 1992 17:09:35

AREA2  
RT AREA TYPE WIDTH AREA%  
.505 3450005 ISBH .048 99.53384  
1.272 15349 ITVB .353 4.6815

TOTAL AREA=3450034  
MUL FACTOR=1.0000E+00

\* RUN # 148 JUN 24, 1992 17:12:23 80.7 ppm Methane BUREAU HEAD SPACE

START  
0.779  
STOP 0.500

RUN# 148 JUN 24, 1992 17:12:23

AREA2  
RT AREA TYPE WIDTH AREA%  
.500 2957360 SHB .036 100.00000

TOTAL AREA=2957360  
MUL FACTOR=1.0000E+00

\* RUN # 149 JUN 24, 1992 17:15:15 197.1 ppm METHANE BUREAU HEAD SPACE

START  
0.779  
STOP 0.505

RUN# 149 0115119

AREA% RT AREA TYPE WIDTH AREA%  
.505 7504093 SHB .035 100.00000

TOTAL AREA=7504093  
MUL FACTOR=1.0000E+00

*Q* \* RUN # 150 JUN 24, 1992 17:17:11.9 1911 ppm AREA% ~ OPEN HEAT TRACE  
START! not ready

0.217  
STOP 0.795 0.519

RUN# 150 JUN 24, 1992 17:17:11.9

AREA% RT AREA TYPE WIDTH AREA%  
.217 179645 PB .125 2.34541  
.519 7479792 SHB .037 97.65459

TOTAL AREA=7659437  
MUL FACTOR=1.0000E+00

\*  
HIGH LEVEL CIV QC → HEAT TRACE

T \* RUN # 151 JUN 24, 1992 17:20:11.0 178 ppm AREA% BURSE

START  
STOP 0.785 0.505

RUN# 151 JUN 24, 1992 17:20:11.0

AREA: PT AREA TYPE WIDTH AREA  
 .505 24267904 SHB .047 99.91088  
 .785 21649 BB .038 .09313

TOTAL AREA=2.4296E+07  
 MUL FACTOR=1.0000E+00

\* RUN # 152 JUN 24, 1992 17:22:00  
 START STOP 0.778 0.503  
*Metformin 800*  
*Metformin 800*  
*DOEN*

RUN# 152 JUN 24, 1992 17:22:00

AREA: RT AREA TYPE WIDTH AREA  
 .503 14664936 SHB .037 99.92384  
 .778 11332 I BP .039 .07618

TOTAL AREA=1.4876E+07  
 MUL FACTOR=1.0000E+00

\* RUN # 153 JUN 24, 1992 17:24:52  
 START STOP 0.781 0.505  
*Metformin 800*  
*Metformin 800*  
*DOEN*

RUN# 153 JUN 24, 1992 17:24:52

AREA: RT AREA TYPE WIDTH AREA  
 .505 21378000 SHB .041 99.90506  
 .781 20318 BB .040 .09496

TOTAL AREA=2.1356E+07  
 MUL FACTOR=1.0000E+00

\* RUN # 154 JUN 24, 1992 17:28:20  
 START STOP 0.563 0.496  
*Metformin 800*  
*Metformin 800*  
*DOEN*

RUN# 154 JUN 24, 1992 17:28:20

AREA: RT AREA TYPE WIDTH AREA  
 .563 116974 SHB .271 .34915  
 .496 33385616 SHB .064 99.55085

TOTAL AREA=3.3583E+07  
MUL FACTOR=1.0000E+00

*2000mm medium OVEN*

\* RUN # 155 JUN 24, 1992 17130128  
START not ready



RUN# 155 JUN 24, 1992 17130128

AREA%	RT	AREA TYPE	WIDTH	AREA%
.488	33438609	>SHB	.054	97.07190
1.001	1000553	BY	.304	2.92811

TOTAL AREA=3.4447E+07  
MUL FACTOR=1.0000E+00

*3000mm medium Boxer*

\* RUN # 156 JUN 24, 1992 17133150  
START



RUN# 156 JUN 24, 1992 17133150

AREA%	RT	AREA TYPE	WIDTH	AREA%
.496	39161120	>SHB	.075	100.00000

TOTAL AREA=3.9161E+07  
MUL FACTOR=1.0000E+00

*3000mm medium OVEN*

\* RUN # 157 JUN 24, 1992 17135142  
START



RUN# 157 JUN 24, 1992 17135142

AREA%	RT	AREA TYPE	WIDTH	AREA%
.498	39109560	>SHB	.075	100.00000

TOTAL AREA=3.9110E+07  
MUL FACTOR=1.0000E+00

*FINAL CALCULATION 0-7-92*

778 ppm Methane

\* RUN # 158 JUN 24, 1992 17:39:50  
START  
STOP  
30.778 0.496

RUN# 158 JUN 24, 1992 17:39:50  
AREA% RT AREA TYPE WIDTH AREA%  
.496 24205264 >SHB .047 99.92752  
.778 17562 88 .037 .07250

TOTAL AREA=2.4223E+07  
MUL FACTOR=1.0000E+00

366 ppm Methane

\* RUN # 159 JUN 24, 1992 17:42:32  
START  
STOP  
6 0.496

RUN# 159 JUN 24, 1992 17:42:32  
AREA% RT AREA TYPE WIDTH AREA%  
.496 32948592 >SPB .063 100.00000

TOTAL AREA=3.2941E+07  
MUL FACTOR=1.0000E+00

366 ppm Methane

\* RUN # 160 JUN 24, 1992 17:45:19  
START  
STOP  
6 0.496

STOP

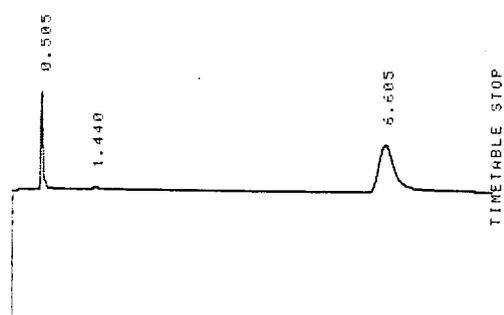
RUN# 160 JUN 24, 1992 17145149

AREA%	RT	AREA TYPE	WIDTH	AREA%
.092	11498	PB	.097	.02949
.488	38981056	>SBB	.075	99.97853

TOTAL AREA=3.8993E+07  
 MUL FACTOR=1.0000E+00

*HEAT TRACE QC*  
*HEAT TRACE QC*  
*HEAT TRACE QC*

\* RUN # 161 JUN 24, 1992 17149105  
 START



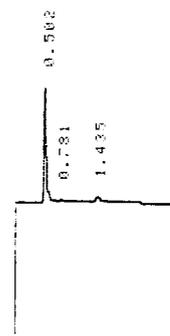
RUN# 161 JUN 24, 1992 17149105

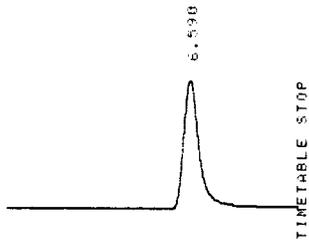
AREA%	RT	AREA TYPE	WIDTH	AREA%
.505	153721	BB	.040	20.20837
1.440	18934	PB	.113	2.48989
6.605	589025	PB	.318	77.30256

TOTAL AREA= 768800  
 MUL FACTOR=1.0000E+00

*HEAT TRACE QC*  
*HEAT TRACE QC*  
*HEAT TRACE QC*

\* RUN # 162 JUN 24, 1992 17159140  
 START



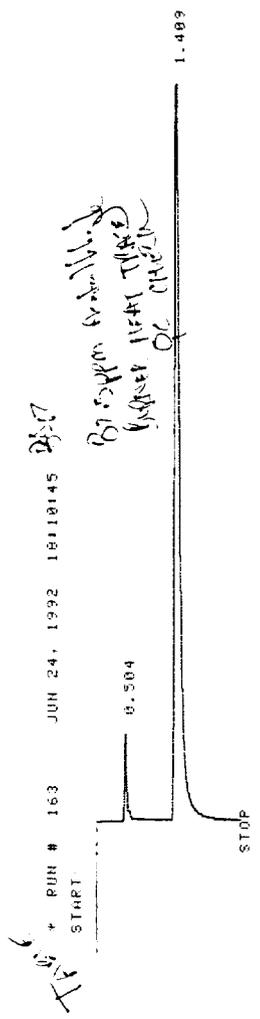


TINETABLE STOP

RUN# 162 JUN 24, 1992 17:59:149

RT	AREA	TYPE	WIDTH	AREA%
6.530	186934	VB	.042	11.10561
1.435	32461	VV	.110	1.92848
6.590	1463845	PB	.301	86.96592

TOTAL AREA=1693248  
MUL FACTOR=1.0000E+00



START

RUN # 163 JUN 24, 1992 18:11:0145

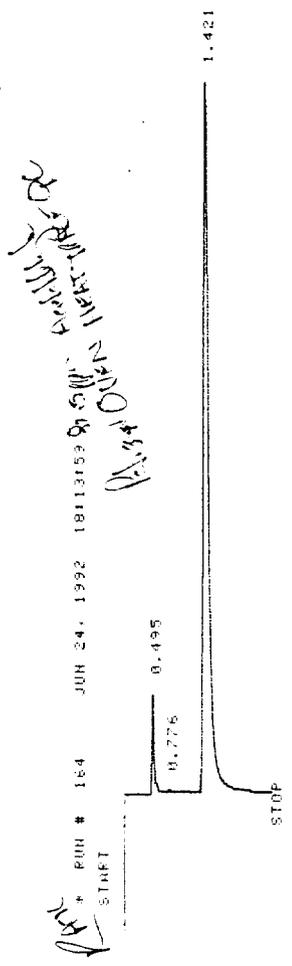
RT	AREA	TYPE	WIDTH	AREA%
0.504	141961	VB	.044	4.78577
1.409	2824357	PB	.101	95.21424

TOTAL AREA=2966317  
MUL FACTOR=1.0000E+00

RUN# 164 JUN 24, 1992 18:11:0145

RT	AREA	TYPE	WIDTH	AREA%
0.776	141961	VB	.044	4.78577
1.409	2824357	PB	.101	95.21424

TOTAL AREA=2966317  
MUL FACTOR=1.0000E+00



START

RUN # 164 JUN 24, 1992 18:11:0145

RT	AREA	TYPE	WIDTH	AREA%
0.495	141961	VB	.044	4.78577
1.409	2824357	PB	.101	95.21424

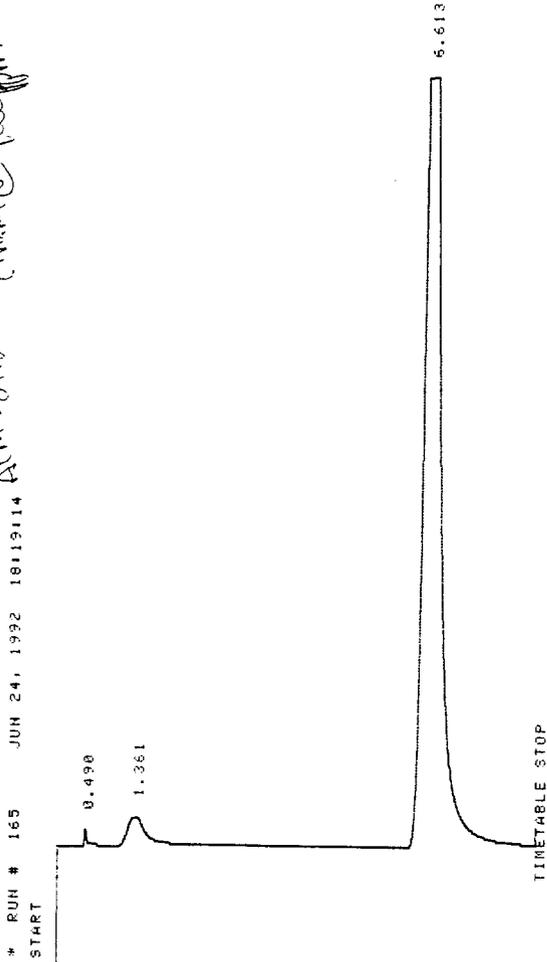
TOTAL AREA=2966317  
MUL FACTOR=1.0000E+00

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.495	151324	VB	.043	5.55109	
1.421	2744946	PB	.103	94.44893	

TOTAL AREA=2986170  
 MUL FACTOR=1.0000E+00

FINN, CAL

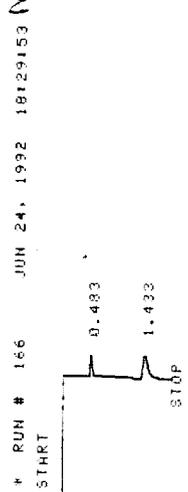
ALM-011008 Final @ 400 ppm



AREA%	RT	AREA	TYPE	WIDTH	AREA%
.490	31925	VB	.047	.22514	
1.361	409347	BB	.355	3.52794	
6.613	11161720	PB	.289	96.19690	

TOTAL AREA=1.1600E+07  
 MUL FACTOR=1.0000E+00

NEW YORK @ 200 ppm. AIR. 13174

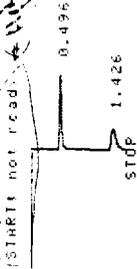


AREA%	RT	AREA	TYPE	WIDTH	AREA%
.483	30587	BB	.035	22.83090	

TOTAL AREA=1.1600E+07  
 MUL FACTOR=1.0000E+00

TOTAL AREA= 133972  
MUL FACTOR=1.0000E+00

\* RUN # 167 JUN 24, 1992 18133152



RUN# 167 JUN 24, 1992 18133152

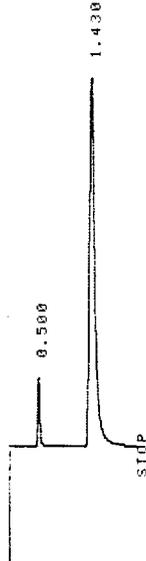
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.496	119741	VB	.043	56.19610
1.426	93374	I PH	.105	43.81390

TOTAL AREA= 213115  
MUL FACTOR=1.0000E+00

*Handwritten note:* 11.52 (pm) ~~1.426~~ ~~1.430~~ ~~1.425~~

\* RUN # 168 JUN 24, 1992 18137105



RUN# 168 JUN 24, 1992 18137105

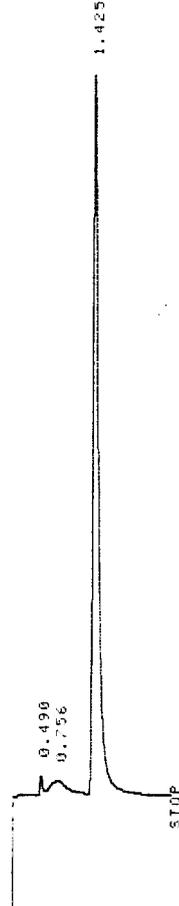
AREA:

RT	AREA	TYPE	WIDTH	AREA%
.500	115476	VB	.042	7.39003
1.430	144716	PB	.104	92.60995

TOTAL AREA=156292  
MUL FACTOR=1.0000E+00

*Handwritten note:* 11.52 (pm) ~~1.426~~ ~~1.430~~ ~~1.425~~

\* RUN # 169 JUN 24, 1992 18139145



RUN# 169 JUN 24, 1992 18139145

AREA:

.490 38831 BY .048 1.22799  
 .756 188388 VP .328 6.88298  
 1.425 2878592 PE .105 92.89912

TOTAL AREA=3897811  
 MUL FACTOR=1.0000E+00

\* RUN # 170 JUN 24, 1992 18:47:26 (12 Dil. 77%) Gds from Methionine  
 START 0.190  
 STOP 0.776 0.501

RUN# 170 JUN 24, 1992 18:47:26

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.138	12836	86		.065	.12924
.501	9913072	868		.037	99.87875

TOTAL AREA=9.2319E+06  
 MUL FACTOR=1.0000E+00

\* RUN # 171 JUN 24, 1992 18:51:55 (17 Dil. 77%) 377 from Methionine  
 START 0.134  
 STOP 0.777 0.502

RUN# 171 JUN 24, 1992 18:51:55

AREA%	RT	AREA	TYPE	WIDTH	AREA%
.502	14824264	SPB		.037	99.92682
.777	10859	BP		.043	.07320

TOTAL AREA=1.4835E+07  
 MUL FACTOR=1.0000E+00

\* LIST: LIST  
 PEAK CAPACITY: 1244

ZERO = 5.0111  
 ATT 2 = 6  
 CHT SP = 1.0

Appendix C.5

Field Flow Measurements Data Sheets















PRELIMINARY VELOCITY TRAVERSE

PLANT EASTON - BAKERY  
 DATE 6-22-92  
 LOCATION Readco Burner #2, #1  
 INSIDE STACK DIMENSIONS 12'  
 BAROMETRIC PRESSURE in. Hg \_\_\_\_\_  
 STACK GAUGE PRESSURE in. H<sub>2</sub>O \_\_\_\_\_  
 OPERATOR JBP

STATIC -0.12

~~H 2~~

Static -0.06

B.B. #1  
Run 2

SCHEMATIC OF TRAVERSE POINT LAYOUT

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in. H <sub>2</sub> O	STACK TEMPERATURE (°F)
<del>A 1</del>	<del>.03</del>	<del>450-375</del>
<del>2</del>	<del>.05</del>	<del>381</del>
<del>3</del>	<del>.05</del>	<del>377-352</del>
<del>4</del>	<del>.04</del>	<del>357</del>
B 1		
2		
3		
4		
A 4	.04	490
3	.045	502
2	.04	501
1	.035	480
B 4	.045	507
3	.05	515
2	.04	492
1	.035	478

B.B. #2  
Run 2

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in. H <sub>2</sub> O	STACK TEMPERATURE (°F)
B 4	.025	448
3	.025	465
2	.02	454
1	.015	446
A 4	.025	445
3	.03	448
2	.025	447
1	.02	436

Figure 6-6. Preliminary Velocity and Cyclonic Flow Sheet.

AVERAGE

1000 hrs Peterson Burner Oven  
 Temp 434  
 298

Readco Burner 1 539 °F  
 (front burner Burner 2 487 °F  
 Oven @ 10:00 116 °F  
 Oven @ 10:57 107 °F

Flow

6/24/92  
 Bakery S.

11:00 hrs  
 492 °F  
 528 °F

.03, .04, .05, .05  
 10:00  
 40, 40, 50, 50

50, ~50, 30

Flows 1100 hrs.

Point	Readco Burner 2	Burner 1	Oven
1	.03	.025	
2	.045	.03	
3	.05	.035	
4	.05	.035	

1215-TEMP Peterson Burner 391  
 Oven 333

Readco

Flows 1400 hrs

Point	# 1	# 2	Oven
1	.03/437	.045/475	30 f/m/119
2	.035/484	.05/474	45 f/m/119
3	.04/486	.055/476	60 f/m/119
4	.035/491	.05/474	No reach/118
5		.045	
1	.03/428	.05/471	40 f/m/118
2	.03/431	.05/482	50 f/m/118
3	.03/436	.055/490	60 f/m/120
4	.03/437	.05/467	No reach/119
STATIC	-0.06	-0.14	

Peterson

1445 hrs Burner

STATIC -0.14  
 Oven

1	.02	418	
2	.015	425	
3	.02	435	
4	.02	424	
5	.035	421	
6	.03	430	
7	.02	434	
8	.02	435	
1			.52/302
2			.56/306
3			.62/304
4			.40/302
5			.53/301



PRELIMINARY VELOCITY TRAVERSE

PLANT Euston Bakery Site 3  
 DATE 6-24-92  
 LOCATION ReadCo Burner #1 + #2 10cm  
 INSIDE STACK DIMENSIONS 12"  
 BAROMETRIC PRESSURE in. Hg \_\_\_\_\_  
 STACK GAUGE PRESSURE in. H<sub>2</sub>O \_\_\_\_\_  
 OPERATOR JRP

Time 1400 hrs.

BB #1  
run 1

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in. H <sub>2</sub> O	STACK TEMPERATURE (F)
A 1	0.03	437
2	0.035	484
3	0.04	486
4	0.035	481
B 1	0.03	428
2	0.03	431
3	0.03	436
4	0.03	437
<del>ONE</del>		
A 1	30 f/m	119
2	45 f/m	119
3	60 f/m	119
4	No Reach	118
B 1	40 f/m	118
2	50 f/m	118
3	60 f/m	120
4	No Reach	119

DD  
Run 2

BB #2  
run 1

SCHEMATIC OF TRAVERSE POINT LAYOUT

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in. H <sub>2</sub> O	STACK TEMPERATURE (F)
A 1	0.045	475
2	0.05	474
3	0.055	476
4	0.05	474
B 1	0.045	471
2	0.05	482
3	0.055	490
4	0.05	467

Figure 6-6. Preliminary Velocity and Cyclonic Flow Sheet.

AVERAGE

Appendix C.6  
Field H2O Data Sheets











**MOISTURE RECOVERY FORM FOR METHOD 4**

PLANT EASTON BAKERY  
 DATE 6-22-92  
 RUN NUMBER 1  
 SAMPLING LOCATION Readco Burner #1  
 SAMPLING TYPE M4  
 SAMPLING BOX NUMBER \_\_\_\_\_  
 CLEAN-UP PERSON \_\_\_\_\_  
 SOLVENT RINSES \_\_\_\_\_  
 SAMPLE IDENTIFICATION CODE \_\_\_\_\_  
 XAD TRAP NUMBER \_\_\_\_\_

IMPINGER NUMBER	IMPINGER SOLUTION	AMOUNT OF SOLUTION (g)	IMPINGER TIP CONFIGURATION	IMPINGER WEIGHT (grams)		
				FINAL	INITIAL	WEIGHT GAIN
1	H <sub>2</sub> O			594.5	560.4	34.1
2	H <sub>2</sub> O			620.7	616.4	4.3
3	MT			478.9	478.2	0.7
4	Silica Gel			746.5	743.2	3.3

Revision: 3/80

TOTAL WEIGHT GAIN (grams)

42.4

**Figure 6-8. Method 4 Train Preparation and Recovery Sheet.**

**MOISTURE RECOVERY FORM FOR METHOD 4**

PLANT EASTON BAKERY  
 DATE 6-22-92  
 RUN NUMBER 1  
 SAMPLING LOCATION Reaco - Oven  
 SAMPLING TYPE M4  
 SAMPLING BOX NUMBER \_\_\_\_\_  
 CLEAN-UP PERSON \_\_\_\_\_  
 SOLVENT RINSES \_\_\_\_\_  
 SAMPLE IDENTIFICATION CODE \_\_\_\_\_  
 XAD TRAP NUMBER \_\_\_\_\_

MPINGER NUMBER	MPINGER SOLUTION	AMOUNT OF SOLUTION (g)	MPINGER TP CONFIGURATION	MPINGER WEIGHT (grams)		
				FINAL	INITIAL	WEIGHT GAIN
1	H <sub>2</sub> O			605.0	594.5	10.5
2	H <sub>2</sub> O			621.9	620.7	1.2
3	MT			479.3	478.9	0.4
4	Silica Gel			749.9	746.5	3.4

Revision: 3/90

TOTAL WEIGHT GAIN (grams)

15.5

**Figure 6-8. Method 4 Train Preparation and Recovery Sheet.**

**MOISTURE RECOVERY FORM FOR METHOD 4**

PLANT Easton Bakery  
 DATE 6-22-92  
 RUN NUMBER 1  
 SAMPLING LOCATION Roaddco Burner #2  
 SAMPLING TYPE M4  
 SAMPLING BOX NUMBER \_\_\_\_\_  
 CLEAN-UP PERSON \_\_\_\_\_  
 SOLVENT RINSES \_\_\_\_\_  
 SAMPLE IDENTIFICATION CODE \_\_\_\_\_  
 XAD TRAP NUMBER \_\_\_\_\_

IMPINGER NUMBER	IMPINGER SOLUTION	AMOUNT OF SOLUTION (g)	IMPINGER TIP CONFIGURATION	IMPINGER WEIGHT (grams)		
				FINAL	INITIAL	WEIGHT GAIN
1	H <sub>2</sub> O			641.3	596.1	45.2
2	H <sub>2</sub> O			616.4	612.9	3.5
3	MTI			478.2	477.6	0.6
4	Silica Gel			743.2	739.0	4.2

Revised 3/80

TOTAL WEIGHT GAIN (grams) 53.5

**Figure 6-8. Method 4 Train Preparation and Recovery Sheet.**

**MOISTURE RECOVERY FORM FOR METHOD 4**

PLANT Bakery - Easton  
 DATE 6-22-92  
 RUN NUMBER 1  
 SAMPLING LOCATION Peterson Burner  
 SAMPLING TYPE Moisture  
 SAMPLING BOX NUMBER 1  
 CLEAN-UP PERSON \_\_\_\_\_  
 SOLVENT RINSES \_\_\_\_\_  
 SAMPLE IDENTIFICATION CODE \_\_\_\_\_  
 XAD TRAP NUMBER \_\_\_\_\_

IMPINGER NUMBER	IMPINGER SOLUTION	AMOUNT OF SOLUTION (g)	IMPINGER TP CONFIGURATION	IMPINGER WEIGHT (grams)		
				FINAL	INITIAL	WEIGHT GAIN
1	H <sub>2</sub> O		10-	596.1	584.3	11.8
2	H <sub>2</sub> O			612.9	610.3	2.6
3	MT			477.6	476.7	0.9
4	Silica Gel			739.0	734.6	4.4

Revision: 3/90

TOTAL WEIGHT GAIN (grams)

19.7

**Figure 6-8. Method 4 Train Preparation and Recovery Sheet.**

**MOISTURE RECOVERY FORM FOR METHOD 4**

PLANT EASTON- BAKERY  
 DATE 6-22-92  
 RUN NUMBER 1  
 SAMPLING LOCATION Peterson - Oven  
 SAMPLING TYPE M4  
 SAMPLING BOX NUMBER \_\_\_\_\_  
 CLEAN-UP PERSON \_\_\_\_\_  
 SOLVENT RINSES \_\_\_\_\_  
 SAMPLE IDENTIFICATION CODE \_\_\_\_\_  
 XAD TRAP NUMBER \_\_\_\_\_

IMPINGER NUMBER	IMPINGER SOLUTION	AMOUNT OF SOLUTION (g)	IMPINGER TIP CONFIGURATION	IMPINGER WEIGHT (grams)		
				FINAL	INITIAL	WEIGHT GAIN
1	H <sub>2</sub> O			626.8	605.0	21.8
2	H <sub>2</sub> O			623.8	621.9	1.9
3	MT			480.1	479.3	0.8
4	Silica Gel			753.7	749.9	3.8

Revised: 3/90

TOTAL WEIGHT GAIN (grams)

28.3

**Figure 6-8. Method 4 Train Preparation and Recovery Sheet.**

Appendix G.7  
Flow Calculations



PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION .....	BREAD BURNER	% O2.....	16.50
RUN .....	BREAD BURNER-RUN2	% CO2.....	3.00 **
AMBIENT TEMPERATURE	63.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	3.78 *
STATIC PRESSURE (in H2)	-0.07	MOLE FRAC. of DRY STACK GAS.....	0.96
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.66
METER ORIFICE dH (" H2)	NC	STACK DIAMETER (I .....	15.50
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	1.31
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.020	418	0.14	10.35	620.71
A2	0.015	425	0.12	8.99	539.69
A3	0.020	435	0.14	10.44	626.69
A4	0.020	424	0.14	10.38	622.83
A5	0.035	427	0.19	13.76	825.32
A6	0.030	430	0.17	12.76	765.39
A7	0.020	434.00	0.14	10.44	626.34
A8	0.020	435.00	0.14	10.44	626.69
Averages		428.50	0.15	10.94	656.70

STACK GAS ACTUAL VOL FLOW (acfm)	860.51
STACK GAS STANDARD VOL FLOW (scfm)	504.39
STACK GAS STANDARD DRY VOL FLOW (dscf)	485.32

\* ASSUMED FROM PREVIOUS RUN  
\*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	19.72
DATE .....	6/22/92	MOISTURE COLLECTED (g).....	28.30
SAMPLING LOCATION ....	BREAD OVEN	% O2.....	19.00 *
RUN .....	BREAD OVEN-RUN 1	% CO2.....	0.00 *
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.75	PERCENT MOISTURE IN STACK.....	6.34
STATIC PRESSURE (in H2)	-0.10	MOLE FRAC. of DRY STACK GAS.....	0.94
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	72.00	WET MOLECULAR W .....	28.38
METER ORIFICE dH (" H2)	1.50	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.)	20.02	STACK AREA (sq ft) .....	0.79
METER Y.....	0.9947		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.450	300	0.67	45.71	2742.37
A2	0.520	306	0.72	49.33	2959.58
A3	0.550	300	0.74	50.53	3031.81
A4	0.570	304	0.75	51.58	3094.55
A5	0.540	310	0.73	50.40	3023.83
A6	0.540	301	0.73	50.10	3006.10
B1	0.43	300.00	0.66	44.68	2680.74
B2	0.54	310.00	0.73	50.40	3023.83
B3	0.59	303.00	0.77	52.44	3146.31
B4	0.59	308.00	0.77	52.61	3156.61
B5	0.56	308.00	0.75	51.26	3075.31
B6	0.520	301	0.72	49.17	2949.90
Averages		304.25	0.73	49.85	2990.76

STACK GAS ACTUAL VOL FLOW (acfm) 2348.94  
 STACK GAS STANDARD VOL FLOW (scfm) 1612.94  
 STACK GAS STANDARD DRY VOL FLOW (dscf) 1510.71

\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION .....	BREAD OVEN	% O2.....	19.00 **
RUN .....	BREAD OVEN-RUN2	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	6.34 *
STATIC PRESSURE (in H2)	-0.10	MOLE FRAC. of DRY STACK GAS.....	0.94
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.38
METER ORIFICE dH (" H2)	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.520	302	0.72	49.39	2963.24
A2	0.560	306	0.75	51.39	3083.17
A3	0.620	304	0.79	54.00	3239.90
A4	0.400	302	0.63	43.32	2598.94
A5	0.530	301	0.73	49.83	2989.64
A6	0.520	299	0.72	49.29	2957.40
Averages		302.33	0.72	49.53	2971.95

STACK GAS ACTUAL VOL FLOW (acfm)	2334.16
STACK GAS STANDARD VOL FLOW (scfm)	1594.48
STACK GAS STANDARD DRY VOL FLOW (dscf)	1493.42

\* ASSUMED FROM A PREVIOUS RUN

\*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	19.01
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	53.50
SAMPLING LOCATION ....	BUN BURNER #2	% O2.....	19.00 *
RUN .....	BUN BURNER#2-RUN1	% CO2.....	0.00 *
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	11.72
STATIC PRESSURE (in H2	-0.12	MOLE FRAC. of DRY STACK GAS.....	0.88
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	65.83	WET MOLECULAR W .....	27.78
METER ORIFICE dH (" H2	1.50	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	19.22	STACK AREA (sq ft) .....	0.79
METER Y.....	0.9947		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.045	475	0.21	16.27	975.91
A2	0.050	474	0.22	17.14	1028.15
A3	0.055	476	0.23	17.99	1079.49
A4	0.050	474	0.22	17.14	1028.15
B1	0.045	471	0.21	16.23	973.82
B2	0.050	482	0.22	17.21	1032.54
B3	0.055	490.00	0.23	18.13	1087.53
B4	0.050	467.00	0.22	17.07	1024.29
<b>Averages</b>		<b>476.13</b>	<b>0.22</b>	<b>17.14</b>	<b>1028.67</b>

**STACK GAS ACTUAL VOL FLOW (acfm) 807.92**  
**STACK GAS STANDARD VOL FLOW (scfm) 449.47**  
**STACK GAS STANDARD DRY VOL FLOW (dscf) 396.80**

\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION ....	BUN BURNER #2	% O2.....	19.00 **
RUN .....	BUN BURNER#2-RUN2	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	11.72 *
STATIC PRESSURE (in H2)	-0.12	MOLE FRAC. of DRY STACK GAS.....	0.88
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	27.78
METER ORIFICE dH (" H2)	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.030	528	0.17	13.65	819.11
A2	0.045		0.21	11.41	684.40
A3	0.050		0.22	12.02	721.42
A4	0.050		0.22	12.02	721.42
Averages		528.00	0.21	16.41	984.31

STACK GAS ACTUAL VOL FLOW (acfm) 773.07  
 STACK GAS STANDARD VOL FLOW (scfm) 407.50  
 STACK GAS STANDARD DRY VOL FLOW (dscf) 359.75

\* ASSUMED FROM A PREVIOUS RUN  
 \*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION ....	BUN BURNER #2	% O2 .....	19.00 **
RUN .....	BUN BURNER#2-RUN3	% CO2 .....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.75	PERCENT MOISTURE IN STACK.....	11.72 *
STATIC PRESSURE (in H2	-0.12	MOLE FRAC. of DRY STACK GAS....	0.88
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	27.79
METER ORIFICE dH (" H2	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.040	490	0.20	15.40	923.79
A2	0.045	502	0.21	16.43	986.00
A3	0.040	501	0.20	15.49	929.13
A4	0.035	480	0.19	14.33	859.57
B1	0.045	507	0.21	16.48	988.56
B2	0.050	515	0.22	17.44	1046.34
B3	0.040	492.00	0.20	15.41	924.77
B4	0.035	478.00	0.19	14.31	858.65

Averages 495.63 0.20 15.65 939.29

STACK GAS ACTUAL VOL FLOW (acfm) 737.71  
 STACK GAS STANDARD VOL FLOW (scfm) 405.10  
 STACK GAS STANDARD DRY VOL FLOW (dscf) 357.95

\* ASSUMED FROM A PREVIOUS RUN  
 \*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	19.46
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	42.40
SAMPLING LOCATION ....	BUN BURNER #1	% O2.....	19.00 *
RUN .....	BUN BURNER#1-RUN1	% CO2.....	0.00 *
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	9.31
STATIC PRESSURE (in H2	-0.06	MOLE FRAC. of DRY STACK GAS....	0.91
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	68.83	WET MOLECULAR W .....	28.05
METER ORIFICE dH (" H2	1.50	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	19.79	STACK AREA (sq ft) .....	0.79
METER Y.....	0.9947		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.030	437	0.17	12.95	776.75
A2	0.035	484	0.19	14.34	860.69
A3	0.040	486	0.20	15.35	921.09
A4	0.035	481	0.19	14.32	859.32
B1	0.030	428	0.17	12.88	772.84
B2	0.030	431	0.17	12.90	774.15
B3	0.030	436.00	0.17	12.94	776.32
B4	0.030	437.00	0.17	12.95	776.75
Averages		452.50	0.18	13.57	814.28

STACK GAS ACTUAL VOL FLOW (acfm)                    639.53  
 STACK GAS STANDARD VOL FLOW (scfm)                365.00  
 STACK GAS STANDARD DRY VOL FLOW (dscf)            331.00

\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION ....	BUN BURNER #1	% O2.....	19.00 **
RUN .....	BUN BURNER#1-RUN2	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	9.31 *
STATIC PRESSURE (in H2	-0.06	MOLE FRAC. of DRY STACK GAS....	0.91
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.05
METER ORIFICE dH (" H2	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.025	492	0.16	12.17	730.49
A2	0.030		0.17	9.27	556.15
A3	0.035		0.19	10.01	600.71
A4	0.035		0.19	10.01	600.71
Averages		492.00	0.18	13.58	814.84
STACK GAS ACTUAL VOL FLOW (acfm)					639.98
STACK GAS STANDARD VOL FLOW (scfm)					350.10
STACK GAS STANDARD DRY VOL FLOW (dscf)					317.49

\* ASSUMED FROM A PREVIOUS RUN

\*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION .....	BUN BURNER #1	% O2.....	19.00 **
RUN .....	BUN BURNER#1-RUN3	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.75	PERCENT MOISTURE IN STACK.....	9.31 *
STATIC PRESSURE (in H2	-0.06	MOLE FRAC. of DRY STACK GAS....	0.91
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.05
METER ORIFICE dH (" H2	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1	0.025	448	0.16	11.84	710.65
A2	0.025	465	0.16	11.95	717.28
A3	0.020	454	0.14	10.63	637.73
A4	0.015	446	0.12	9.16	549.86
B1	0.025	445	0.16	11.82	709.48
B2	0.030	448	0.17	12.97	778.48
B3	0.025	447.00	0.16	11.84	710.26
B4	0.020	436.00	0.14	10.52	631.41
<b>Averages</b>		<b>448.63</b>	<b>0.15</b>	<b>11.34</b>	<b>680.59</b>

STACK GAS ACTUAL VOL FLOW (acfm)                    534.53  
 STACK GAS STANDARD VOL FLOW (scfm)                308.76  
 STACK GAS STANDARD DRY VOL FLOW (dscf)            279.99

\* ASSUMED FROM A PREVIOUS RUN  
 \*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	19.17
DATE .....	6/22/92	MOISTURE COLLECTED (g).....	15.50
SAMPLING LOCATION .....	BUN OVEN	% O2.....	19.00 *
RUN .....	BUN OVEN-RUN 1	% CO2.....	0.00 *
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.75	PERCENT MOISTURE IN STACK.....	3.67
STATIC PRESSURE (in H2	0.00	MOLE FRAC. of DRY STACK GAS.....	0.96
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	66.67	WET MOLECULAR W .....	28.67
METER ORIFICE dH (" H2	1.50	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.	19.26	STACK AREA (sq ft) .....	0.79
METER Y.....	0.9947		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1		90			49.00
A2		90			30.00
A3		90			60.00
A4		90			50.00
A5		90			30.00
A6		90			30.00
A7		90.00			50.00
A8		90.00			50.00
Averages		90.00			43.63
STACK GAS ACTUAL VOL FLOW (acfm)					34.26
STACK GAS STANDARD VOL FLOW (scfm)					32.69
STACK GAS STANDARD DRY VOL FLOW (dscf)					31.49

\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION .....	BUN OVEN	% O2.....	19.00 **
RUN .....	BUN OVEN - RUN 2	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	3.67 *
STATIC PRESSURE (in H2)	0.00	MOLE FRAC. of DRY STACK GAS.....	0.96
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.67
METER ORIFICE dH (° H2)	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.)	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1		119			30.00
A2		119			45.00
A3		119			60.00
A4		118			
A5		118			40.00
A6		118			50.00
A7		120.00			60.00
A8		119.00			
Averages		118.75			47.50

STACK GAS ACTUAL VOL FLOW (acfm)	37.31
STACK GAS STANDARD VOL FLOW (scfm)	33.57
STACK GAS STANDARD DRY VOL FLOW (dscf)	32.34

\* ASSUMED FROM A PREVIOUS RUN  
 \*\* ESTIMATED

PLANT .....	SITE 3	STD METERED VOLUME (scf).....	NC
DATE .....	6/24/92	MOISTURE COLLECTED (g).....	NC
SAMPLING LOCATION ....	BUN OVEN	% O2.....	19.00 **
RUN .....	BUN OVEN - RUN 3	% CO2.....	0.00 **
AMBIENT TEMPERATURE	60.00	%N2.....	79.00
BAROMETRIC PRESSURE	29.52	PERCENT MOISTURE IN STACK.....	3.67 *
STATIC PRESSURE (in H2)	0.00	MOLE FRAC. of DRY STACK GAS....	0.96
OPERATOR .....	CRP	DRY MOLECULAR W .....	29.08
METER TEMP (deg. F)....	NC	WET MOLECULAR W .....	28.67
METER ORIFICE dH (" H2)	NC	STACK DIAMETER (I .....	12.00
METERED VOLUME (cu.ft.)	NC	STACK AREA (sq ft) .....	0.79
METER Y.....	NC		

Traverse Point Number	Velocity Head P (in H2O)	Stack Ts (F)	Square Root of P	Stack Gas Velocity (fps)	Stack Gas Velocity (fpm)
A1		107			50.00
A2					50.00
A3					30.00
A4					
<b>Averages</b>		<b>107.00</b>			<b>43.33</b>
<b>STACK GAS ACTUAL VOL FLOW (acfm)</b>					<b>34.03</b>
<b>STACK GAS STANDARD VOL FLOW (scfm)</b>					<b>31.26</b>
<b>STACK GAS STANDARD DRY VOL FLOW (dscf)</b>					<b>30.11</b>

\* ASSUMED FROM A PREVIOUS RUN

\*\* ESTIMATED

Appendix C.8

Test Log

6/20 Sat

0945

On - Site

Met Bob — and Bruce. They were very prepared and organized. Plumbed GC & TNC's. Spray heat trace. Thought we could make it with 2 - 100 footers - about 10 feet short on each stack - Switch on a 50 footer on each one.

~ 1500 -

Finally got powered up. They had wires run @ 1300 ~~hr~~ but for some reason didn't get power till @ 1500. Then we started blowing breakers. First we were blowing our 20 amp / 110's. Then we blew the 100 Amp on their service, got Bruce out there and he explained that ~~we~~ we had 100 amps on each 110 leg. At full bore - ~~was~~ we were using 50 on each leg. - Finally, almost welded a heat trace ~~to~~ jumper plug into the outlet - so we threw that one out - made a new one - balanced the load, and then everything was ok.

1800

Started shooting standards and optimizing flame Rental (Tall TNC) responding more linearly than Ruck. However both responding a severely. Did all tweaking direct (not up the line) Did N<sub>2</sub>/O<sub>2</sub> leak check - excellent. DAS took a bad spill but still working. Mike off site

~ 1900

2130

Off Site

6/21 Sun

Took Majority of day off

17  
0030

On Site

Noticed air cylinder for FID (TTC) only had 700 lbs. (Thought this one (2nd) was new). Expecting one in tomorrow will order 3 more.

Marked stacks for holes. Plugged in the heat trace. Power looks good.

Left H<sub>2</sub> pressure at 2 psi. (They let it rise up after leaving them that way ~~but~~ all to day.

<u>Peterson</u> <u>Over</u> <u>(exhaust)</u>	<u>Peterson</u> <u>Burner</u>	<u>Kenico</u> <u>over</u>	<u>Monday's</u> <u>Realco Burner</u>	<u>Manual Data</u> <u>Rea B</u>
Flow: H <sub>2</sub> O	Flow H <sub>2</sub> O	Vel (ft/min) H <sub>2</sub> O	Vel H <sub>2</sub> O	Vel H <sub>2</sub> O
wed				
<u>Part. Flow</u>	<u>Part. Flow</u>	<u>Flow</u>	<u>Flow</u>	<u>Flow</u>

1/22 Mon

0745

On site

Hit the TNC Fids - which lit right away. Went direct to optimize and initially set the fids.

0900

Let Bob Auger know the pots were marked so he could drill them. Shooting for a 10:00 start but DTS is seeing more voltage than the SCE. Went with it. Got under way around 10:30 - Fid did not stay lit - had to increase pressure from 6.5 - 7.0 psi and Recalibrate at higher pressure

~1045

Started first run on Ben over. Ran till 12:00, then switched to the Peterson bread over.

Everything seemed to work ok till the Peterson went down. (between products ~ 13:45) and we wanted to observe transient conditions. Rack Flame kept going out. I don't know what the problem was - finally it stayed lit. I think I'll ↑ the pressure to 7.2 psi for the next test

1745

Wrapped up the tests. Ran a bunch of @C<sup>5</sup> - everything looked ok

Did flows up on the roof w/ John Rhodes. Over had 0 flow. Went downstairs and checked with maintenance. Dampers all the way in so that blower air is recirculated and not exhausted. Hot wire showed 0-50 fpm - stuck the TNC probe back in the stack and read 1000-1200 ppmC. They read it as always

6/23 Tues

CFT

~ 11:00 Came in and checked on Heat Trace  
and jumpers, etc. Everything fine - New gas  
cylinders here.

6/24 Wed

0700 On-Site - lit FIDS. Having trouble keeping Radian (Rack) TIC lit, (as usual) tried varying the ad air pressure. Finally started passing N<sub>2</sub> direct through zero solenoid - and just after opening zero solenoid (no N<sub>2</sub>) - flame lit, stayed lit all day - another ccm mystery. Rack pressure regulator seems kaput. Started the day off at 3.5 and now (1700) it's at almost 3.8 psi. Drift was negligible at about 1500 hrs - so it's working out OK

0800 Mike and John on site. Mike got his GC up and running by 10:00. John is doing more flows today - simultaneous with the tests

1016 Stalled Readco - lots. Very little flow out the oven (exhaust stack) - so spm velocity (~ 40xftm)

1143 Sailed to Pelson

$\sqrt{}$  = ~1300 hrs  
X = ~1700 hrs

	TIC	GC
Product Change - Did GC's	80.2-C <sub>1</sub> ✓ X	✓ X
	1921-C <sub>1</sub> ✓ X	✓ X
	1490-C <sub>1</sub> ✓	
	2000-C <sub>1</sub> ✓ X	X
	200 Ethanol ✓ X	X
	2030 C <sub>1</sub> ✓	
	798 C <sub>1</sub> ✓ X	X
	3960 C <sub>1</sub> ✓ X	X
	500 ethanol	X
	80.2	

Ran till about 16:45. then did GC's. Everything looked good. Mike got one bad GC on the duck system but attributed that to integration error. (It looked fine using peak height method)

~ 1730

7 ~ 1900

John OFF-Site  
Mike & me off site

Appendix C.9  
Method 25A SCR Copies



3-1

① gas  
798 C. Flame Opt.  
09:30:30 6/22

100	0
90	10
80	20
70	30
60	40
50	50
40	60
30	70
20	80
10	90
0	100

790  
755  
790  
755

790  
755

BACK - WAMP  
BACK - WAMP  
RACE SYSTEM  
RACE SYSTEM

THE RACE

ON



3-4

TABLE 830 VM 835 DAS  
RACK = 840 VM (800 DAS)

TABLE SCR = DAS

Back to the REMAINS ~ 600  
from inside when SCR is  
visited with

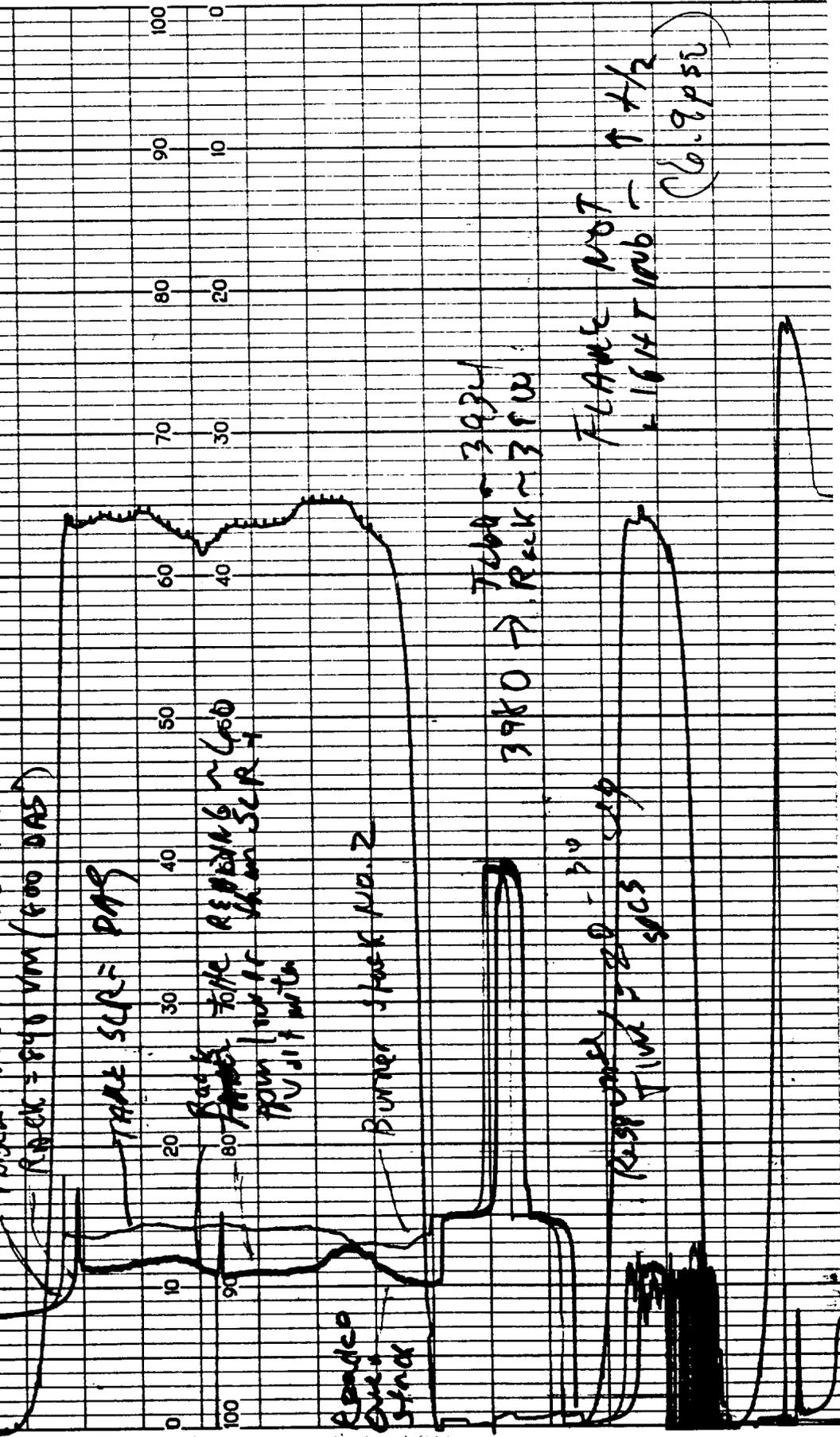
BURNER JACK NO. 2

Spaded  
over  
stick

3980 → TUBA ~ 3934  
RECK ~ 3900

RESPONSE = 20 - 30  
TIME = 500 SPCS

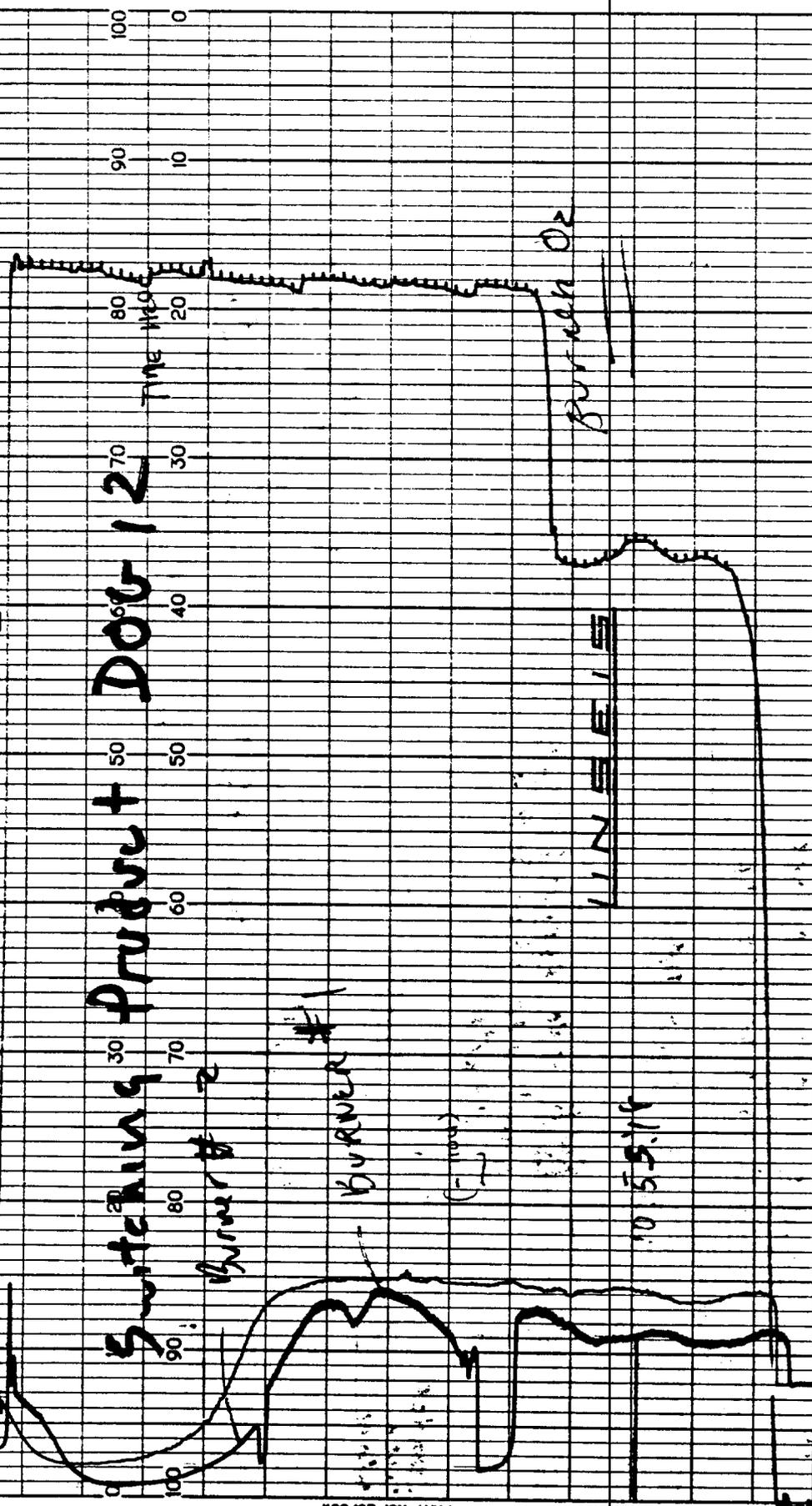
FLAME NOT  
LIGHTING - ↑ 1/2  
(6.9 pps)



P-5

200 ppm Ethanol up. OVEN: 311 (DAS)  
the line BURNER: 274 (DAS)

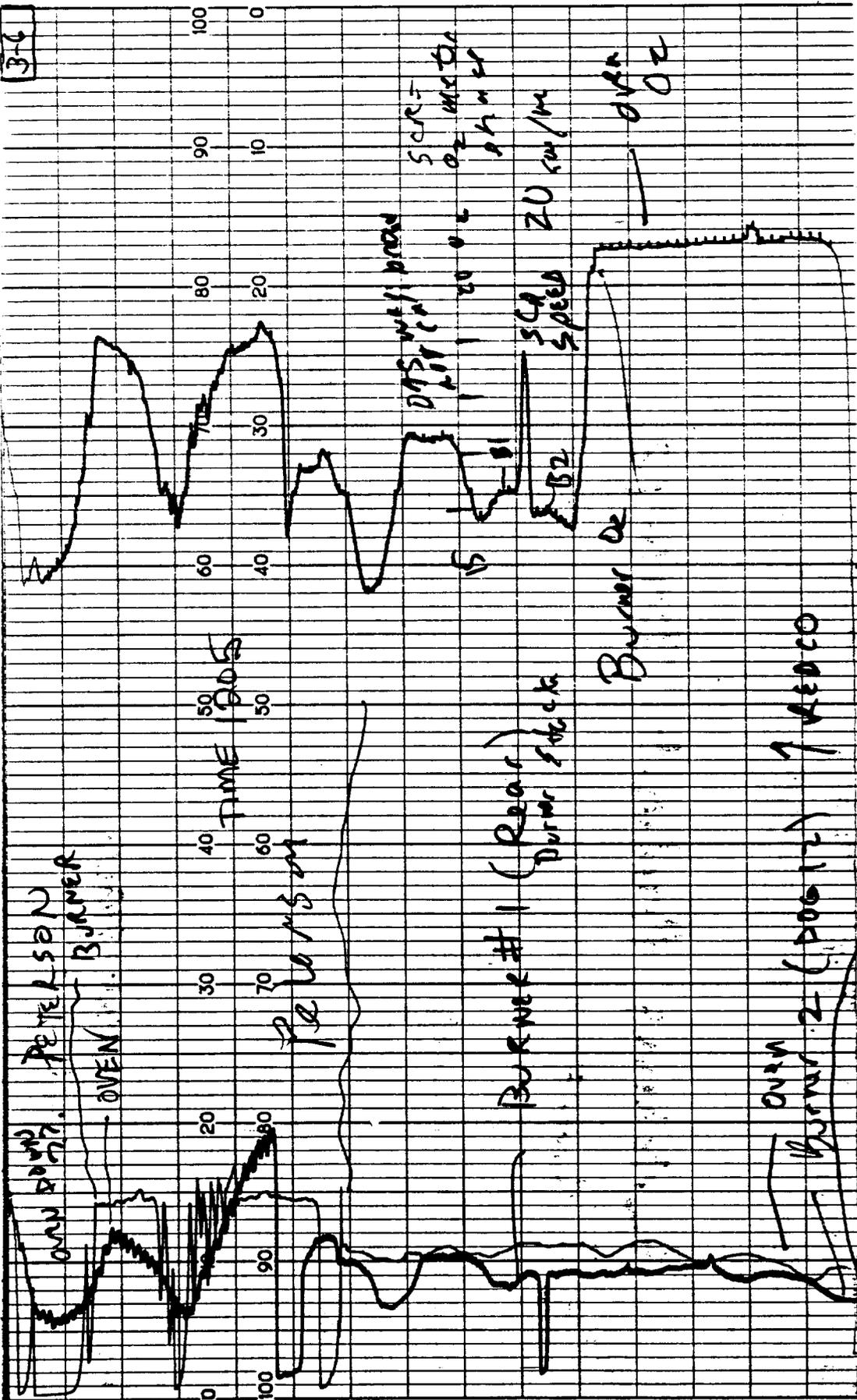
# Switching Product DOG 12



11N3E15

10:55:16

3-6



PETELSON BURNER OVEN

Peterson

Burner #1 (Rear)

Burner #2 (Front)

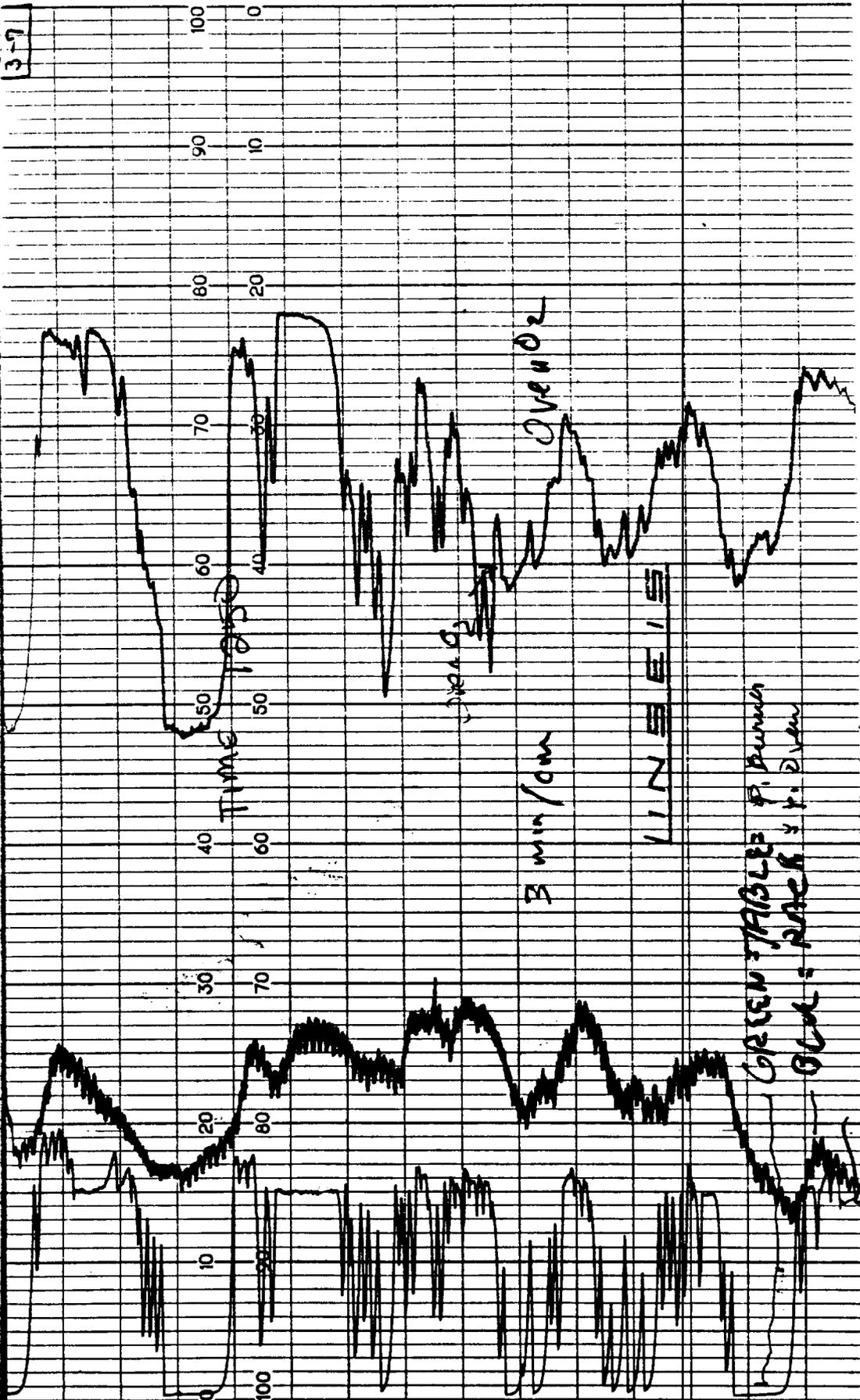
Burner #2

SCA SPEED

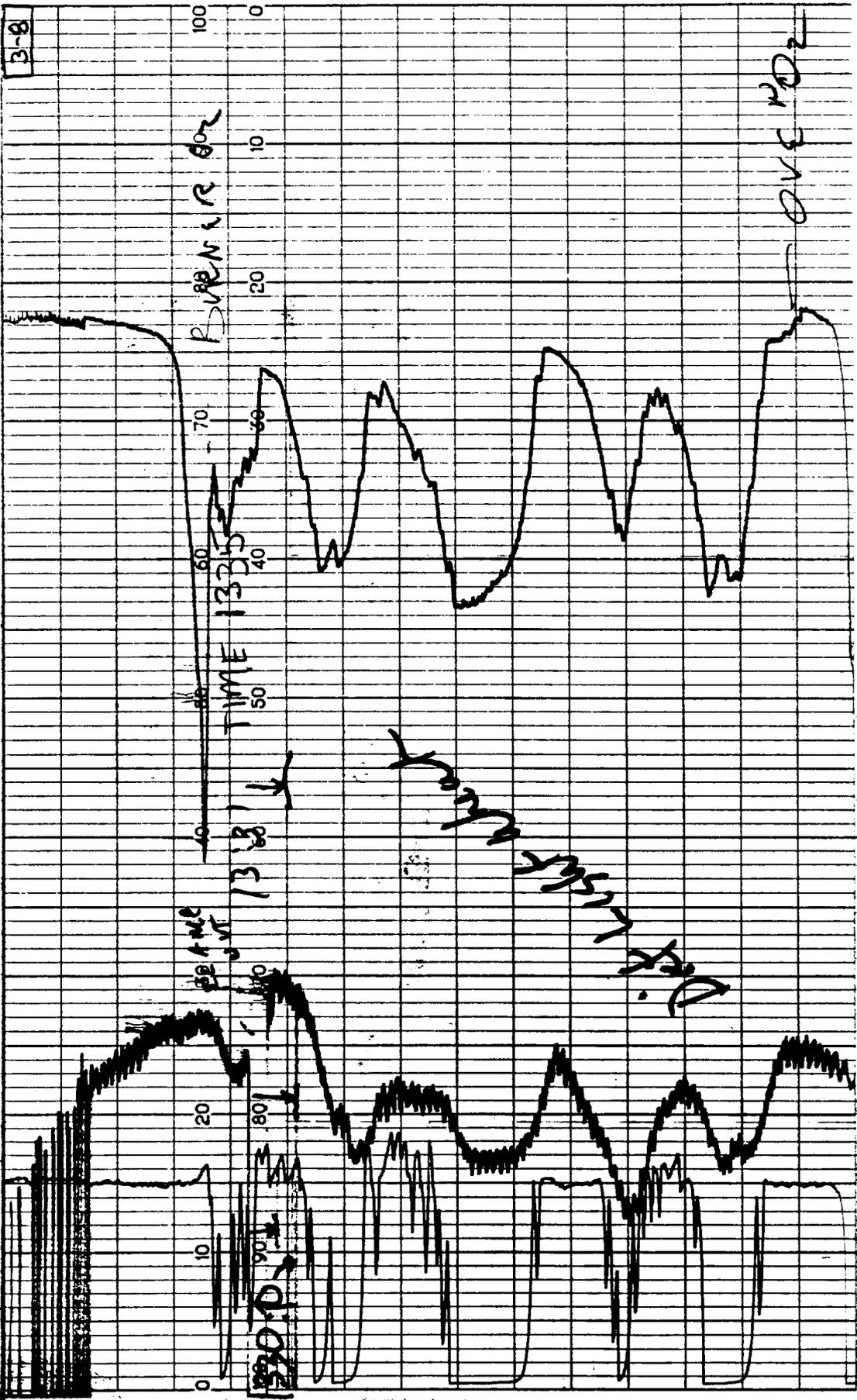
20 rpm

SCA  
O2  
O2 METER

3-7



3-8



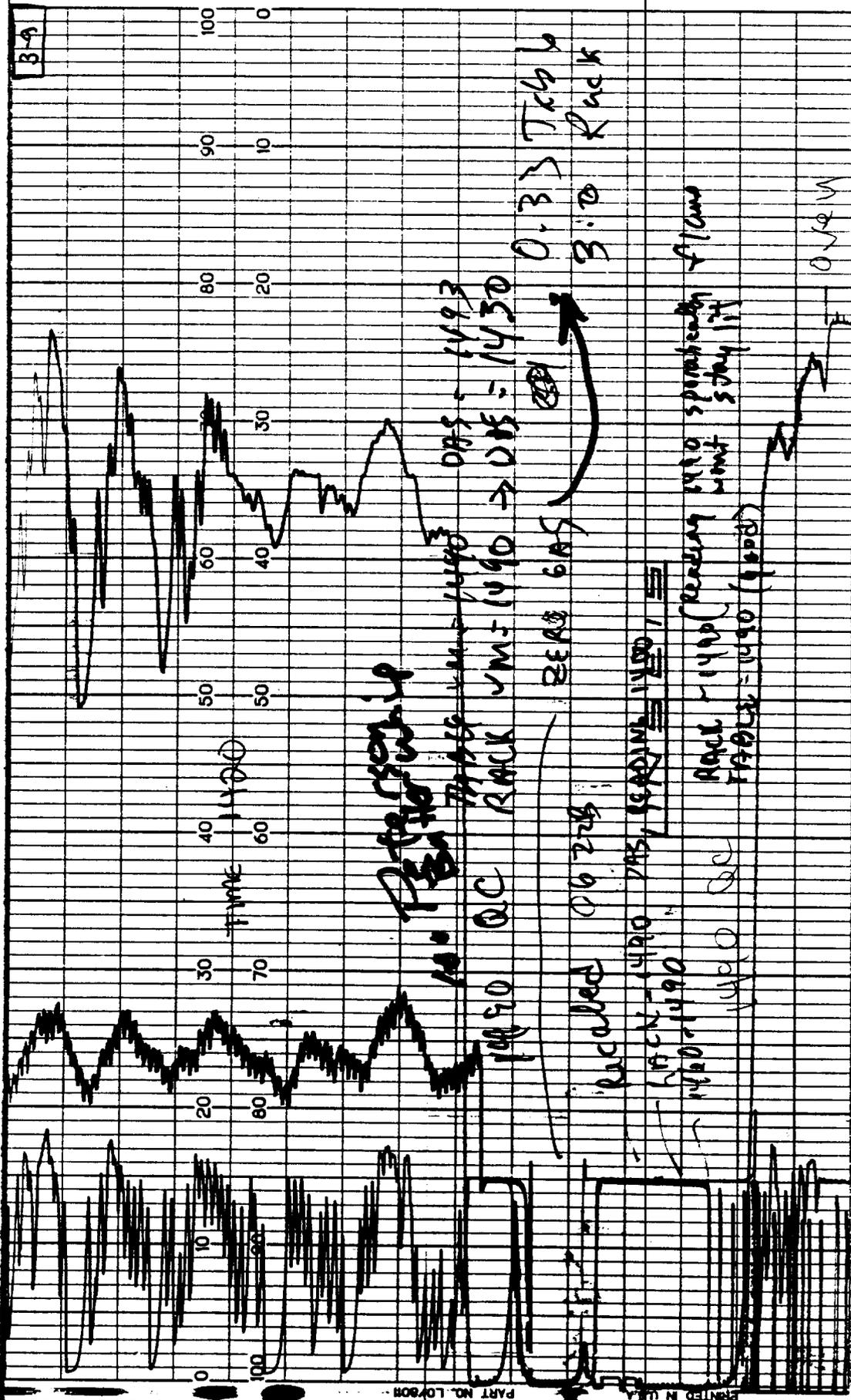
BIEN R 602

TIME

320.P

D.F. 1/15/68

OVER 100



Peterson's

1490 QC RACK VMS 1490 → DMS = 1493  
1490 QC RACK VMS 1490 → DMS = 1430

0.33 Tack  
3.10 Rack

BEAR GAS

recalled 06228

1490 DMS, READING 1490

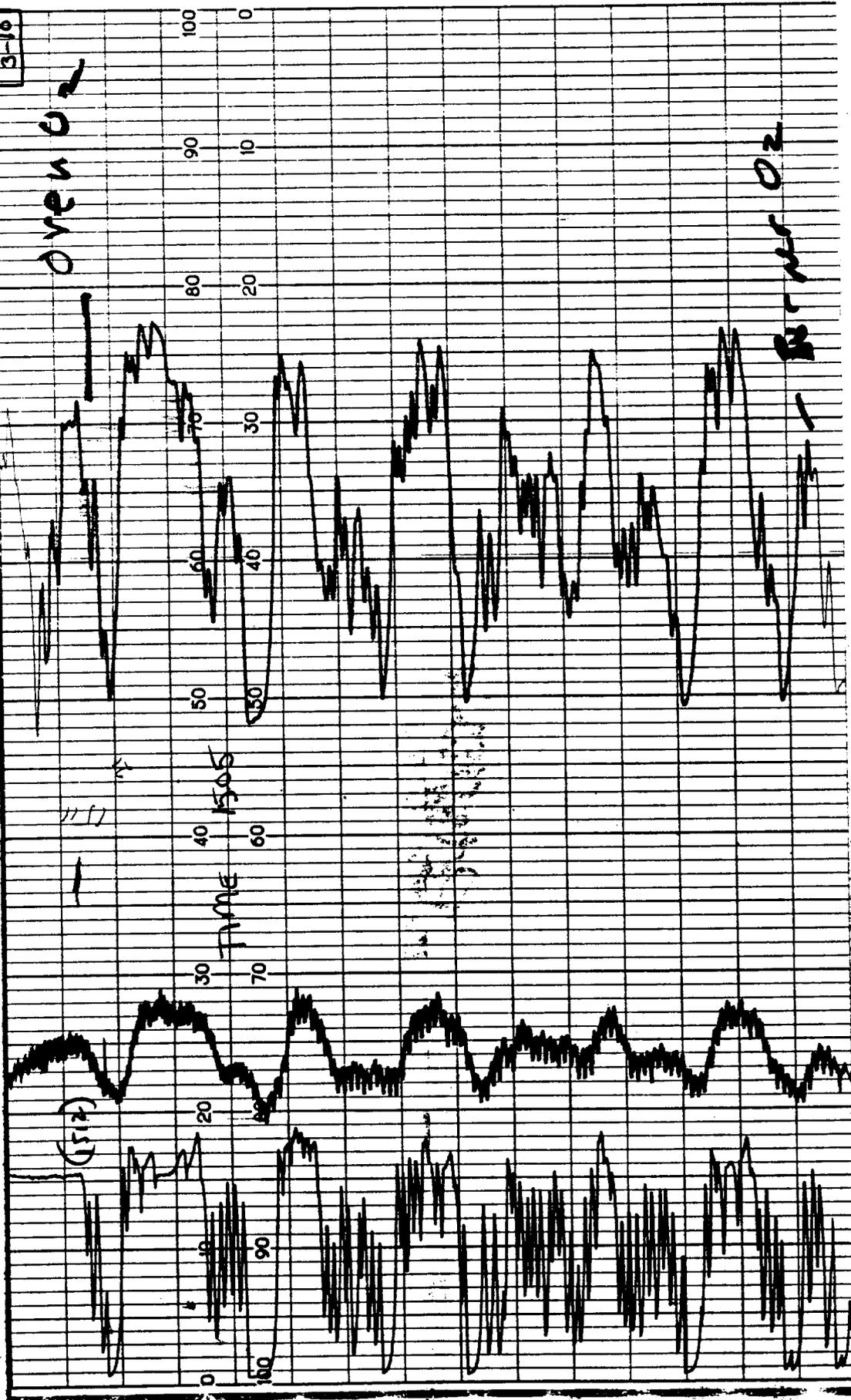
RACK - 1490 (reading VMS sporadically + 1/2 way)

1490 QC  
1490 QC

OVERVIEW

3-10

over 0



1512

1505

1512

100

90

80

70

60

50

40

30

20

10

0

0

10

20

30

40

50

60

70

80

90

100

3-11

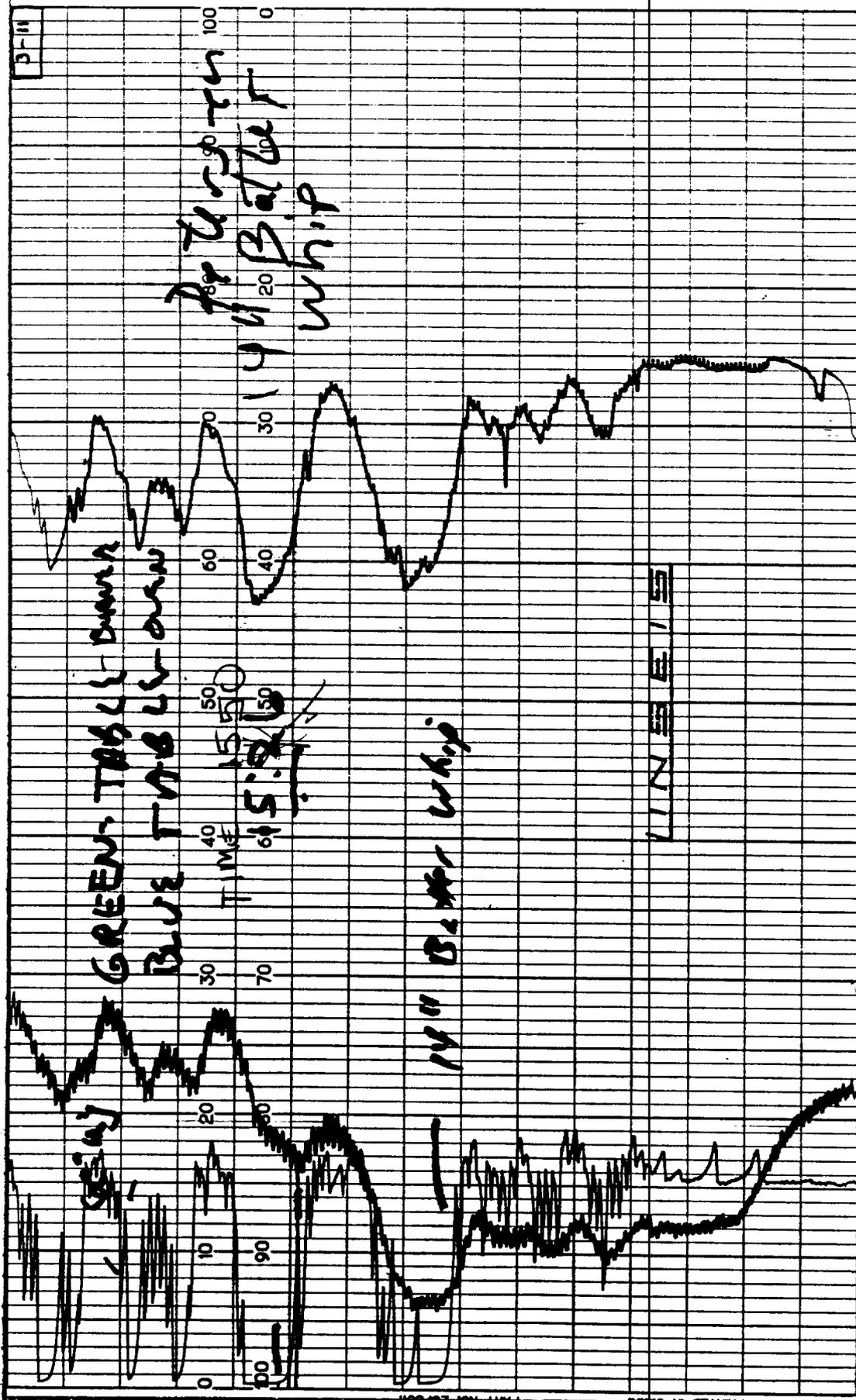
GREEN TABLETS  
BLUE TABLETS

14" BATTER WHIP

TIME 15:50  
6:58

14" BATTER WHIP

11:55



3-2

BURNER

3980

3900 Rack

1635

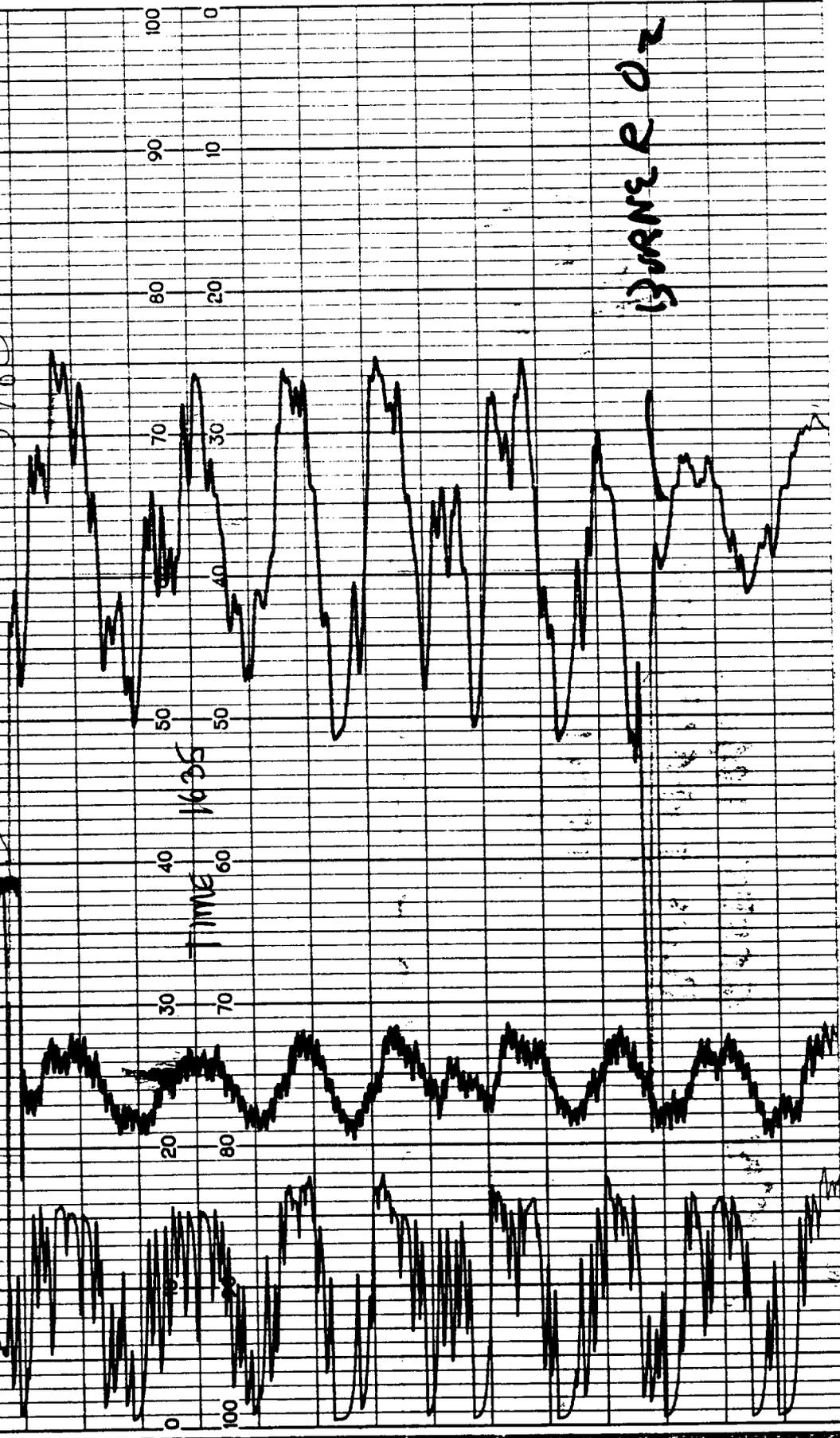
TIME

30

20

10

0



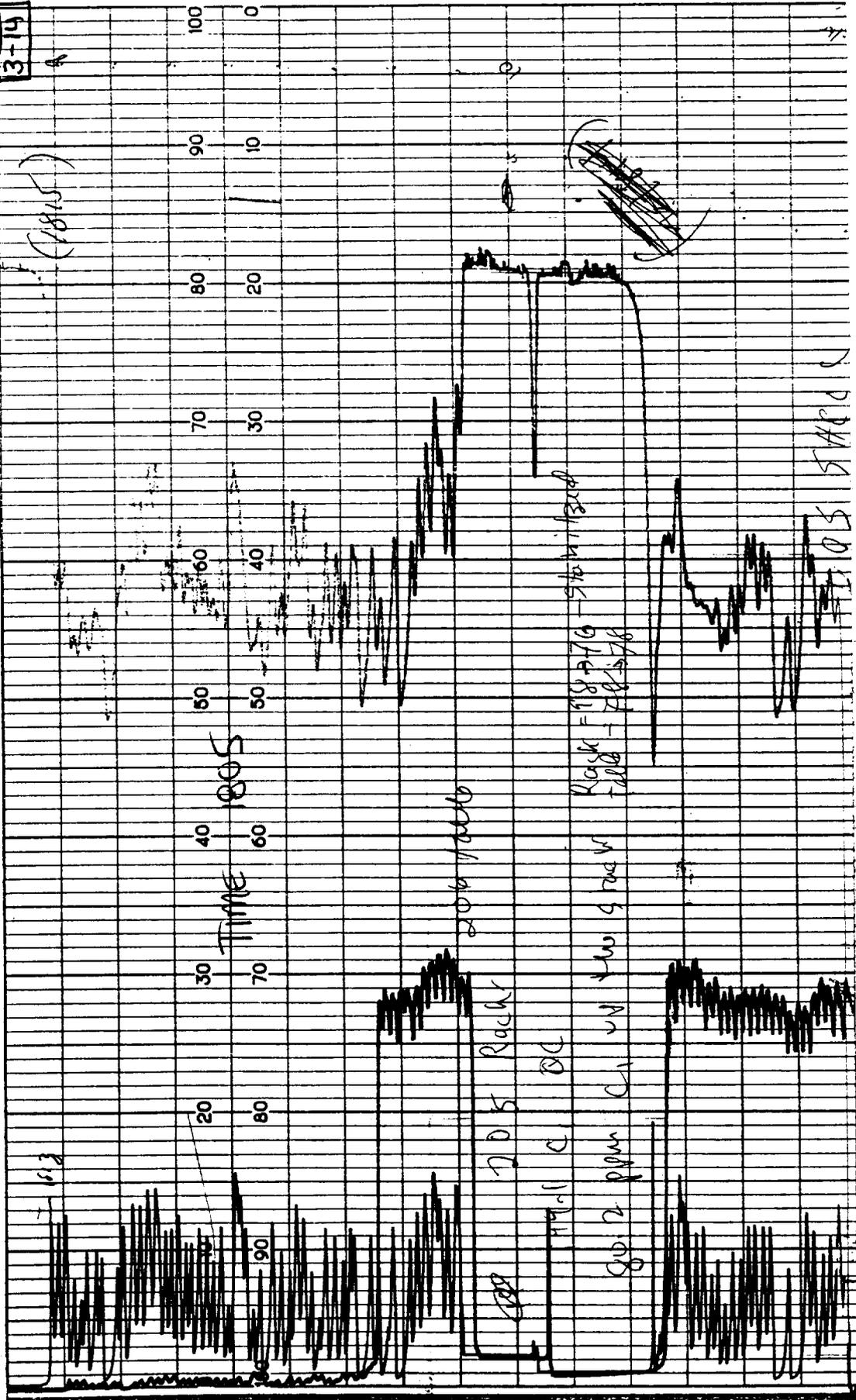
BURNER



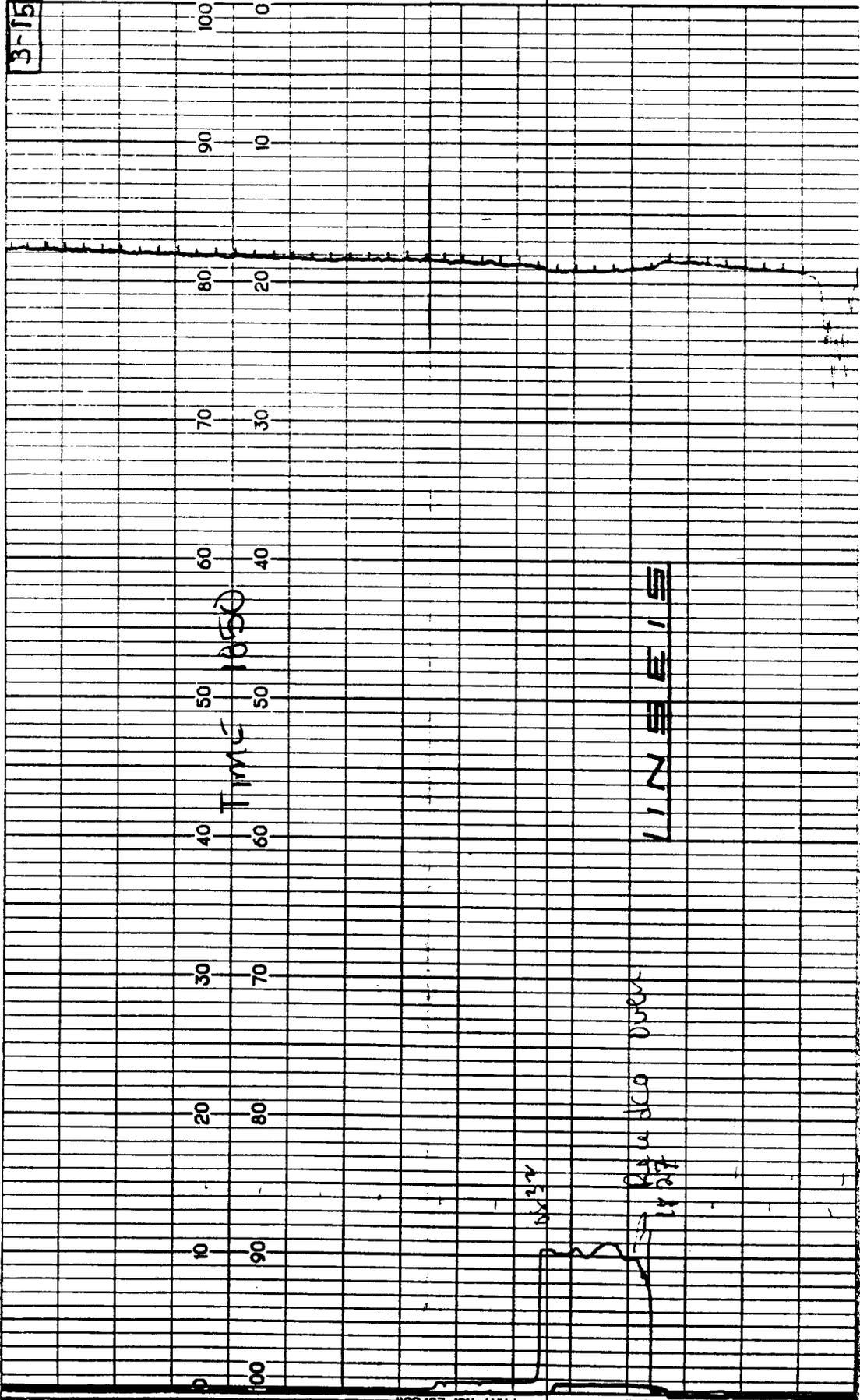
3-14

A

(1815)



3-15



TIME

LINE EIS

R u dco over  
14 27

SITE 03  
KANSAS  
READING, PA  
MATELS BRANCH

END OF DAY 01

3-16

11:00  
11:15  
11:30  
11:45  
12:00  
12:15  
12:30  
12:45  
13:00  
13:15  
13:30  
13:45  
14:00  
14:15  
14:30  
14:45  
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21:45  
22:00  
22:15  
22:30  
22:45  
23:00  
23:15  
23:30  
23:45  
24:00

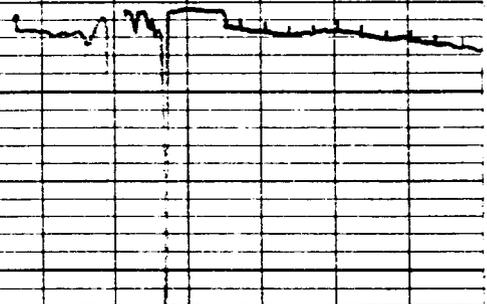
✓

✓

✓

✓

✓



152 wood  
check

-1900



3-16

over 2  
Burner 2

10:16 REPO

TABLE VM: 200

TABLE VM: 191 (203:183)

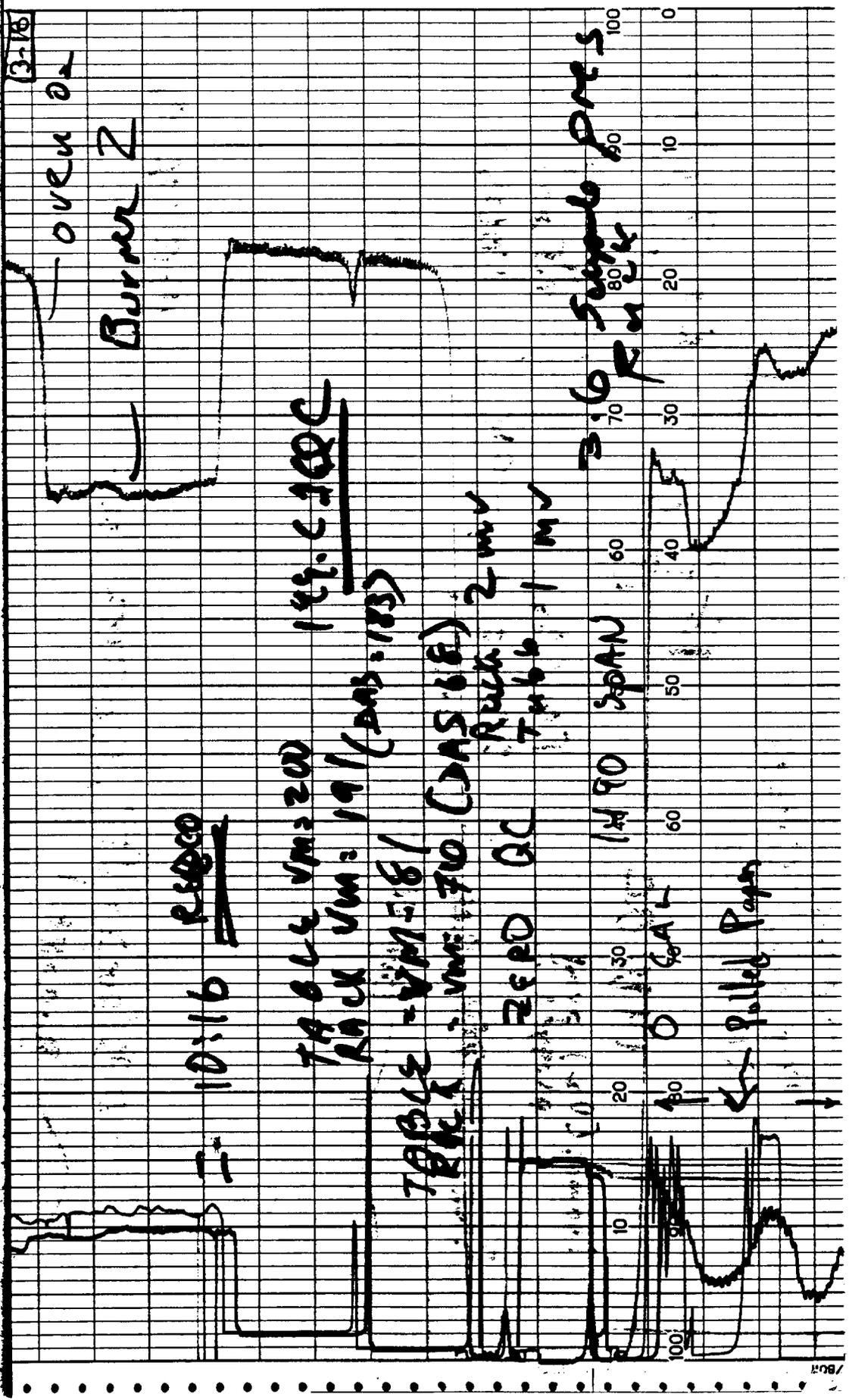
149. C-100C

TABLE VM: 61  
TABLE VM: 710 (DAS 6E)

REPO GC

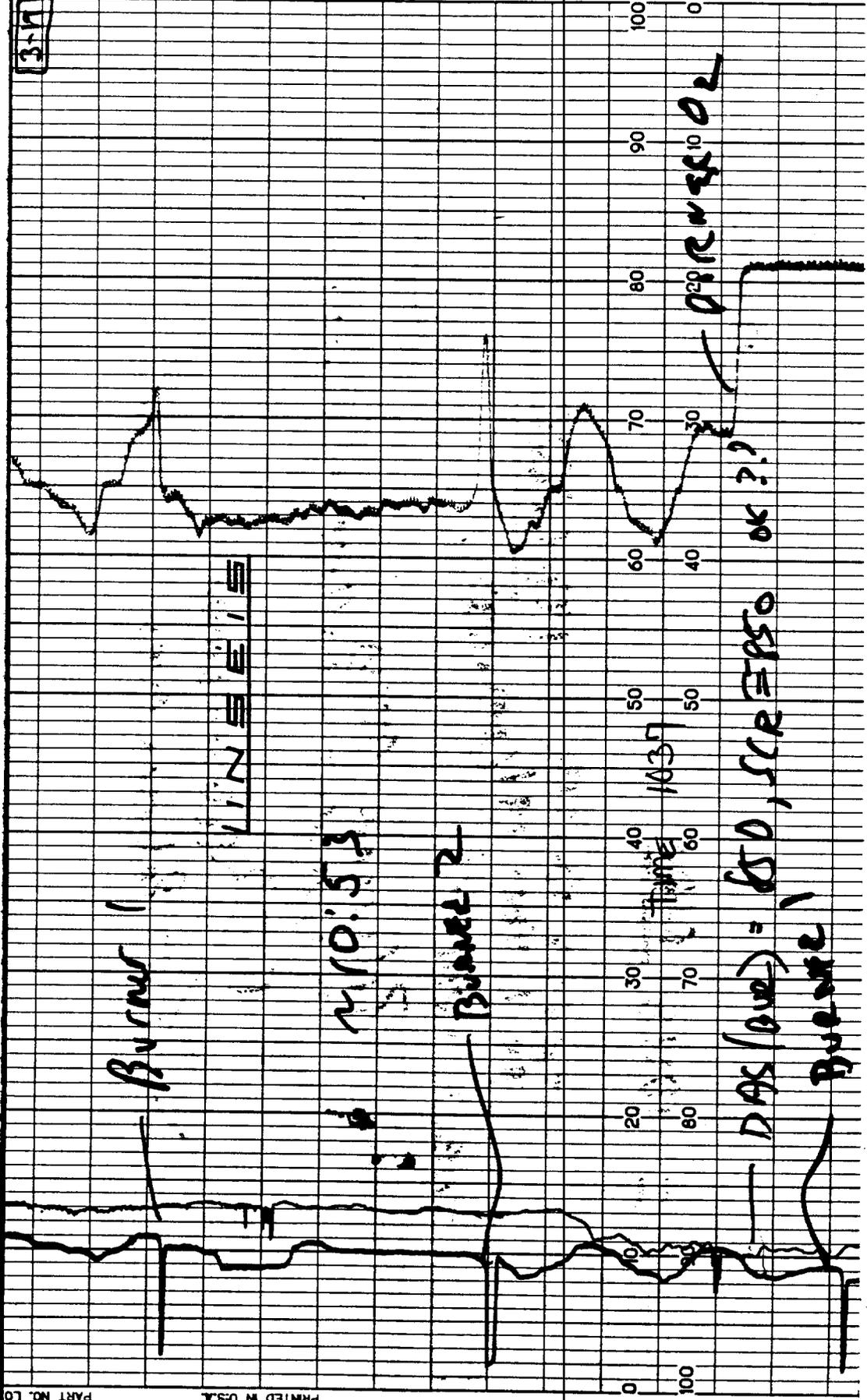
REPO 2 mV  
TABLE 1 mV

3.6 Sample Pres



← Potted Paper

3-17



Burner 1

2/10/53

Burner 2

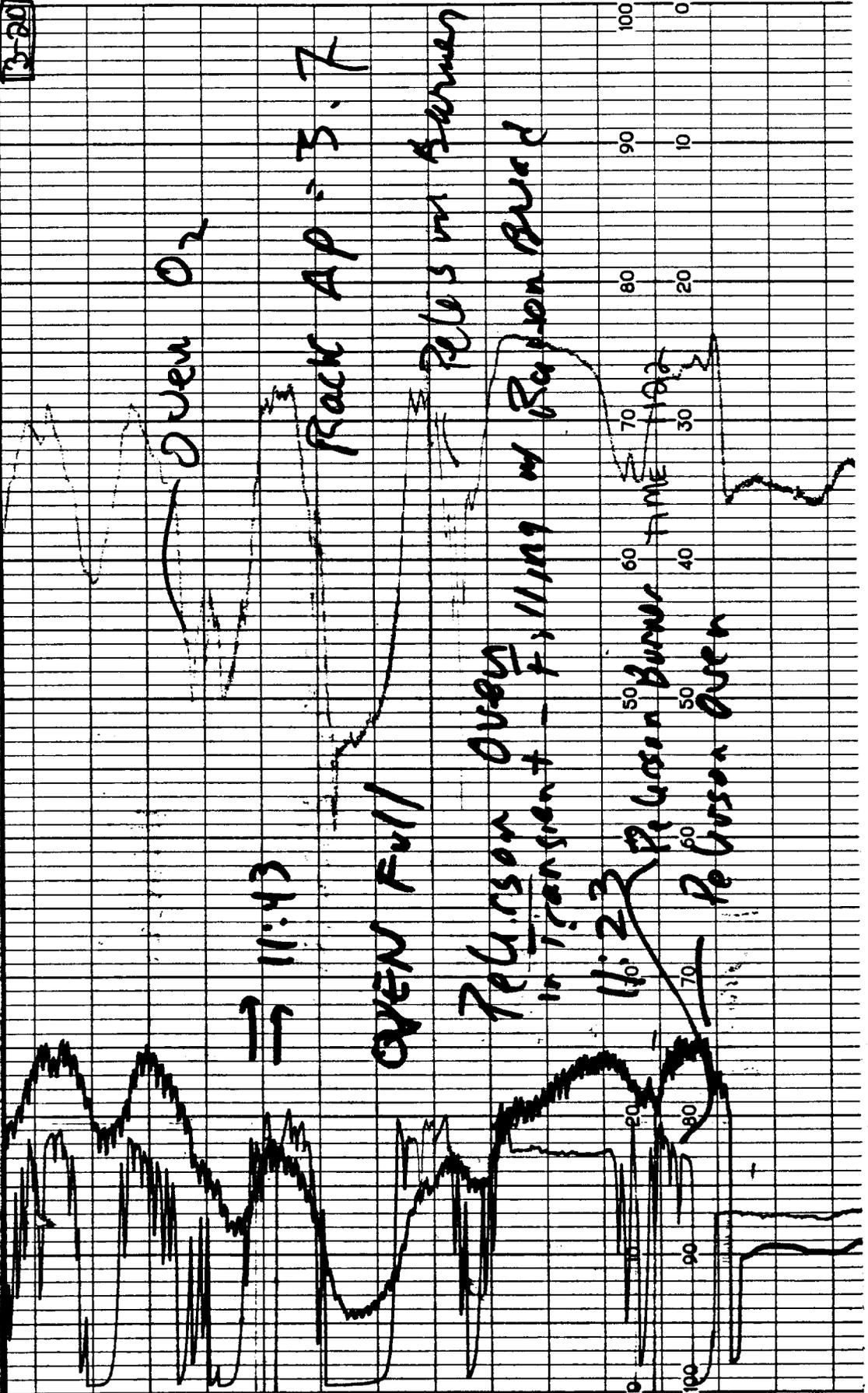
LINE 15

Time 1037

DAS (over) = 650, SCR = 150 or 200

Burner 1

13-20



Oven O<sub>2</sub>

Rack AP = 5.7

Rebuson Burner

→ 11:43

OVEN FULL

Rebuson Oven

in transition - filling w/ Rebuson Burner

11:23

Rebuson Burner

Rebuson Oven

100

90

80

70

60

50

40

30

20

10

0

100

90

80

70

60

50

40

30

20

10

0

TIME

3-21

TAB 42 ~ 1495 VM

TAB 42 ~ 1475 VM

(490 CAL)  
O CAL

TAB 42 303 VM 800 DAS

RUCK 198 VM 1790 DAS

17.1 AC

(TAB 42 82 VM)  
(P BURM 744 DAS)

80.2 PPM OC

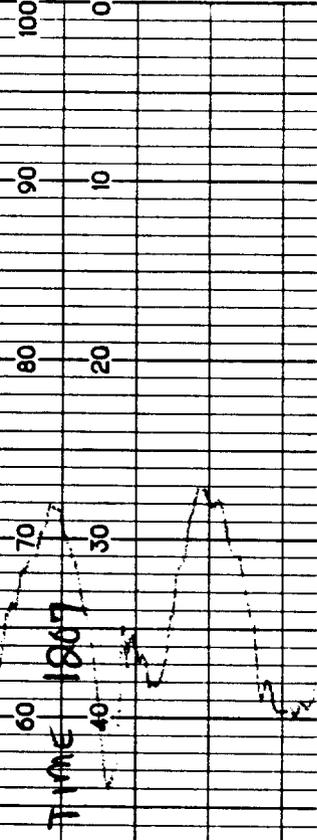
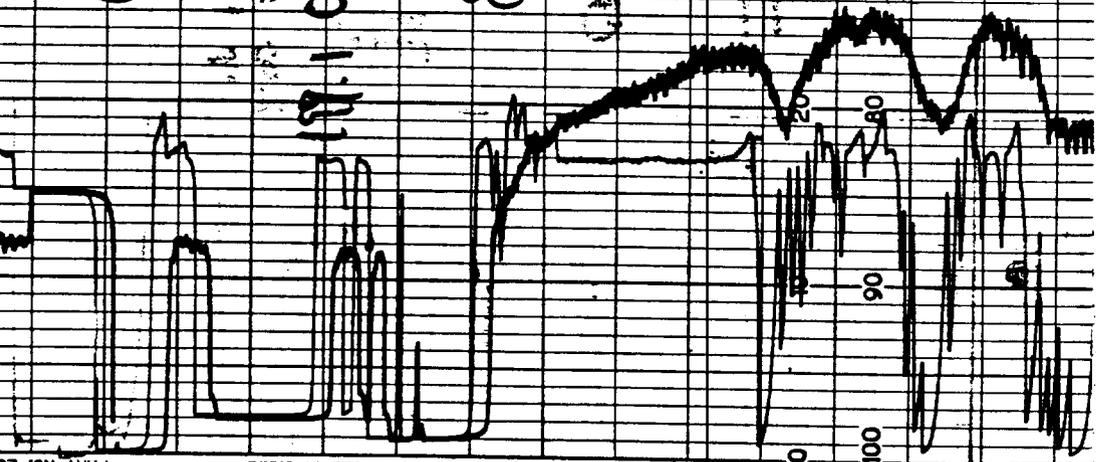
(RUC W. 101 VM)  
(RUC W. 83.1 DAS)

(1.7 PSI)

12:35:48 (1 CAL 13 min)

12:44:49

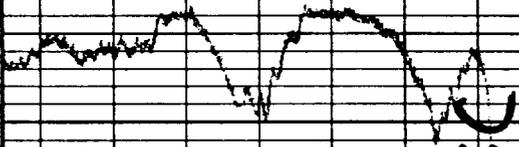
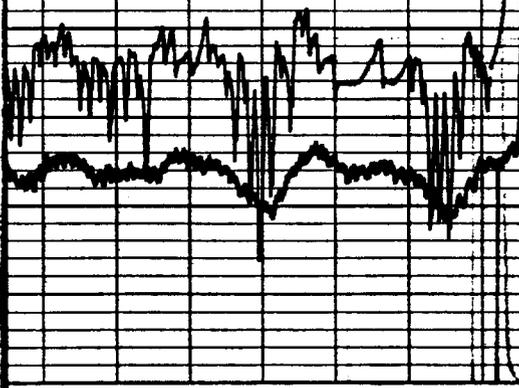
12:02



3-22

T = 13:07

PETERSON MISC



3940 UP THE LINE R: 3940 VM

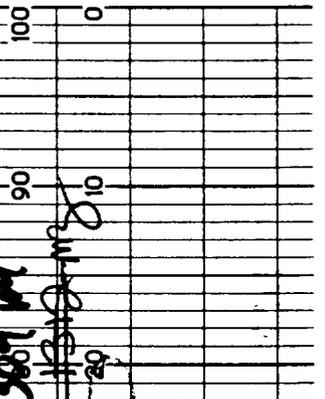
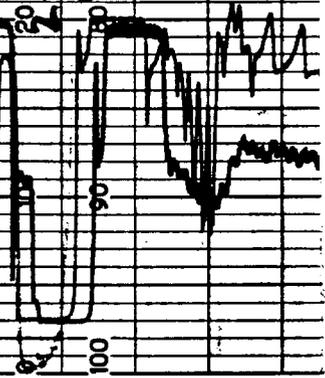
798 C1 UP THE LINE RACK: 799 VM TRACE: 799 VM

2050 C1 UP THE LINE RACK: 1990 VM, TRACE: 2009 VM

3604 VM RACK: 3604 VM TRACE: 3604 VM

2015 VM RACK: ~1950 VM

2000 PPM C1  
UP THE LINE



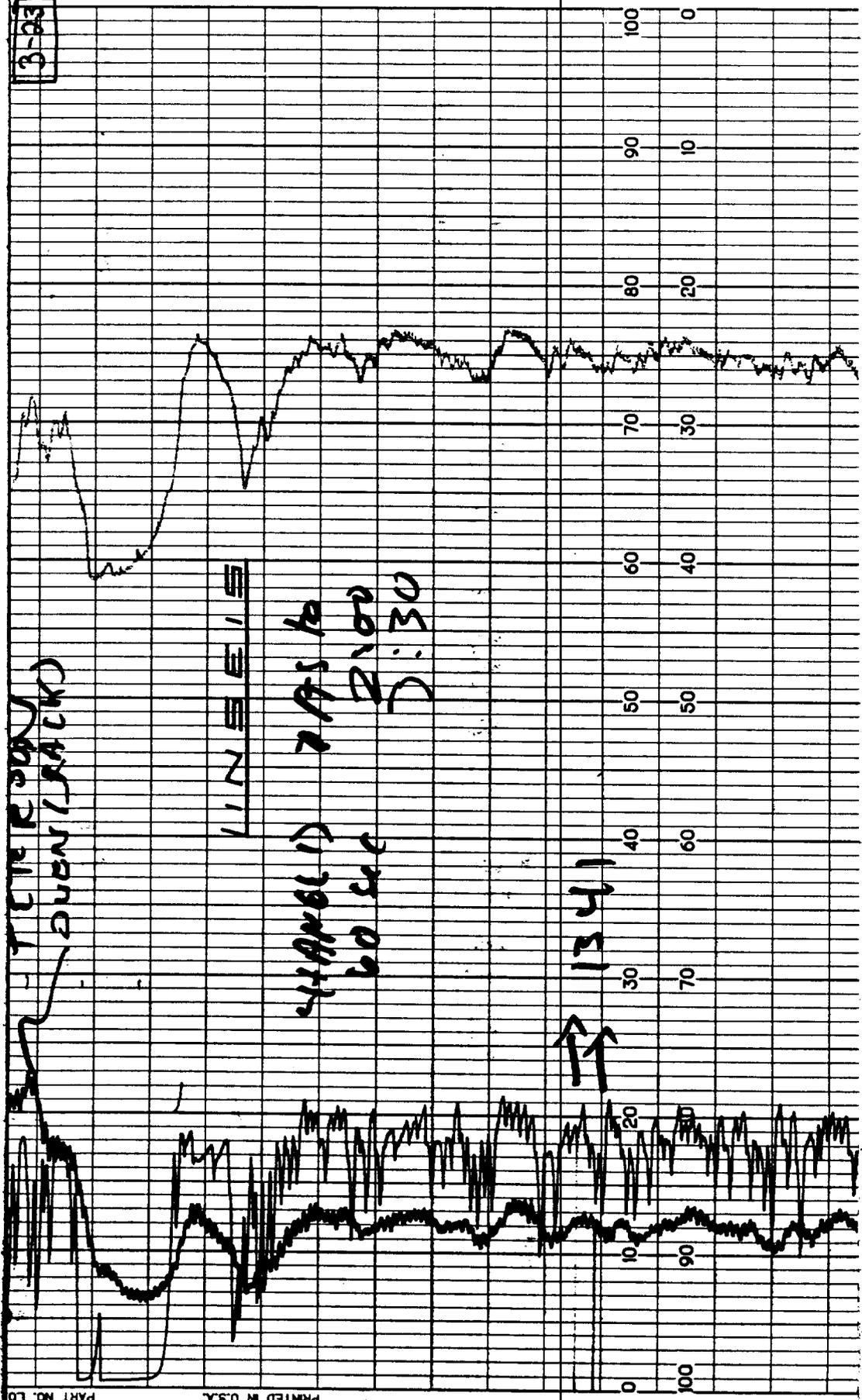
3-23

TEMPERATURE  
DUBAI (RAK)

LIN E I S

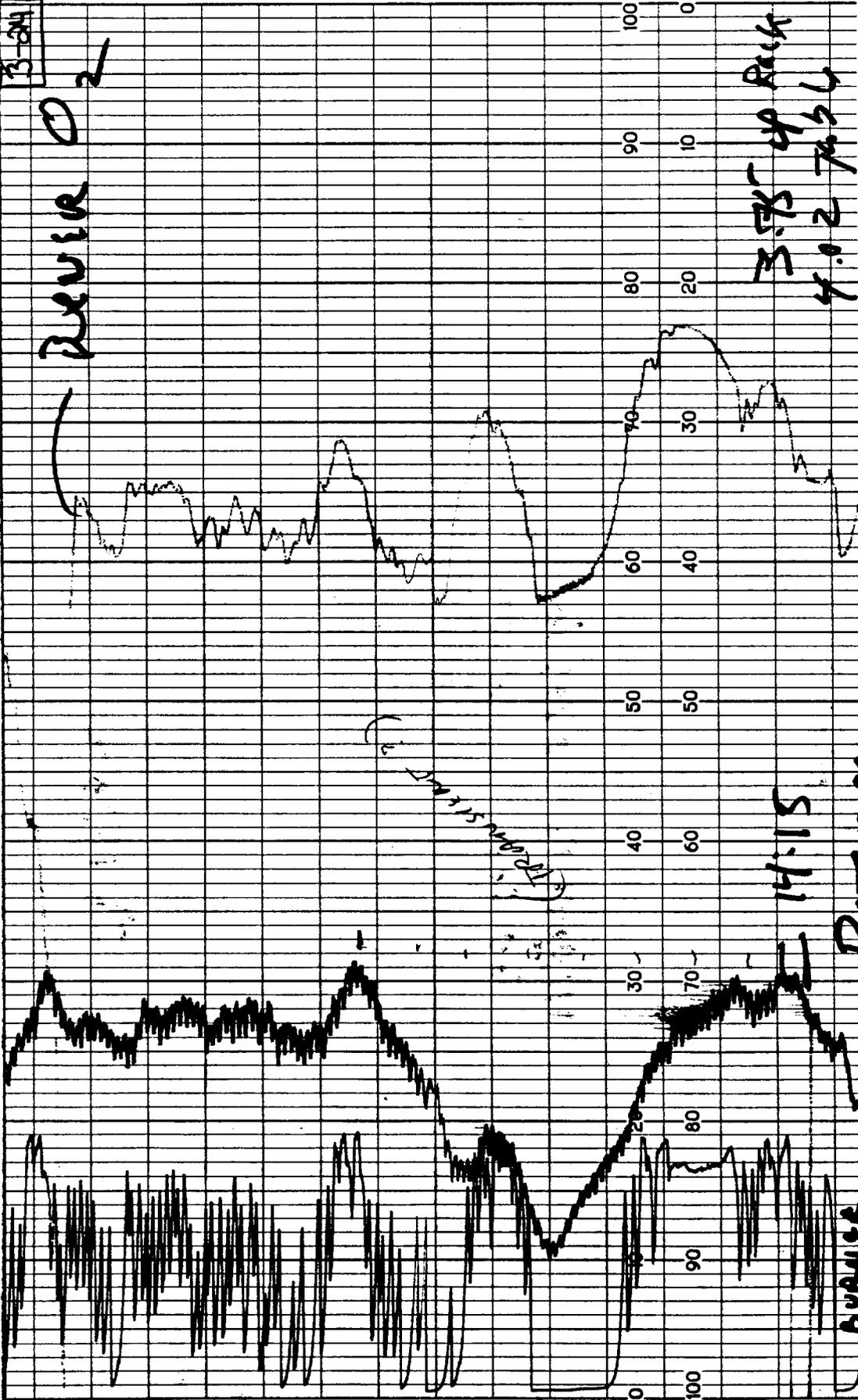
WIND (1) 295 to  
60 sec 2:00  
3:30

↑ 1341



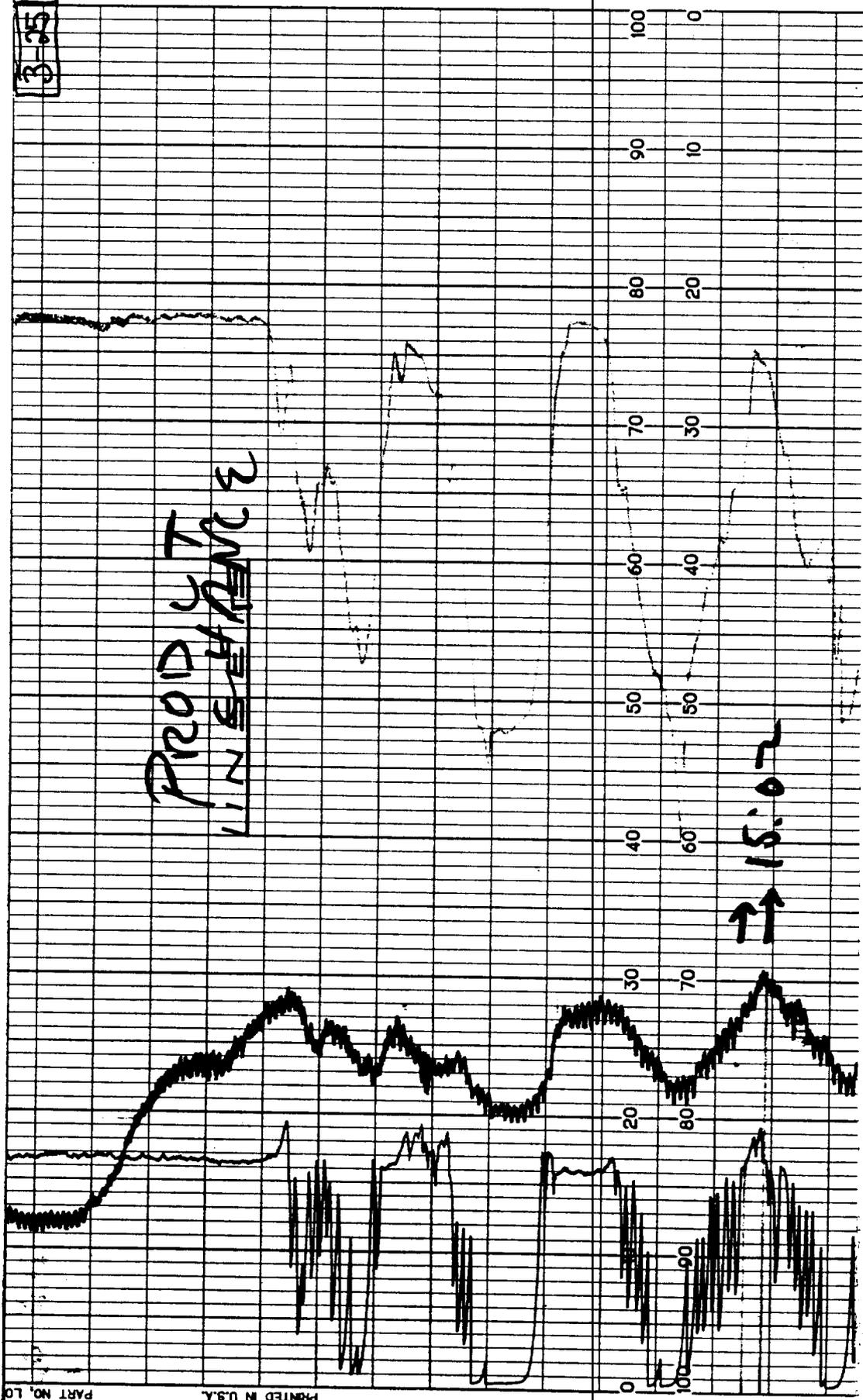
13-2011

Review 02

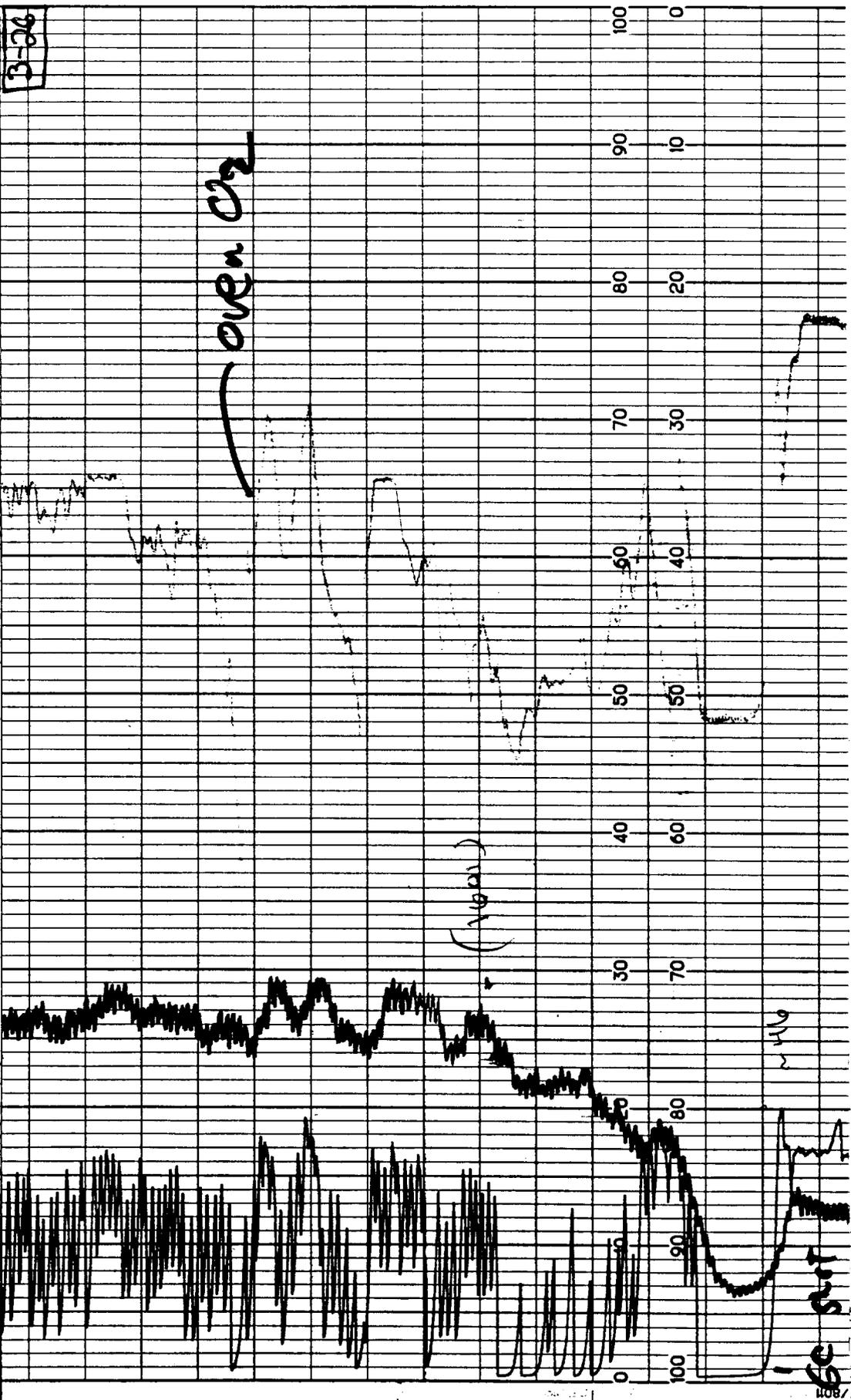


3-25

PROD Y T  
LINE SENSANCE



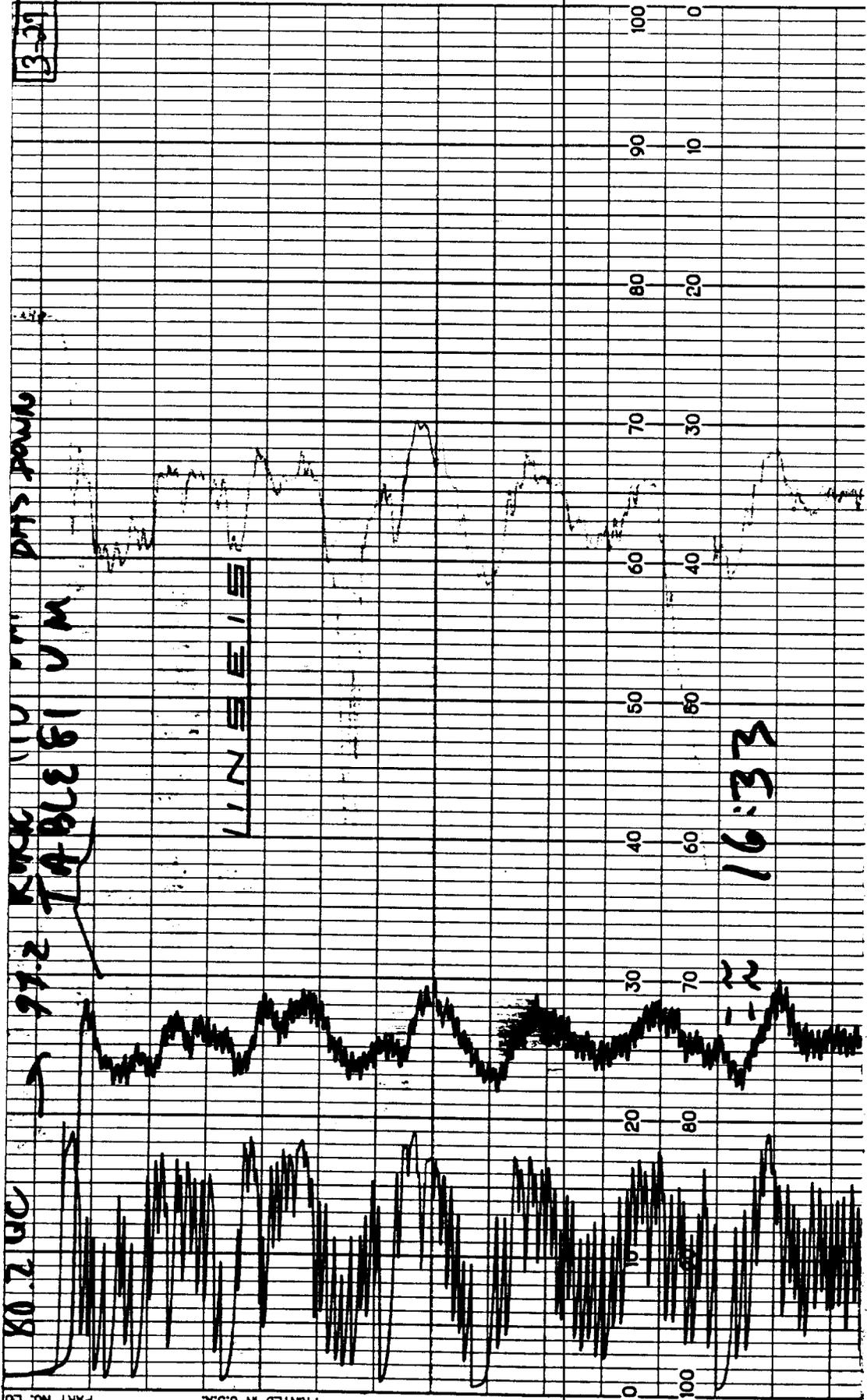
3-26



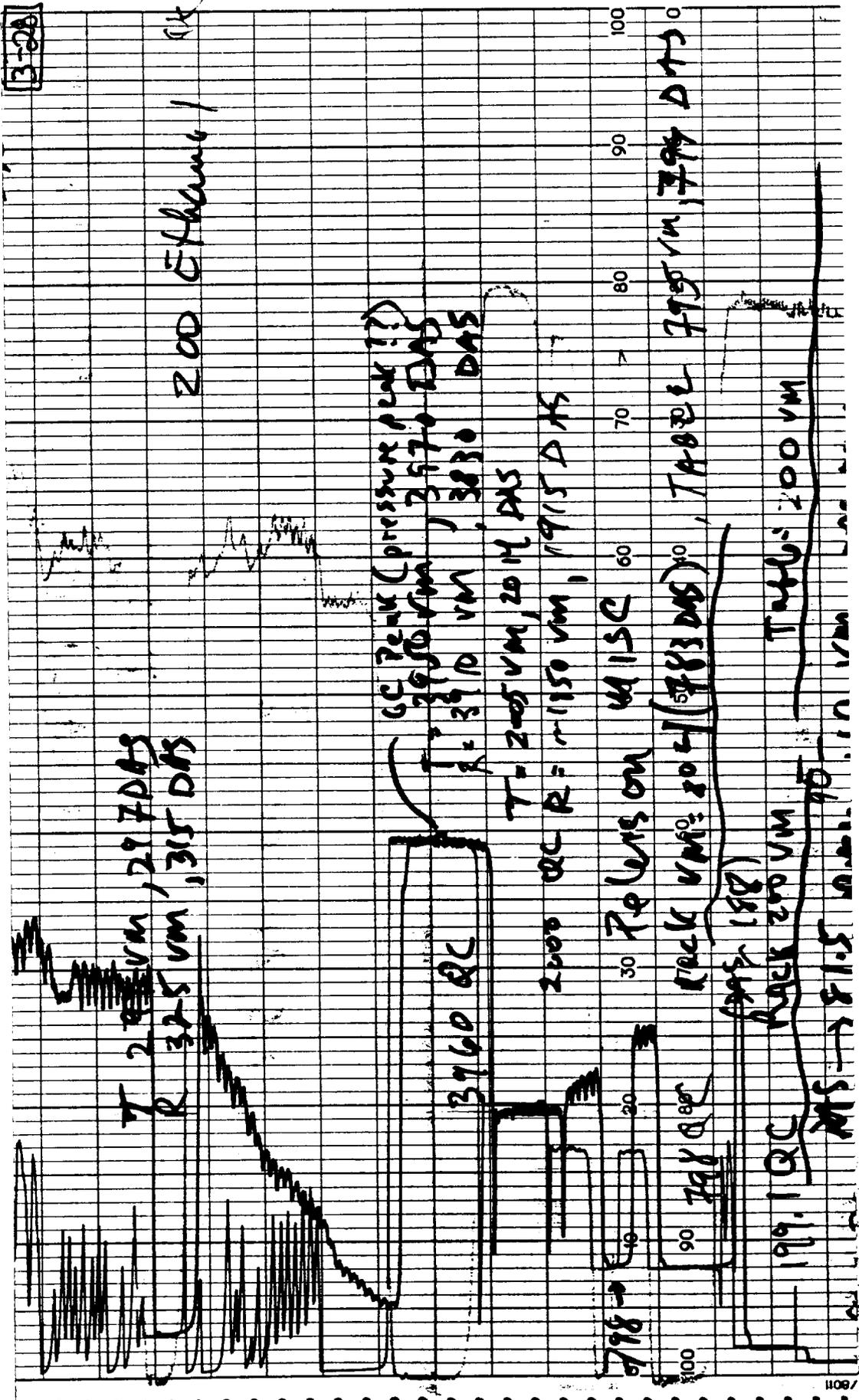
3-29

80.2 UC  
97.2 KMG  
TABLET UM  
DMS DOWN

LIN E I S



16:33



3-29

L I N E I S

T: 1480  
Spectrum: 1490

Back takes a long time to go to 0  
CAL

T: -11 mV  
R: 12 mV  
10 90 from 40  
15 mV

102  
T: 99 mV  
R: 149 mV  
102  
102

82 SAA, AC

112 AC  
R: 15  
0 mV

498 channel AC

R: 754 mV, 756 mV  
R: 780 mV, 751 mV