EXCEPTIONS TO EPA METHODS

1. Utilization of a different sampling system design. The moisture removal system was located before the NO_2 to NO converter and after the coarse filter. This is similar to the system design included in the Federal Register, Vol. 51, No. 177 September 12, 1986, "Standards of Performance for New Stationary Sources; Additions of Quality Assurance and Quality Control Procedures to Methods 5A, 5D, 6A, 6B and 20".
2. A sample probe with eight openings was used rather than moving a single point probe to the different sampling positions. An oxygen traverse was performed and is included in **Appendix C**. Given the configuration of the exhaust piping and the operating parameters of the unit, the exhaust flow was not stratified.
3. Calibration gas was introduced directly to the analyzer rather than going through the complete sample line assembly. The sample line was leak checked and integrity checked.
4. A resident time calculation is provided for the sampling system rather than performing a response time test. The response time test is used for selecting the minimum sampling time required at each sample point location. The sampling time is selected to assure that the analyzers response is for exhaust gas entering the sampling system from each of the sample point locations. Using a probe with multiple openings eliminates that problem since the probe is not moved from point to point but rather all points are sampled simultaneously. A strip chart recorder tracing of the analyzers' response was used to determine that exhaust gas was being analyzed before the start of each sample period.
5. The fuel BTU analysis was performed by a gas chromatograph rather than by means of a calorimeter.

R7-279

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EMISSIONS TEST REPORT

G.E. FRAME 3 GAS TURBINE

Tennessee Gas Pipeline
Station 17
East Bernard, TX

January 31, 1990

Prepared for the

TEXAS AIR CONTROL BOARD

By

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TENNECO

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Emissions Sampling Results
for
Tennessee Gas Pipeline
Compressor Station 17
East Bernard, TX

INTRODUCTION

Tennessee Gas Pipeline has installed two General Electric Frame 3 gas turbines at its plant in East Bernard, TX. The 11350 horsepower turbines drive centrifugal pipeline compressors and will be replacing 23 reciprocating gas engines. The emissions of Unit 1C were tested by Tom A. Pellette, Phil C. Martin and Chad C. Fletcher of the Technical Services Department of Tenneco Gas on January 31, 1990 in order to meet the requirements of Permit C-18785. Mr. Mike Vance of the Texas Air Control Board was present during the testing.

The testing determined the exhaust emission rates for oxides of nitrogen and carbon monoxide. The test was conducted in basic accordance with approved Environmental Protection Agency (EPA) test methods as described in the Code of Federal Regulations, Title 40, Part 60, Appendix A and Title 40, Subpart GG.

SUMMARY

The emissions from Unit 1C were monitored at two load conditions. At each load condition, data was taken and averaged for three fifteen minute periods. The overall averages for each load condition are given in **Tables I** and **II** below. Unit 1C is permitted by mass emission levels of NO_x and CO and by a NO_x ppm limit corrected to ISO standard ambient conditions.

Table I Unit 1C NO_x Emissions

Run Number	Horsepower (% load)	NO_x measured (ppm)	NO_x measured (lb/hr)	NO_x measured (ton/yr)	NO_x permitted (ton/yr)	NO_x corr. to ISO day (ppm)	NO_x (ISO) permitted (ppm)
1	10557 (93%)	89.8	50.7	222.2	259	99.9	95
2	7194 (63%)	68.9	30.9	135.5	259	87.9	95

Table II Unit 1C CO Emissions

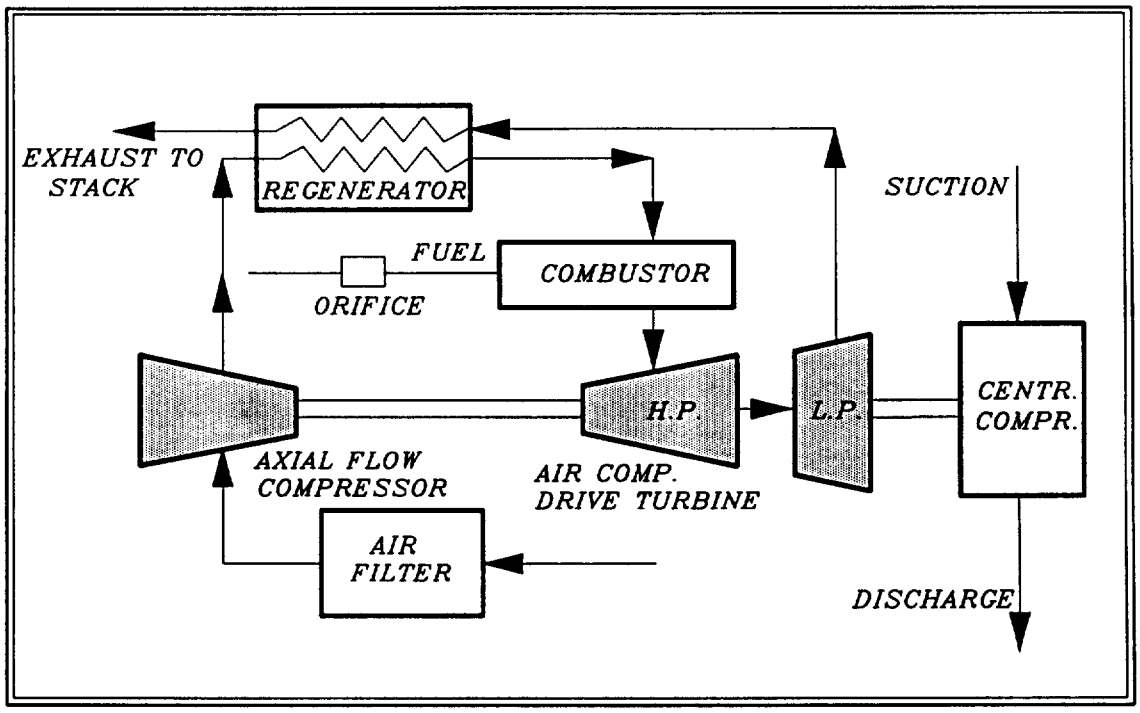
Run Number	Horsepower (% load)	CO measured (ppm)	CO measured (lb/hr)	CO measured (ton/yr)	CO permitted (ton/yr)
1	10557 (93%)	0.1	0.04	0.18	2.0
2	7194 (63%)	0.59	0.16	0.72	2.0

PROCESS DESCRIPTION

This G.E. Frame 3 is a regenerative cycle, split-shaft turbine. Filtered atmospheric air is first compressed by the axial flow air compressor. The compressed air then flows through the regenerator (heat exchanger) where heat from the exhaust stream increases its temperature. The hot compressed air is then fired with natural gas in the combustors. The hot exhaust gases expand through two turbine stages. The high pressure (H.P.) turbine drives the axial flow air compressor while the low pressure (L.P.) turbine drives the centrifugal pipeline compressor. This centrifugal compressor boosts the pipeline gas from a 'suction' state to a higher pressure 'discharge' state. A block diagram of the turbine-compressor package is shown in **Figure I.**

Figure I

REGENERATIVE GAS TURBINE CYCLE



EMISSIONS TEST VEHICLE

Tenneco Gas has conducted emissions tests on reciprocating engines and turbines for many years. This testing experience has enabled the Technical Services Department to design and assemble an accurate and versatile emissions test vehicle (ETV).

The ETV is a 48 foot box trailer housing all analyzers, computers and auxiliary equipment. This testing system is capable of continuously monitoring the following parameters:

1. Oxygen (3)
2. Total unburnt hydrocarbons (2)
3. Nitrogen oxides (2)
4. Carbon dioxide (2)
5. Carbon monoxide (2)
6. Temperature (23)
7. Pressure (16)
8. Frequency (4)

The number in parenthesis after each parameter indicates the number of analyzers, transducers, or sensors for measuring that parameter.

The instrument outputs are scanned by a Hewlett Packard 3497A Data Acquisition Control System (DACS). The data is transferred to a Hewlett Packard 330 computer for analysis and storage. The computer monitors the readings in real-time and outputs the data averages to a video monitor, a printer, 3.5" high density discs, and, if needed, a hard drive. In addition, four strip chart channels are available as a visual aid and back-up to the data recording system.

All instruments and transducers used in the ETV produce a linear response. The DACS samples the response (voltage) from the instruments. The computer converts the voltage into engineering units by multiplying the voltage by a slope and adding an intercept. For the analyzers, the slope and intercept are generated by introducing a zero concentration of span gas (zero grade air for NO and NO_x analyzers, zero grade nitrogen for O_2 and CO analyzers) and then a known span gas. The voltages for each analyzer and transducer are recorded and used in the following formula:

$$Y = MX + B$$

Where:

B = Intercept
M = Slope
X = Analyzer or transducer voltage
Y = Engineering Units

SAMPLING SYSTEM

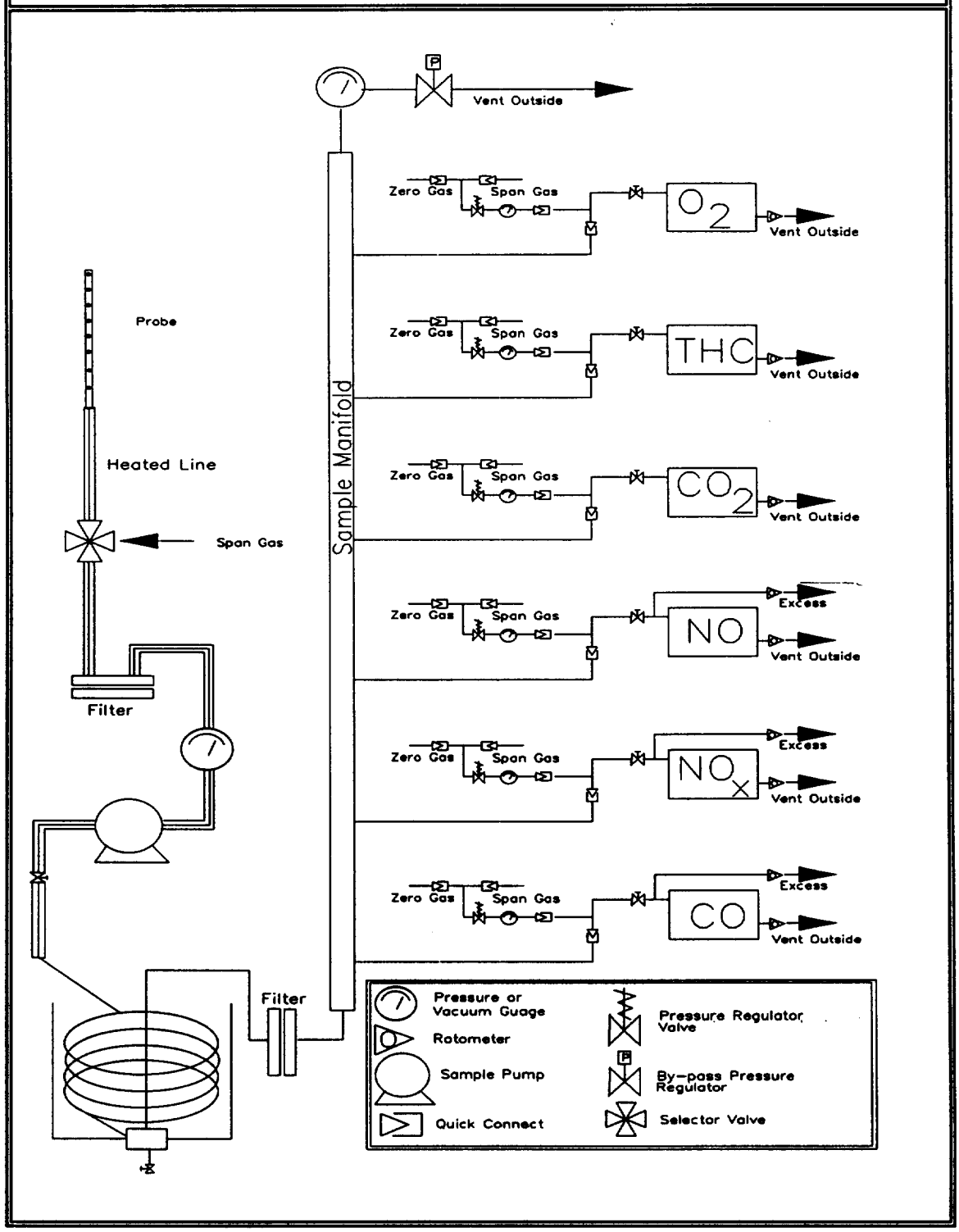
Continuous analyzers were used to determine the NO, NO_x, CO, THC, CO_2, and O_2. See **Table III** for the analyzers and the methods of analysis.

Exhaust gas enters the system through a stainless steel probe with 8 sampling holes, a 3-way calibration/sample valve assembly, and a glass wool filter. The sample is transported via a heat-traced Teflon sample line through a stainless steel sample pump onto a minimum contact condenser especially designed to dry the sample. The sample is then passed through 3/8" Teflon tubing to a Balston Microfibre coalescing filter and then to the sample manifold. The sample manifold is maintained at a constant pressure by means of a pressure bypass regulator. Stainless steel needle valves control the sample flow to each analyzer. A flowmeter is in line at the exhaust of each analyzer to monitor exact sample flows except for the NO_x and CO analyzers, in which case a rotometer is placed in the bypass line. These two analyzers are treated differently since they have their own sampling pumps and capillary flow controlling systems. See **Figure II** for the flow schematic.

Table III

INSTRUMENTATION AVAILABLE				
Parameters	Manufacturer and Model	Detection Principle	Range	Number
NO_x	TECO Model 10 AR	Thermal reduction of NO_2 to NO. Chemiluminescent reaction of NO with O_3	0 to 250 ppm	2
CO	TECO Model 48	NDIR with Gas Filter Correlation	0 to 100 ppm	1
CO_2	Infrared Industries Model 702	NDIR	0 to 10%	1
THC	Beckman Instruments Model 400	Flame ionization	Variable to 10000 ppm	2
O_2	Beckman Instruments Model 755	Paramagnetic	0 to 25%	3
CO/CO_2	Infrared Industries Model 704	NDIR	0 to 1000 ppm/0 to 10 %	1
Temperature	Omega Instruments Type K	Chromel-alumel thermocouple	(-328) to 2282 °F	18
Temperature	Sto-Lab Model 921A	Platinum resistant temperature device	(-121) to 392 °F	3
Temperature	Rosemount Model 444 and 444RL (Fuel orifice tube)	Platinum resistant temperature device	-40 to 230 °F	2
Pressure	Validyne Model 151	Variable magnetic reluctance	Variable to 3200 psig	6
Pressure	Datametrics Model 590 Barocel	Variable capacitance	0 to 100 inches of water	3
Pressure	Sensotech Super TJE and Series Z	Strain guage	0 to 1500 psig and 0 to 40 psig	3
Pressure	Rosemount Models 1151DP, 1151GP, 3051CG and 3051CD (Fuel orifice tube)	Variable capacitance	0 to 150 inches of water and 0 to 1000 psig	4

FIGURE II Flow Schematic For Exhaust Sampling System



GENERAL TESTING PROCEDURE

A modified Method 20 was used to determine the exhaust oxygen and oxides of nitrogen concentrations from the turbine. The sampling procedure for CO was based on EPA Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources." Calibration and test procedures are detailed under their respective sections of the TEST SPECIFICS portion of this report.

TEST SPECIFICS - INSTRUMENT CHECKS AND CALIBRATIONS

The following instrument checks and calibrations guarantee the integrity of our sampling system and the accuracy of our data.

EPA PROTOCOL GASES

Calibration sheets for EPA Protocol 1 calibration gases are included in **Appendix D.**

INTERFERENCE RESPONSE

Vendor instrument data concerning interference response in the NO_x and O_2 analyzers is included in **Appendix E.**

RESPONSE TIME TESTS

Response time tests were not performed. The residence time is calculated to be less than two seconds. The sample pump has a flow rate of 0.025 SCFS at 5 psig pressure. The volume of the complete sample line assembly is calculated to be 0.048 cubic feet. As is discussed under EXCEPTIONS TO EPA METHODS, response time is not a crucial factor in our gas turbine testing because a probe with eight holes is used rather than moving a single point probe.

LINEARITY CHECK

The oxygen and oxides of nitrogen analyzers were "zeroed" using zero grade nitrogen and zero air respectively. The analyzers were "spanned" using the mid-level calibration gases. Then the low and high level calibration gases were introduced to the analyzers one at a time. The analyzers' linearity was acceptable as the actual responses of the low and high level calibration gases were within ±2 percent of the predicted values of a linear curve determined from the zero and mid-level calibration gas responses. The Linearity Check forms and data sheets are included in **Appendix A.**

SAMPLE LINE LEAK AND INTEGRITY CHECK

The sample line was leak checked before and after the test runs by closing the calibration valve assembly while the sample pump was operating. Once the maximum vacuum was reached (greater than 20 inches of mercury) the valve on the pressure side of the pump was closed (See **Figure II**) thus sealing off the vacuum section of the sampling

system. The leak test was acceptable as the vacuum guage reading dropped by an amount less than 1 inch of mercury over a period of 1 minute.

The sample line integrity was tested by first introducing a zero gas directly to the NO_x analyzer and allowing the analyzer's response to stabilize. A high level calibration NO gas was then directly introduced to the analyzer until a stable response was recorded. Then the same high level NO calibration gas was introduced through the sample line at the calibration valve and the analyzer response was allowed to stabilize. The two high-level calibration response values did not vary by more than ±3 percent, therefore the sample line was considered acceptable. The Sample Line Integrity and Leak Check forms and data sheets are included in **Appendix A.**

NO_2 CONVERTER CHECK

A calibration gas mixture of known concentrations of between 40 and 60 ppm nitrogen dioxide (NO_2) and 90 to 110 ppm nitric oxide (NO) with a balance of nitrogen was used. The calibration gas mixture was introduced to the oxides of nitrogen (NO_x) analyzer until a stable response was recorded. The calibration gas was introduced to the back of the analyzer rather than through the calibration/sample valve. The converter was considered acceptable as the instrument response indicated a 90 percent or greater NO_2 to NO conversion. The Convertor Check forms and data sheets are included in **Appendix A.**

CALIBRATION

A zero and a mid-level gas were introduced to the analyzers before the test. The analyzers' output responses were set to the appropriate levels. After the test, calibration consisted of re-introducing the zero and span gases to the analyzers. The analyzers' stabilized responses were recorded. No adjustments were made during the final calibration.

The before and after calibrations were used to determine a zero and span drift for the run for the CO, NO_x and O_2 analyzers. The zero and span drift for the run was less than ±2 percent of the span value for Run 1. However, the zero and span drift in the NO_x analyzer exceeded the specified limits for Run 2 so the instrument was re-calibrated and the calibration values that resulted in the highest NO_x emission rates were used. The Calibration forms and data sheets are included in **Appendix A.**

CHART RECORDING

A copy of the chart recording of the entire calibration procedure is marked and included in the beginning of **Appendix A.**

TEST SPECIFICS - EMISSIONS TESTING

The following sections describe the actual emissions test runs.

SAMPLING LOCATION AND SET-UP

Figures III and **IV** show the sample point locations and the exhaust stack configuration. The sample probe consisted of 3/8" stainless steel tubing plugged at one end, with eight 1/8" holes. The holes were drilled at positions of approximately 3.2, 10.5, 19.4, 32.3, 67.7, 80.6, 89.5 and 96.8 percent of the stack width (52.6"). See **Figure III.**

OXYGEN TRAVERSE

On January 12, 1990 an oxygen traverse was performed to confirm the lack of stratification in the exhaust stream. The L.P. shaft rotates at speeds in excess of 5000 RPM so complete homogeneity is assured. The Oxygen Traverse data sheets are included in **Appendix C** along with a summary.

FUEL GAS ANALYSIS

Two fuel gas samples were taken during the testing. One sample was analyzed by the Tenneco Gas lab. This analysis gave the actual specific gravity and BTU so that horsepower, fuel flow and mass emissions could be accurately calculated. The other sample was taken to an independent lab for sulfur analysis. The data sheets for both analyses are included in **Appendix F.**

CHART RECORDING

Copies of the chart recordings of the oxygen traverse and the test runs are marked and included in the beginning of **Appendices B and C.**

TEST RUNS

At the request of the TACB, the turbine was tested at two different load conditions: 93 % and 63 %. The turbine was monitored for three periods of fifteen minutes each at both of these load conditions. The exhaust gases were sampled continuously to determine NO, NO_x, CO, THC, CO_2 and O_2 concentrations. Other important parameters such as pipeline pressures and turbine speeds were also monitored continuously.

The data acquisition system scanned the analyzers and transducers five times each minute. The outputs were averaged by the computer and printed every minute. These raw data sheets are included in **Appendix B.** A summary of the data, with each fifteen minute period averaged, is given for both runs in **Tables IV** and **V** below.

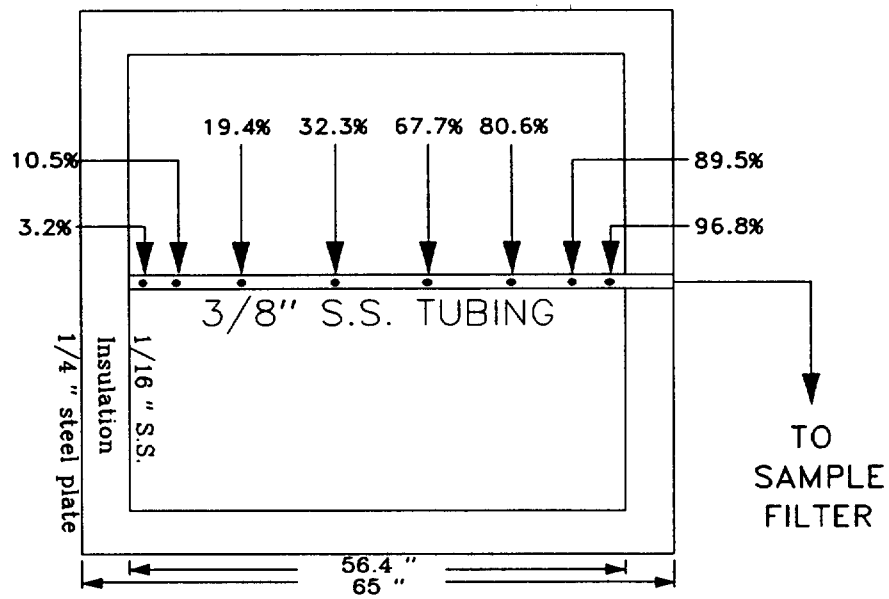
Fuel use was measured by an AGA spec orifice meter installed on the turbine. Fuel flow was calculated using AGA approved equations. These equations are detailed in the SAMPLE CALCULATIONS section of this report.

The turbine horsepower was determined by measuring the power used in the gas compression process. This calculation involved two principal factors. They were the throughput, measured using a calibrated turbine meter, and the increase in 'head' of the pipeline gas, calculated using measured pressures and temperatures. These equations are also detailed in the SAMPLE CALCULATIONS section of this report.

Compressor discharge pressure was monitored with a calibrated variable reluctance pressure transducer. Humidity and ambient temperature were taken with a portable hygrometer and a Type K thermocouple, respectively.

Sample Manifold

Figure III



Exhaust Sample Port Location

Figure IV

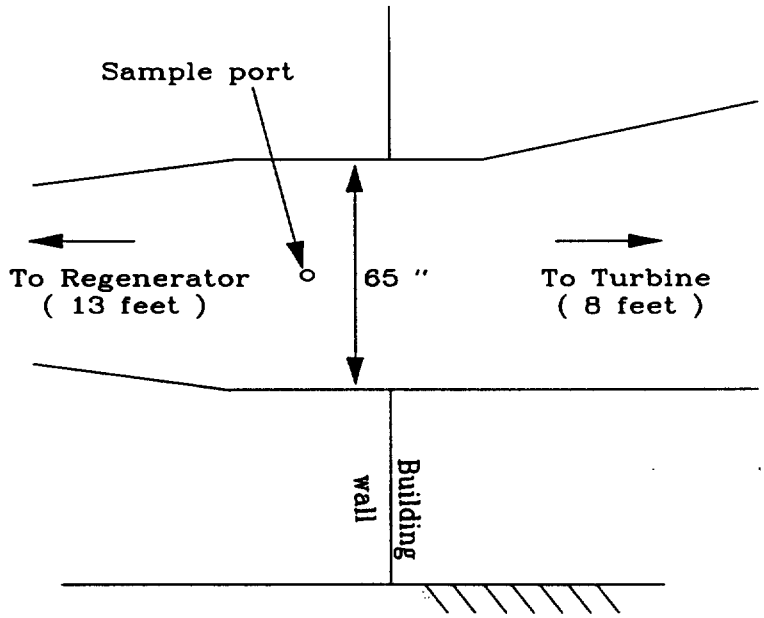


Table IV
January 31, 1990 Averaged Results (High Horsepower)

G.E. Frame 3	Run #1A (@10:15)	Run #1B (@10:29)	Run #1C (@10:45)
Fuel Consumption (SCFM)	1481	1491	1499
Turbine Horsepower	10525	10564	10581
Heat Rate (BTU/(BHP-HR))	8054	8080	8107
Throughput (MMSCFD)	455	458	460
H.P. Shaft Speed (RPM)	7000	7051	7081
L.P. Shaft Speed (RPM)	6370	6370	6370
Turbine Meter Freq. (HZ)	293	295	296
Pressures			
Suction (psig)	428.6	429.4	430.1
Discharge (psig)	651.7	652.1	652.4
Fuel Meter Tube (psig)	196.9	197.2	197.3
Fuel Orifice Diff. (in. H_2O)	50.9	51.6	52.1
Axial Flow Compr. (psig)	77.9	78.5	78.9
Barometric (in. Hg)	29.98	29.96	29.96
Temperatures			
Exhaust (° F)	624	628	630
Sample Point (° F)	996	996	995
Fuel (° F)	77.6	77.7	77.5
Inlet Air (° F)	65	67	67
Suction (° F)	58.0	58.1	58.2
Discharge (° F)	122.3	122.2	122.1
Dry Bulb (° F)	68	68	68
Wet Bulb (° F)	62	62.5	63
Emissions Measured			
NO (ppm)	84.0	84.5	84.3
NO_x (ppm)	90.0	89.8	89.7
CO (ppm)	0.2	0.2	0.0
Unburnt hydrocarbons (ppm)	1.7	1.7	1.7
O2 (%)	17.27	17.26	17.25
CO_2 (%)	2.1	2.1	2.1
Emissions Calculated			
NO_x (lbs./hr.)	50.6	50.8	50.8
CO (lbs./hr.)	0.07	0.05	0.0
NO_x (ppm corr. to ISO day)	99.7	99.9	100.2
Fuel Data in Mole%			
Carbon Dioxide	0.86	0.86	0.86
Nitrogen	0.33	0.33	0.33
Methane	94.25	94.25	94.25
Ethane	3.02	3.02	3.02
Propane	0.82	0.82	0.82
Isobutane	0.21	0.21	0.21
N-butane	0.19	0.19	0.19
Isopentane	0.08	0.08	0.08
N-pentane	0.06	0.06	0.06
Hexanes plus	0.18	0.18	0.18
Specific Gravity	0.6007	0.6007	0.6007
Piping Data			
Fuel Tube I.D. (inches)	3.068	3.068	3.068
Fuel Orifice I.D. (inches)	1.750	1.750	1.750
Turbine Meter I.D. (inches)	34.75	34.75	34.75

Table V
January 31, 1990 Averaged Results (Low Horsepower)

G.E. Frame 3	Run #2A (@12:42)	Run #2B (@12:56)	Run #2C (@13:12)
Fuel Consumption (SCFM)	1040	1049	1053
Turbine Horsepower	7153	7196	7234
Heat Rate (BTU/(BHP-HR))	8320	8343	8332
Throughput (MMSCFD)	365	370	373
H.P. Shaft Speed (RPM)	6122	6136	6151
L.P. Shaft Speed (RPM)	5614	5614	5614
Turbine Meter Freq. (HZ)	223	225	226
Pressures			
Suction (psig)	452.7	454.0	455.1
Discharge (psig)	644.9	645.9	647.0
Fuel Meter Tube (psig)	199.1	198.7	198.7
Fuel Orifice Diff. (in. H_2O)	24.9	25.3	25.5
Axial Flow Compr. (psig)	57.6	58.0	58.3
Barometric (in. Hg)	29.90	29.90	29.89
Temperatures			
Exhaust (° F)	576	576	577
Sample Point (° F)	1007	1006	1006
Fuel (° F)	77.4	77.1	76.8
Inlet Air (° F)	71	71	71
Suction (° F)	58.7	58.6	58.6
Discharge (° F)	113.4	113.0	112.8
Dry Bulb (° F)	72	72	72
Wet Bulb (° F)	67.5	67.5	68
Emissions Measured			
NO (ppm)	61.4	61.6	61.6
NO_x (ppm)	69.3	68.9	68.5
CO (ppm)	0.6	0.6	0.6
Unburnt hydrocarbons (ppm)	1.8	2.0	1.8
O2 (%)	17.69	17.68	17.68
CO_2 (%)	1.8	1.7	1.8
Emissions Calculated			
NO_x (lbs./hr.)	31.0	31.0	30.9
CO (lbs./hr.)	0.2	0.2	0.2
NO_x (ppm corr. to ISO day)	88.5	87.7	87.6
Fuel Data in Mole%			
Carbon Dioxide	0.86	0.86	0.86
Nitrogen	0.33	0.33	0.33
Methane	94.25	94.25	94.25
Ethane	3.02	3.02	3.02
Propane	0.82	0.82	0.82
Isobutane	0.21	0.21	0.21
N-butane	0.19	0.19	0.19
Isopentane	0.08	0.08	0.08
N-pentane	0.06	0.06	0.06
Hexanes plus	0.18	0.18	0.18
Specific Gravity	0.6007	0.6007	0.6007
Piping Data			
Fuel Tube I.D. (inches)	3.068	3.068	3.068
Fuel Orifice I.D. (inches)	1.750	1.750	1.750
Turbine Meter I.D. (inches)	34.75	34.75	34.75

SAMPLE CALCULATIONS

MASS EMISSIONS CALCULATIONS

The F-factor Method was used to calculate the mass emission rates for CO and NO_x. A F_d factor of 8710 dry standard cubic feet per 10^6 BTU was used as listed in Table 19-1 of EPA Method 19, "Determination of Sulfur Dioxide Removal Efficiency and Particulate, Sulfur Dioxide and Nitrogen Oxides Emission Rates from Electric Utility Steam Generators" for natural gas. The emission rate was calculated using the following equation:

$$Em = Cd \times Fd \times \frac{20.9}{(20.9 - \%O_2)} \times Qh \times GCV \times 10^6$$

Where:

Em	=	pollutant emission rate, lb/hr
Cd	=	pollutant concentration, lb/scf
Fd	=	is the average F-Factor for Cd measurements on a dry basis, dscf per 10^6 BTU (8710 dscf per 10^6 BTU for natural gas)
$\%O_2$	=	exhaust oxygen concentration in percent, measured on a dry basis
Qh	=	fuel rate, scfh
GCV	=	heating value of the fuel, Btu/scf

The following conversion factors were used to correct the pollutant concentration in ppm to lb/scf:

To Convert from	To Cd	Multiply By
ppm CO	lb/scf	7.268×10^{-8}
ppm NO_x	lb/scf	1.194×10^{-7}

Plugging in the numbers from Run 1A gives:

$$Em = 90.0 \times 1.194 \times 10^{-7} \times 8710 \times \frac{20.9}{(20.9 - 17.27)} \times (1481 \times 60) \times \frac{1058}{10^6}$$

$$Em = 50.6 \frac{lb}{hr}$$

EMISSIONS CORRECTED TO ISO STANDARD DAY

The measured concentration of NO_x was adjusted to ISO Standard Day conditions as is set forth in CFR Title 40, Subpart GG. The only exception was that the measured values were **not** first corrected to 15 % oxygen. This correction was not required by the permit. The emission rate was calculated using the following equation:

$$NO_x = NO_{x_{obs}} \times \left(\frac{P_{ref}}{P_{obs}}\right)^{0.5} \times 2.718^{19\times(H_{obs}-0.00633)} \times \left(\frac{288}{T_{amb}}\right)^{1.53}$$

Where:

NO_x = corrected emission rate, ppm

$NO_{x_{obs}}$ = observed emission concentration, ppm

P_{ref} = reference combustor pressure, psia

P_{obs} = observed combustor pressure, psia

H_{obs} = specific humidity, lb/lb dry air

T_{amb} = ambient temperature, degrees Kelvin

Plugging the numbers in from Run 1A gives:

$$NO_x = 90.0 \times \left(\frac{103}{(77.9+14.72)}\right)^{0.5} \times 2.718^{19\times(0.01039-0.00633)} \times \left(\frac{288}{293}\right)^{1.53}$$

$$NO_x = 99.7\,ppm$$

THROUGHPUT

Throughput was measured with a calibrated insertion meter installed on the suction side of the compressor. The meter outputs a signal whose frequency is directly proportional to the actual volume of gas passing that point. This volume can then be corrected to any standard condition. The equations used were:

$$K_f = \frac{K_i}{K_{obs}}$$

$$A_p = \left(\frac{D_p}{12}\right)^2 \times \frac{3.1416}{4}$$

$$P_f = \frac{K_f}{A_p}$$

$$Q_a = \frac{F_m \times 60}{P_f}$$

Where:

K_f	=	final correction factor
K_i	=	calibrated correction factor
K_{obs}	=	manufacturer's obstruction factor
A_p	=	cross sectional area of the pipe, ft^2
D_p	=	pipe diameter, inches
P_f	=	pulses per actual cubic foot of gas
F_m	=	measured frequency from meter, hertz
Q_a	=	gas flow rate, actual cubic feet per minute

Plugging in the values from Run 1A:

$$K_f = \frac{11.82}{0.995}$$

$$A_p = \left(\frac{34.75}{12}\right)^2 \times \frac{3.1416}{4}$$

$$P_f = \frac{11.88}{6.59}$$

$$Q_a = \frac{293 \times 60}{1.80} = 9752\,ACFM = 455\,MMSCD$$

HORSEPOWER

Horsepower consumed by the compression of gas is basically a product of head increase and throughput. The head increase is expressed as an increase in enthalpy:

$$\frac{Bhp}{MMSCFD} = 0.04325061 \times \frac{(H_d - H_s)}{Eff_m}$$

$$Bhp = \left(\frac{Bhp}{MMSCFD}\right) \times MMSCFD$$

Where:

0.04325061	=	conversion constant
H_d	=	discharge gas enthalpy, Btu/lb-mole
H_s	=	suction gas enthalpy, Btu/lb-mole
Eff_m	=	compressor mechanical efficiency
Bhp	=	brake horsepower
$MMSCFD$	=	compressor throughput (million standard cubic feet of gas per day)

Plugging the numbers from Run 1A into the equation yields:

$$\frac{Bhp}{MMSCFD} = 0.04325061 \times \frac{(4493.2 - 3963.7)}{.99}$$

$$Bhp = \left(\frac{Bhp}{MMSCFD}\right) \times MMSCFD = 23.13 \times 455$$

$$Bhp = 10525$$

FUEL RATE

The fuel rate was measured by means of an orifice tube built to AGA Report No. 3 specifications. The fuel rate was calculated using the following equations:

Reference: Orifice Meter Constants, Handbook E-2 (Based on AGA Report No. 3) by H.V. Beck, American Meter Company (1955)

$$C' = Fb \times Fpb \times Ftb \times Fg \times Ftf \times Fr \times Y2 \times Fpv \times Fm$$

$$Qh = C' \times \sqrt{hw \times Pf}$$

$$Q_{tm} = \frac{Qh}{60}$$

Where:

Qh = Quantity of flow at base conditions, ft.^{3}/hr.
Q_{tm} = Quantity of flow at base conditions, SCFM
C' = Orifice flow constant
Fb = Basic orifice flow factor
Fpb = Pressure base factor
Ftb = Temperature base factor
Fg = Specific gravity factor
Ftf = Flowing temperature factor
Fr = Reynold's number factor
$Y2$ = Expansion factor (pressure from downstream tap)
Fpv = Supercompressability factor
Fm = Manometer factor
hw = Differential pressure in inches of water
Pf = Static pressure in psia

Plugging the numbers from Run 1A yields:

$$C' = 663 \times 1 \times 1 \times 1.29 \times 0.98 \times 1 \times 1.001 \times 1.014 \times 1$$

$$Qh = 855.7 \times \sqrt{50.9 \times 211.62}$$

$$Q_{tm} = \frac{88852.2}{60} = 1481$$

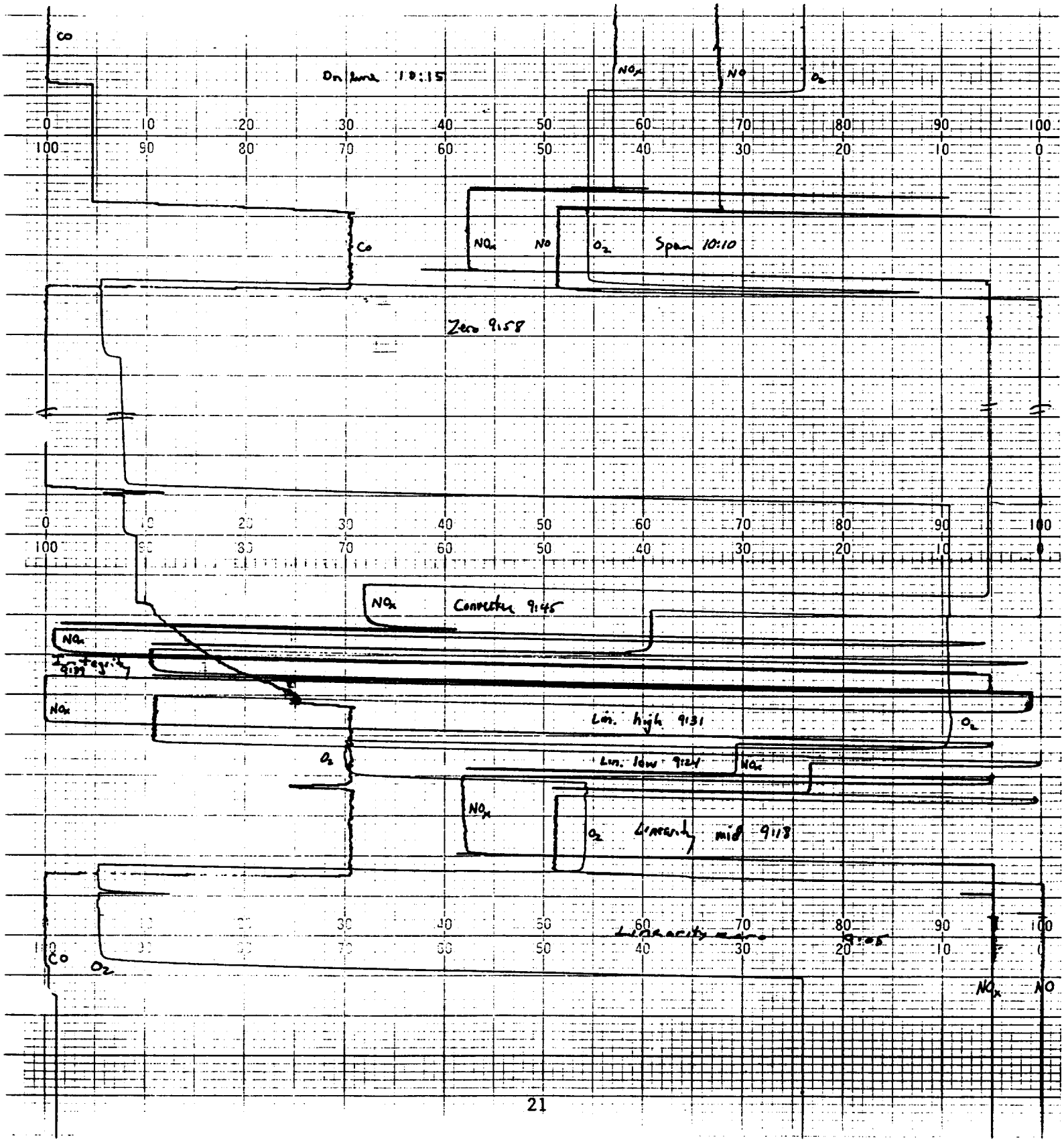
EXCEPTIONS TO EPA METHODS

1. Utilization of a different sampling system design. The moisture removal system was located before the NO_2 to NO converter and after the coarse filter. This is similar to the system design included in the Federal Register, Vol. 51, No. 177 September 12, 1986, "Standards of Performance for New Stationary Sources; Additions of Quality Assurance and Quality Control Procedures to Methods 5A, 5D, 6A, 6B and 20".
2. A sample probe with eight openings was used rather than moving a single point probe to the different sampling positions. An oxygen traverse was performed and is included in **Appendix C**. Given the configuration of the exhaust piping and the operating parameters of the unit, the exhaust flow was not stratified.
3. Calibration gas was introduced directly to the analyzer rather than going through the complete sample line assembly. The sample line was leak checked and integrity checked.
4. A resident time calculation is provided for the sampling system rather than performing a response time test. The response time test is used for selecting the minimum sampling time required at each sample point location. The sampling time is selected to assure that the analyzers response is for exhaust gas entering the sampling system from each of the sample point locations. Using a probe with multiple openings eliminates that problem since the probe is not moved from point to point but rather all points are sampled simultaneously. A strip chart recorder tracing of the analyzers' response was used to determine that exhaust gas was being analyzed before the start of each sample period.
5. The fuel BTU analysis was performed by a gas chromatograph rather than by means of a calorimeter.

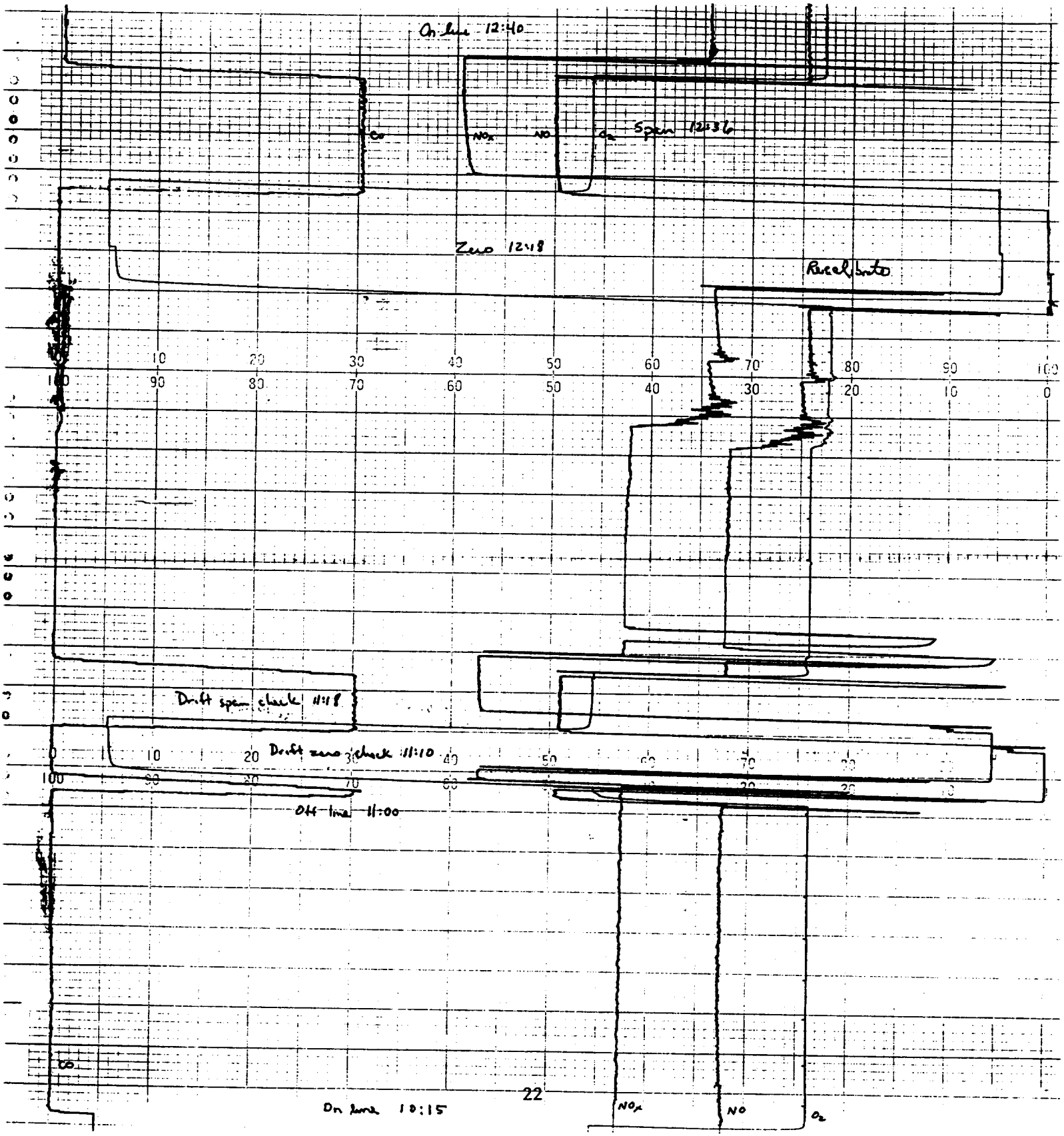
APPENDIX A

CALIBRATION RECORDS AND RAW DATA

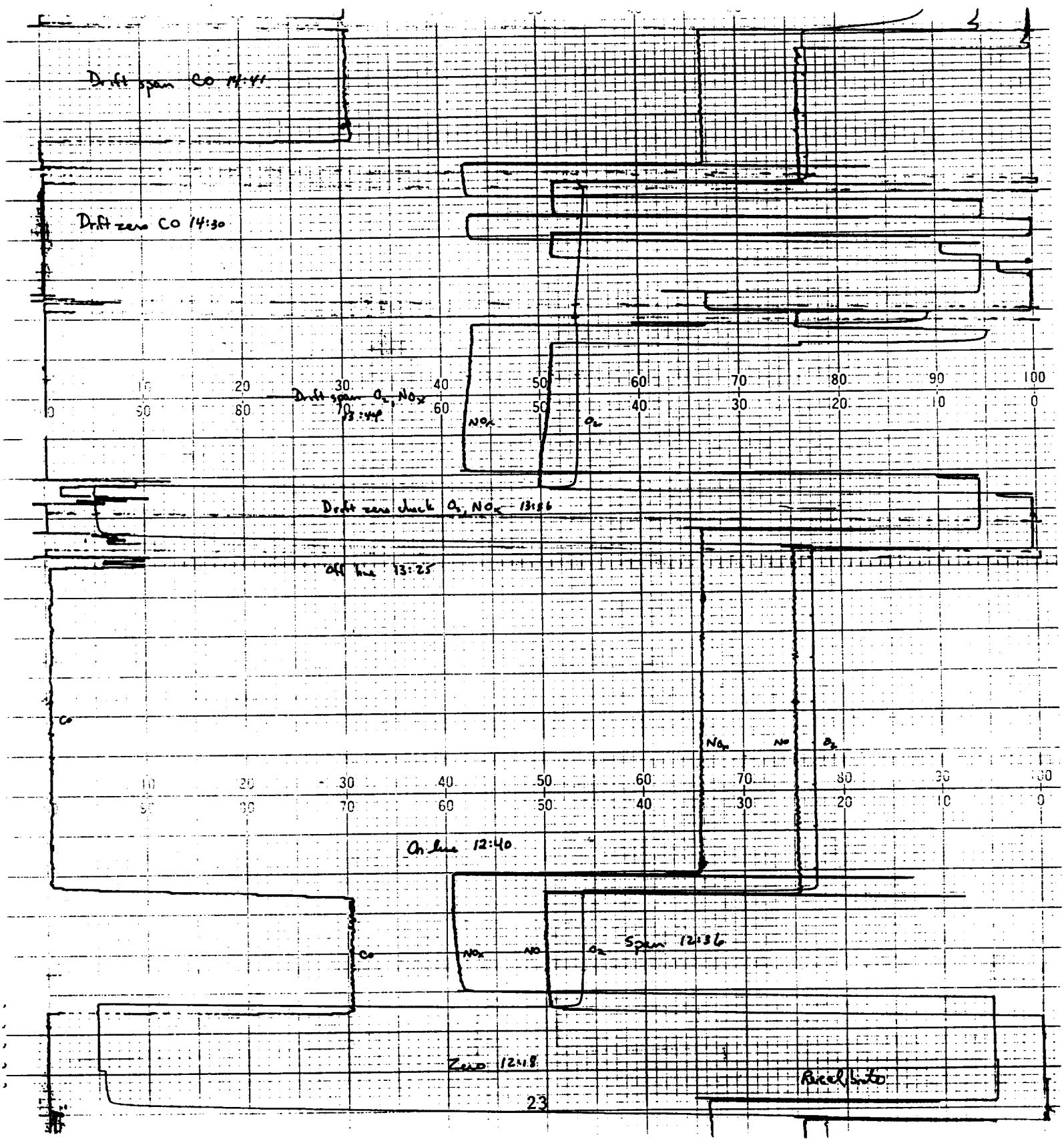
Initial Calibrations and Checks
Run 1 Initial zero + span



Run 1 Final zero + span
Run 2 Initial zero + span



Run 2 Final zero + span



O2 ANALYZER
LINEARITY CHECK

STATION 17

ENGINE 1C

DATE 1-31-90

TEST# 1

RUN# 1

ANALYZER Beckman Model 755

S/N 1000832

	CYLINDER #	CYLINDER VALUE O2%	INITIAL ANALYZER RESPONSE O2%	PERCENT DIFFERENCE
ZERO GAS	AAL17031	0.00	SCAN TIME 09:05 -.0003551	
MID-LEVEL GAS	AAL1776	12.00	SCAN TIME 9:18 12.01	
LOW-LEVEL GAS	AAL5893	6.02	SCAN TIME 9:24 6.072	.86 %
HIGH-LEVEL GAS	AAL2517	20.95	SCAN TIME 9:31 20.91	.19 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

NOx ANALYZER LINEARITY CHECK

STATION 17

ENGINE 1c

DATE 1-31-90

TEST# 1

RUN# 1

ANALYZER TECO model 10

S/N 10AR-9686-110

	CYLINDER #	CYLINDER VALUE NOx ppm	INITIAL ANALYZER RESPONSE NOx ppm	PERCENT DIFFERENCE
ZERO GAS	ALM-3315	0	-.05382 9:05	
MID-LEVEL GAS	ALM 11615	125.2	125.5 9:18	
LOW-LEVEL GAS	ALM 6123	61.54	60.65 9:24	1.45 %
HIGH-LEVEL GAS	ALM 7345	223.4	223.6 9:31	.09 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

O_2, NO_x
Linearity Zero

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:04:57

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	-.0448	ppm	4	Outlet NOX	-.05382	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.01709	ppm	10	Outlet CO2	-.00059	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.1318	ppm
13	Inlet O2	-.00035	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6992	RPM	21	Suction(S.)	423.1	psig
81	LP Speed(Freq.)	6439	RPM	22	Discharge(S.)	652.2	psig
82	EFM(Freq.)-suct	292.9	HZ	61	Air Compressor	77.94	psig
83	EFM(Freq.)-disc	216.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	195.8	psig	30	Fuel Diff. (R.)	52.44	InH2O
37	Fuel Temp. (S.)	78.63	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	222.1	Deg F
5	After Pump (K)	241.4	Deg F	6	Ice Bath (K)	34.45	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.33	Deg F
9	Ambient (K)	61.48	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	621	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.75	Deg F
19	Discharge(RTD)	124.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0901 **

O_2 NO_x
Linearity Mid

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:18:12

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	124.7	ppm	4	Outlet NOX	125.5	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.78	ppm	10	Outlet CO2	1.994	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	45.06	ppm
13	Inlet O2	12.01	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7006	RPM	21	Suction(S.)	423.2	psig
81	LP Speed(Freq.)	6439	RPM	22	Discharge(S.)	652.6	psig
82	EFM(Freq.)-suct	293.8	HZ	61	Air Compressor	78.3	psig
83	EFM(Freq.)-disc	214.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.9	psig	30	Fuel Diff. (R.)	51.97	InH2O
37	Fuel Temp. (S.)	78.67	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.7	Deg F	4	Sample Filter (K)	225.4	Deg F
5	After Pump (K)	237.5	Deg F	6	Ice Bath (K)	35.66	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.59	Deg F
9	Ambient (K)	62.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.78	Deg F
19	Discharge(RTD)	124.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0914 **

O_2, NO_x
Linearity Low

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:23:43

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.06	ppm	4	Outlet NOX	60.65	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.68	ppm	10	Outlet CO2	1.993	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	45.19	ppm
13	Inlet O2	6.072	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7020	RPM	21	Suction(S.)	423.2	psig
81	LP Speed(Freq.)	6438	RPM	22	Discharge(S.)	652.8	psig
82	EFM(Freq.)-suct	290.1	HZ	61	Air Compressor	78.46	psig
83	EFM(Freq.)-disc	211.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.9	psig	30	Fuel Diff. (R.)	51.92	InH2O
37	Fuel Temp. (S.)	78.69	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	225.9	Deg F
5	After Pump (K)	236	Deg F	6	Ice Bath (K)	36.66	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.25	Deg F
9	Ambient (K)	62.58	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.79	Deg F
19	Discharge(RTD)	124.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0914 **

O_2, NO_x Linearity High

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:31:17

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	227.2	ppm	4	Outlet NOX	223.6	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.58	ppm	10	Outlet CO2	1.989	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	45.07	ppm
13	Inlet O2	20.91	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7066	RPM	21	Suction(S.)	424.6	psig
81	LP Speed(Freq.)	6438	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	296	HZ	61	Air Compressor	79.16	psig
83	EFM(Freq.)-disc	220.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	195	psig	30	Fuel Diff. (R.)	54.09	InH2O
37	Fuel Temp. (S.)	77.8	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.7	Deg F	4	Sample Filter (K)	228.5	Deg F
5	After Pump (K)	235.2	Deg F	6	Ice Bath (K)	38.13	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	63.12	Deg F
9	Ambient (K)	63.21	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	625.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.84	Deg F
19	Discharge(RTD)	123.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0914 **

SAMPLE LINE INTEGRITY CHECK

STATION 17 ANALYZER Teco Model 10

DATE 1C S/N 10AR-9686-110

	NOx Analyzer Response
NOx span gas through the complete calibration system (It)	SCAN TIME 9:31 223.6 ppm
NOx span gas through the complete sampling system (Ic)	SCAN TIME 9:39 221.5 ppm
	.95 %

Pre-test leak check (1 min.)
Start 21.1 mHg
Stop 21.0 mHg 8:52

Post-test leak check (1 min.)
Start 20.5 mHg 11:28
Stop 20.3 mHg

$$\text{Response Difference} = \frac{Ic - It}{Ic} * 100$$

Final leak check (1 min) 14:40
Start 20.1 mHg
Stop 20.1 mHg

Integrity

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:39:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	228.2	ppm	4	Outlet NOX	221.5	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	17.54	ppm	10	Outlet CO2	.8992	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	5.62	ppm
13	Inlet O2	20.84	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7080	RPM	21	Suction(S.)	425	psig
81	LP Speed(Freq.)	6438	RPM	22	Discharge(S.)	652.2	psig
82	EFM(Freq.)-suct	299.1	HZ	61	Air Compressor	79.38	psig
83	EFM(Freq.)-disc	220.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	195.6	psig	30	Fuel Diff. (R.)	53.77	InH2O
37	Fuel Temp. (S.)	78.01	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	207.1	Deg F
5	After Pump (K)	218.4	Deg F	6	Ice Bath (K)	38.46	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	63.51	Deg F
9	Ambient (K)	63.59	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.85	Deg F
19	Discharge(RTD)	123.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0914 **

NOX CONVERTER CHECK

DATE 1-31-90 STATION 17

ANALYZER NOx TECO Model 10 S/N 10AR-9686-110

CYLINDER # AAL-17388

CYLINDER CONTENTS:

NO 100.9 ppm

NO2 51.78 ppm

NOx 152.68 ppm

92.3 %

ANALYZER RESPONSE

NOx 148.7 ppm

9:45 am

Note: Instrument response level must be at least 90 percent NO2 to NO conversion.

Converter

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:45:31

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	100.5	ppm	4	Outlet NOX	148.7	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	11.85	ppm	10	Outlet CO2	.3737	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	-.2855	ppm
13	Inlet O2	20.82	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7083	RPM	21	Suction(S.)	425.2	psig
81	LP Speed(Freq.)	6438	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	298	HZ	61	Air Compressor	79.51	psig
83	EFM(Freq.)-disc	224.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.7	psig	30	Fuel Diff. (R.)	53.9	InH2O
37	Fuel Temp. (S.)	78.54	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	202.2	Deg F
5	After Pump (K)	216.5	Deg F	6	Ice Bath (K)	37.68	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	63.27	Deg F
9	Ambient (K)	63.54	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.86	Deg F
19	Discharge(RTD)	123.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0914 **

02 ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER Beckman Model 755

TEST# 1

ENGINE 1C

S/N 1000832

RUN# 1

	CYLINDER #	CYLINDER VALUE O2 %	INITIAL ANALYZER RESPONSE O2 %	FINAL ANALYZER RESPONSE O2 %	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	AAL17031	0.00	SCAN TIME 9:58 -.007593	SCAN TIME 11:10 .02062	.028213	
MID-LEVEL GAS	AAL1776	12.00	SCAN TIME 10:10 12.00	SCAN TIME 11:18 11.98	-.02	.16 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

NOX ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER TECO model 10

ENGINE 1C

TEST# 1

S/N 10AR-9686-110

RUN# 1

	CYLINDER #	CYLINDER VALUE NOX ppm	INITIAL ANALYZER RESPONSE NOX ppm	FINAL ANALYZER RESPONSE NOX ppm	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	ALM 3315	0.00	SCAN TIME 9:58 .03167	SCAN TIME 11:10 .8325	.8008	
MID-LEVEL GAS	ALM 11615	125.2	SCAN TIME 10:10 125.1	SCAN TIME 11:18 124	-1.1	.88 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

CO ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER TECO model 48

ENGINE 1C

TEST# 1

S/N 20374-190

RUN# 1

	CYLINDER #	CYLINDER VALUE CO ppm	INITIAL ANALYZER RESPONSE CO ppm	FINAL ANALYZER RESPONSE CO ppm	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	AAL 17031	0.00	SCAN TIME 9:58 -.1041	SCAN TIME 11:10 -.1088	-.0044	
MID-LEVEL GAS	Label damaged (EPA protocol)	30.7	SCAN TIME 10:10 30.67	SCAN TIME 30.51	~~.82~~ -.16	.52%

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

Initial Zero Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 09:58:22

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	-.0164	ppm	4	Outlet NOX	.03167	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.1041	ppm	10	Outlet CO2	.001029	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.6451	ppm
13	Inlet O2	-.00759	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7108	RPM	21	Suction(S.)	426.3	psig
81	LP Speed(Freq.)	6439	RPM	22	Discharge(S.)	652.6	psig
82	EFM(Freq.)-suct	299.2	HZ	61	Air Compressor	79.85	psig
83	EFM(Freq.)-disc	219.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196	psig	30	Fuel Diff. (R.)	54.84	InH2O
37	Fuel Temp. (S.)	77.45	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996	Deg F	4	Sample Filter (K)	216.3	Deg F
5	After Pump (K)	211.4	Deg F	6	Ice Bath (K)	36.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.33	Deg F
9	Ambient (K)	64.26	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.87	Deg F
19	Discharge(RTD)	123.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C0956 **

Initial Span Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:10:47

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	124.7	ppm	4	Outlet NOX	125.1	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.67	ppm	10	Outlet CO2	2.002	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	44.76	ppm
13	Inlet O2	12	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6984	RPM	21	Suction(S.)	427.5	psig
81	LP Speed(Freq.)	6374	RPM	22	Discharge(S.)	651.2	psig
82	EFM(Freq.)-suct	291.8	HZ	61	Air Compressor	77.78	psig
83	EFM(Freq.)-disc	214.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	195.5	psig	30	Fuel Diff. (R.)	50.62	InH2O
37	Fuel Temp. (S.)	78.35	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	997.9	Deg F	4	Sample Filter (K)	231.8	Deg F
5	After Pump (K)	229	Deg F	6	Ice Bath (K)	35.76	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.3	Deg F
9	Ambient (K)	64.29	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	624.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.89	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

Final zero Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 11:09:51

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	.3967	ppm	4	Outlet NOX	.8325	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.1088	ppm	10	Outlet CO2	2.053	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.829	ppm
13	Inlet O2	.02062	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7110	RPM	21	Suction(S.)	431.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	653.1	psig
82	EFM(Freq.)-suct	294.6	HZ	61	Air Compressor	79.25	psig
83	EFM(Freq.)-disc	218.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.3	psig	30	Fuel Diff. (R.)	52.64	InH2O
37	Fuel Temp. (S.)	76.79	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.2	Deg F	4	Sample Filter (K)	215.6	Deg F
5	After Pump (K)	245.1	Deg F	6	Ice Bath (K)	38.66	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	68.17	Deg F
9	Ambient (K)	67.9	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	631.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.13	Deg F
19	Discharge(RTD)	122	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

Final span Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 11:18:21

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	125.8	ppm	4	Outlet NOX	124	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.51	ppm	10	Outlet CO2	2.037	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.437	ppm
13	Inlet O2	11.98	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7126	RPM	21	Suction(S.)	431.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	653.2	psig
82	EFM(Freq.)-suct	297.3	HZ	61	Air Compressor	79.52	psig
83	EFM(Freq.)-disc	217.1	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.3	psig	30	Fuel Diff. (R.)	52.35	InH2O
37	Fuel Temp. (S.)	77.2	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	994.4	Deg F	4	Sample Filter (K)	212.2	Deg F
5	After Pump (K)	228.9	Deg F	6	Ice Bath (K)	38.3	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	68.41	Deg F
9	Ambient (K)	67.97	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	632.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.15	Deg F
19	Discharge(RTD)	121.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

TENNECO GAS TRANSPORTATION
TECHNICAL SERVICES DEPARTMENT
MECHANICAL SECTION
5510 South Rice Avenue, Houston, TX 77081 (713) 662-5315

Slopes and Intercepts Run 1

******SUMMARY OF CALIBRATION VALUES******

31 Jan 1990 STATION #17
12:04:49 ENGINE #1C

#	INSTRUMENT LABEL	ZERO VALUE	ZERO VOLTS	SPAN VALUE	SPAN VOLTS	CAL. SLOPE	Y INTCPT
1	Inlet NO	0	0	502.3	10	50.23	0
2	Outlet NO	0	.03252	124.8	4.878	25.76	-.8376
3	Outlet NO	0	8.571E-7	223.1	1.5E-6	3.47E+8	-297.5
4	Outlet NOX	0	.0707	125.2	5.307	23.91	-1.691
5	Ambient NO	0	0	2.479	10	.2479	0
6	Ambient NOX	0	0	2.508	10	.2508	0
7	Inlet CO	0	0	398	5	79.6	0
8	Inlet CO2	0	0	4.517	5	.9034	0
9	Outlet CO	0	-.02188	30.7	3.019	10.1	.2209
10	Outlet CO2	0	.006245	2	1.037	1.94	-.0121
11	Inlet Total HC	0	0	3537	-5	-707.4	0
12	Outlet Total HC	0	.04407	44.8	2.064	22.18	-.9773
13	Inlet O2	0	.02783	12	2.462	4.929	-.1372
14	Outlet O2	0	-.01718	12	2.423	4.918	.08449
15	Ambient O2	0	0	20.92	5	4.184	0
16	Spare	0	0	10	10	1	0
17	Spare	0	0	10	10	1	0
18	Spare	0	0	10	10	1	0
19	Spare	0	0	10	10	1	0
20	Spare	0	0	10	10	1	0
21	Suction(S.)	0	-.01454	415.1	1.372	299.5	4.355
22	Discharge(S.)	0	.0003653	649.6	2.167	299.9	-.1095
23	Differential (S.)	0	-.02619	94	1.102	83.28	2.181
24	Spare	0	0	1500	5	300	0
25	Spare	0	0	1500	5	300	0
26	Spare	0	0	1500	5	300	0
27	Spare	0	0	1500	5	300	0
28	Spare	0	0	1500	5	300	0
29	Fuel Pressure (R.)	0	.9985	499.8	2.995	250.3	-250
30	Fuel Diff. (R.)	0	.9998	94	4.754	25.04	-25.04
31	Fuel Temp. (R.)	32.46	1	183.3	5	37.71	-5.25
32	Spare	0	1	100	5	25	-25
33	Barocel 1	0	0	100	10	10	0
34	Barocel 2	0	0	100	10	10	0
35	Barocel 3	0	0	100	10	10	0
36	Spare	0	0	100	10	10	0
37	Fuel Temp. (S.)	0	0	10	10	1	0
38	Spare	0	0	10	10	1	0
39	Unused	0	0	1000	10	100	0
40	Unused	0	0	1000	10	100	0
61	Air Compressor	0	.007651	81.9	2.871	28.6	-.2188
62	Validyne 2	0	0	1000	10	100	0
63	Validyne 3	0	0	1000	10	100	0
64	Validyne 4	0	0	1000	10	100	0
65	Validyne 5	0	0	1000	10	100	0
66	Validyne 6	0	0	1000	10	100	0

COMMENTS:THRU BY ORIFICE (20.00/28.83) **********

02 ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER Beckman Model 755

TEST# 1

ENGINE 1C

RUN# 2

S/N 1000832

	CYLINDER #	CYLINDER VALUE O2 %	INITIAL ANALYZER RESPONSE O2 %	FINAL ANALYZER RESPONSE O2 %	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	AAL17031	0.00	SCAN TIME 12:18 -.003858	SCAN TIME 13:36 .03002	.033878	
MID-LEVEL GAS	AAL1776	12.00	SCAN TIME 12:36 12.00	SCAN TIME 13:44 11.97	.030	.25 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

NOX ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER TECO model 10

ENGINE 1C

TEST# 1

S/N 10AR-9686-110

RUN# 2

	CYLINDER #	CYLINDER VALUE NOX ppm	INITIAL ANALYZER RESPONSE NOX ppm	FINAL ANALYZER RESPONSE NOX ppm	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	ALM 3315	0.00	SCAN TIME 12:18 -.02998	SCAN TIME 13:36 1.347	1.377	X
MID-LEVEL GAS	ALM11615	125.2	SCAN TIME 12:36 125.2	SCAN TIME 13:44 121.6	3.6	2.9 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

CO ANALYZER
ZERO AND CALIBRATION DATA

STATION 17

DATE 1-31-90

ANALYZER TECO model 48

ENGINE 1C

TEST# 1

S/N 20374-190

RUN# 2

	CYLINDER #	CYLINDER VALUE CO ppm	INITIAL ANALYZER RESPONSE CO ppm	FINAL ANALYZER RESPONSE CO ppm	DIFFERENCE INITIAL - FINAL	% DRIFT
ZERO GAS	SAL-17031	0.00	SCAN TIME 12:18 .02818	SCAN TIME 14:30 .01178 14:41	.0164	X
MID-LEVEL GAS	Label damaged	30.7	SCAN TIME 12:36 30.61	SCAN TIME ~~14:39~~ ~~31.36~~ 30.86	~~.75~~	.81 %

$$\text{Percent difference} = \frac{\text{Absolute difference}}{\text{span value}} * 100$$

Initial zero Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:17:50

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	-.03702	ppm	4	Outlet NOX	-.02998	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.02818	ppm	10	Outlet CO2	.00102	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.5474	ppm
13	Inlet O2	-.00385	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6102	RPM	21	Suction(S.)	448.8	psig
81	LP Speed(Freq.)	5652	RPM	22	Discharge(S.)	643.5	psig
82	EFM(Freq.)-suct	220.4	HZ	61	Air Compressor	57.04	psig
83	EFM(Freq.)-disc	162.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.1	psig	30	Fuel Diff. (R.)	25	InH2O
37	Fuel Temp. (S.)	76.88	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1009	Deg F	4	Sample Filter (K)	232.3	Deg F
5	After Pump (K)	206.7	Deg F	6	Ice Bath (K)	34.05	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	69.91	Deg F
9	Ambient (K)	69.66	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.65	Deg F
19	Discharge(RTD)	114.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1214 **

Initial span Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:36:19

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	124.8	ppm	4	Outlet NOX	125.2	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.61	ppm	10	Outlet CO2	1.991	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	44.65	ppm
13	Inlet O2	12	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6093	RPM	21	Suction(S.)	451.5	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.2	psig
82	EFM(Freq.)-suct	218.3	HZ	61	Air Compressor	56.89	psig
83	EFM(Freq.)-disc	161.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.3	psig	30	Fuel Diff. (R.)	24.59	InH2O
37	Fuel Temp. (S.)	77.18	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1008	Deg F	4	Sample Filter (K)	230.6	Deg F
5	After Pump (K)	241	Deg F	6	Ice Bath (K)	35.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.67	Deg F
9	Ambient (K)	70.65	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.71	Deg F
19	Discharge(RTD)	113.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

Final zero NO_x, O_2 Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:36:44

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	.5692	ppm	4	Outlet NOX	1.347	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.1734	ppm	10	Outlet CO2	1.769	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.637	ppm
13	Inlet O2	.03002	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6172	RPM	21	Suction(S.)	456.5	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.8	psig
82	EFM(Freq.)-suct	230.2	HZ	61	Air Compressor	58.85	psig
83	EFM(Freq.)-disc	173.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.6	psig	30	Fuel Diff. (R.)	25.73	InH2O
37	Fuel Temp. (S.)	76.62	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	234.2	Deg F
5	After Pump (K)	234.7	Deg F	6	Ice Bath (K)	35.45	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.26	Deg F
9	Ambient (K)	71.11	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	578.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.58	Deg F
19	Discharge(RTD)	112.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

Final span NO_x, O_2 Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:44:27

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	124.9	ppm	4	Outlet NOX	121.6	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2679	ppm	10	Outlet CO2	1.784	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.075	ppm
13	Inlet O2	11.97	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6177	RPM	21	Suction(S.)	457.1	psig
81	LP Speed(Freq.)	5615	RPM	22	Discharge(S.)	648.2	psig
82	EFM(Freq.)-suct	231	HZ	61	Air Compressor	59.01	psig
83	EFM(Freq.)-disc	173.6	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.1	psig	30	Fuel Diff. (R.)	26.3	InH20
37	Fuel Temp. (S.)	76.26	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	234.7	Deg F
5	After Pump (K)	232	Deg F	6	Ice Bath (K)	35.04	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.3	Deg F
9	Ambient (K)	71.21	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	579	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.56	Deg F
19	Discharge(RTD)	112.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

Final zero Co
Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 14:30:18

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	59.71	ppm	4	Outlet NOX	67.74	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.01178	ppm	10	Outlet CO2	1.826	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.207	ppm
13	Inlet O2	17.65	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6214	RPM	21	Suction(S.)	459.3	psig
81	LP Speed(Freq.)	5615	RPM	22	Discharge(S.)	651.4	psig
82	EFM(Freq.)-suct	233.1	HZ	61	Air Compressor	59.03	psig
83	EFM(Freq.)-disc	173.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.6	psig	30	Fuel Diff. (R.)	26.74	InH2O
37	Fuel Temp. (S.)	76.13	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1004	Deg F	4	Sample Filter (K)	228.2	Deg F
5	After Pump (K)	241.7	Deg F	6	Ice Bath (K)	37.27	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	72.33	Deg F
9	Ambient (K)	71.77	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	580.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.61	Deg F
19	Discharge(RTD)	112.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE
** Concentrations and Parameters compiled using file C1422 **

Final span CO
Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 14:41:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.12	ppm	4	Outlet NOX	67.89	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	30.86	ppm	10	Outlet CO2	1.831	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.415	ppm
13	Inlet O2	17.64	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6233	RPM	21	Suction(S.)	459.9	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	233.1	HZ	61	Air Compressor	59.17	psig
83	EFM(Freq.)-disc	171.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199	psig	30	Fuel Diff. (R.)	26.61	InH2O
37	Fuel Temp. (S.)	76.39	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1004	Deg F	4	Sample Filter (K)	229.6	Deg F
5	After Pump (K)	228.9	Deg F	6	Ice Bath (K)	37.83	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	73.42	Deg F
9	Ambient (K)	72.45	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	582.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	112.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS .5 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1422 **

TENNECO GAS TRANSPORTATION
TECHNICAL SERVICES DEPARTMENT
MECHANICAL SECTION
5510 South Rice Avenue, Houston, TX 77081 (713) 662-5315

Slopes and Intercepts
Run 2

******SUMMARY OF CALIBRATION VALUES******

31 Jan 1990 STATION #17
13:58:13 ENGINE #1C

#	INSTRUMENT LABEL	ZERO VALUE	ZERO VOLTS	SPAN VALUE	SPAN VOLTS	CAL. SLOPE	Y INTCPT
1	Inlet NO	0	0	502.3	10	50.23	0
2	Outlet NO	0	.02141	124.8	4.98	25.17	-.5389
3	Outlet NO	0	8.571E-7	223.1	1.5E-6	3.47E+8	-297.5
4	Outlet NOX	0	.04118	125.2	5.431	23.23	-.9565
5	Ambient NO	0	0	2.479	10	.2479	0
6	Ambient NOX	0	0	2.508	10	.2508	0
7	Inlet CO	0	0	398	5	79.6	0
8	Inlet CO2	0	0	4.517	5	.9034	0
9	Outlet CO	0	-.02656	30.7	3.017	10.09	.2679
10	Outlet CO2	0	.01076	2	1.024	1.974	-.0212
11	Inlet Total HC	0	0	3537	-5	-707.4	0
12	Outlet Total HC	0	.0527	44.8	2.085	22.05	-1.162
13	Inlet O2	0	.03042	12	2.461	4.938	-.1502
14	Outlet O2	0	-.01718	12	2.423	4.918	.08449
15	Ambient O2	0	0	20.92	5	4.184	0
16	Spare	0	0	10	10	1	0
17	Spare	0	0	10	10	1	0
18	Spare	0	0	10	10	1	0
19	Spare	0	0	10	10	1	0
20	Spare	0	0	10	10	1	0
21	Suction(S.)	0	-.01454	415.1	1.372	299.5	4.355
22	Discharge(S.)	0	.0003653	649.6	2.167	299.9	-.1095
23	Differential (S.)	0	-.02619	94	1.102	83.28	2.181
24	Spare	0	0	1500	5	300	0
25	Spare	0	0	1500	5	300	0
26	Spare	0	0	1500	5	300	0
27	Spare	0	0	1500	5	300	0
28	Spare	0	0	1500	5	300	0
29	Fuel Pressure (R.)	0	.9985	499.8	2.995	250.3	-250
30	Fuel Diff. (R.)	0	.9998	94	4.754	25.04	-25.04
31	Fuel Temp. (R.)	32.46	1	183.3	5	37.71	-5.25
32	Spare	0	1	100	5	25	-25
33	Barocel 1	0	0	100	10	10	0
34	Barocel 2	0	0	100	10	10	0
35	Barocel 3	0	0	100	10	10	0
36	Spare	0	0	100	10	10	0
37	Fuel Temp. (S.)	0	0	10	10	1	0
38	Spare	0	0	10	10	1	0
39	Unused	0	0	1000	10	100	0
40	Unused	0	0	1000	10	100	0
61	Air Compressor	0	.007651	81.9	2.871	28.6	-.2188
62	Validyne 2	0	0	1000	10	100	0
63	Validyne 3	0	0	1000	10	100	0
64	Validyne 4	0	0	1000	10	100	0
65	Validyne 5	0	0	1000	10	100	0
66	Validyne 6	0	0	1000	10	100	0

COMMENTS:THRU BY ORIFICE (20.00/28.83) **********

TENNECO GAS TRANSPORTATION
TECHNICAL SERVICES DEPARTMENT
MECHANICAL SECTION
5510 South Rice Avenue, Houston, TX 77081 (713) 662-5315

Slope and Intercept used for NO_x recalibration (drift)

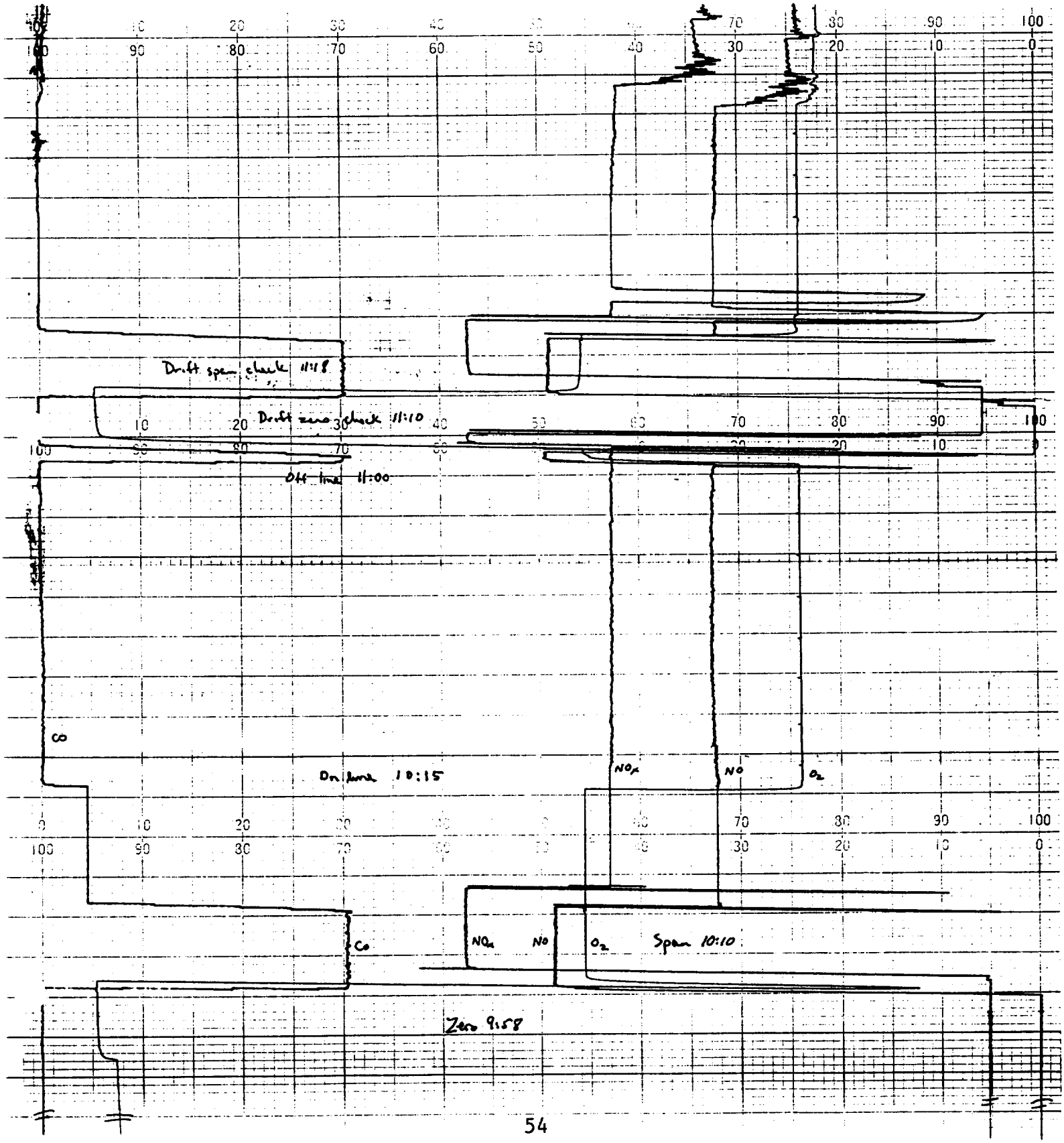
******SUMMARY OF CALIBRATION VALUES******

31 Jan 1990 STATION #17
14:23:09 ENGINE #1C

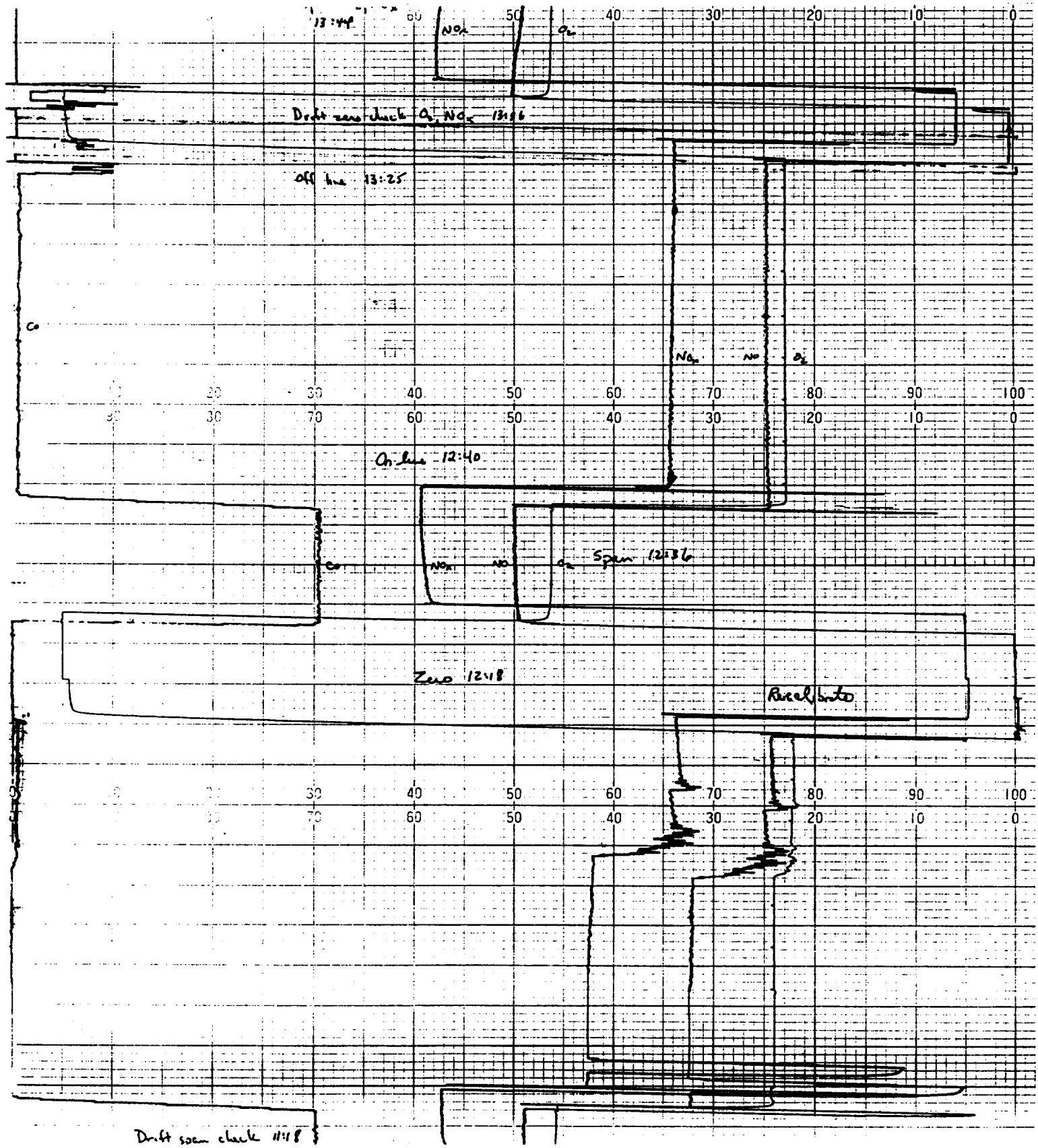
#	INSTRUMENT LABEL	ZERO VALUE	ZERO VOLTS	SPAN VALUE	SPAN VOLTS	CAL. SLOPE	Y INTCPT
1	Inlet NO	0	0	502.3	10	50.23	0
2	Outlet NO	0	.02141	124.8	4.98	25.17	-.5389
3	Outlet NO	0	8.571E-7	223.1	1.5E-6	3.47E+8	-297.5
4	Outlet NOX	0	.05844	125.2	5.251	24.11	-1.409
5	Ambient NO	0	0	2.479	10	.2479	0
6	Ambient NOX	0	0	2.508	10	.2508	0
7	Inlet CO	0	0	398	5	79.6	0
8	Inlet CO2	0	0	4.517	5	.9034	0
9	Outlet CO	0	-.02656	30.7	3.017	10.09	.2679
10	Outlet CO2	0	.01076	2	1.024	1.974	-.0212
11	Inlet Total HC	0	0	3537	-5	-707.4	0
12	Outlet Total HC	0	.0527	44.8	2.085	22.05	-1.162
13	Inlet O2	0	.03042	12	2.461	4.938	-.1502
14	Outlet O2	0	-.01718	12	2.423	4.918	.08449
15	Ambient O2	0	0	20.92	5	4.184	0
16	Spare	0	0	10	10	1	0
17	Spare	0	0	10	10	1	0
18	Spare	0	0	10	10	1	0
19	Spare	0	0	10	10	1	0
20	Spare	0	0	10	10	1	0
21	Suction(S.)	0	-.01454	415.1	1.372	299.5	4.355
22	Discharge(S.)	0	.0003653	649.6	2.167	299.9	-.1095
23	Differential (S.)	0	-.02619	94	1.102	83.28	2.181
24	Spare	0	0	1500	5	300	0
25	Spare	0	0	1500	5	300	0
26	Spare	0	0	1500	5	300	0
27	Spare	0	0	1500	5	300	0
28	Spare	0	0	1500	5	300	0
29	Fuel Pressure (R.)	0	.9985	499.8	2.995	250.3	-250
30	Fuel Diff. (R.)	0	.9998	94	4.754	25.04	-25.04
31	Fuel Temp. (R.)	32.46	1	183.3	5	37.71	-5.25
32	Spare	0	1	100	5	25	-25
33	Barocel 1	0	0	100	10	10	0
34	Barocel 2	0	0	100	10	10	0
35	Barocel 3	0	0	100	10	10	0
36	Spare	0	0	100	10	10	0
37	Fuel Temp. (S.)	0	0	10	10	1	0
38	Spare	0	0	10	10	1	0
39	Unused	0	0	1000	10	100	0
40	Unused	0	0	1000	10	100	0
61	Air Compressor	0	.007651	81.9	2.871	28.6	-.2188
62	Validyne 2	0	0	1000	10	100	0
63	Validyne 3	0	0	1000	10	100	0
64	Validyne 4	0	0	1000	10	100	0
65	Validyne 5	0	0	1000	10	100	0
66	Validyne 6	0	0	1000	10	100	0

APPENDIX B
FIELD DATA

Run 1


Drift span check 11:18
Drift zero check 11:10
Off line 11:00
CO
Drift zero 10:15
NOx
NO
O2
CO
NOx
NO
O2
Span 10:10
Zero 9:58

Run 2


13:44
NO2
O2
Drift zero check O2, NO2 13:16
off line 13:25
CO
NO2
NO
O2
On line 12:40
CO
NO2
NO
O2
Span 12:36
Zero 12:18
Recalibrate
Drift span check 11:18

Mike Vance
666-4964

Tenneco Gas

Include limits + summary

5510 So. Rice Avenue
Houston, Texas 77081
(713) 662-5300

DATE: 1-31-90
STATION: 17
UNIT: 1C

GAS TURBINE CENTRIFUGAL COMPRESSOR DATA SHEET

RUN	1.1	1.2	1.3	2.1	2.2	2.3
TIME	10:15	10:30	10:45	12:40	12:55	1:10
Barometric Pressure (in. Hg.)	29.98	29.96	29.96	29.90	29.90	29.89
Ambient Temperature (° F) wet/dry	68/62	68/62.5	68/63	72/67.5	72/67.5	72/68
Axial Compressor Speed (RPM)						
Pipeline Compressor Speed (RPM)						
Turbine Exhaust Temperature (° F)	995°F	994	996	996	996	997
Axial Compressor Discharge Pressure (psig)						
Suction Gas Pressure (psig)						
Discharge Gas Pressure (psig)						
Suction Gas Temperature (° F)						
Discharge Gas Temperature (° F)						
Fuel Pressure (psig)						
Fuel Temperature (° F)						
Fuel Differential Pressure (in. H2O)						
Fuel Turbine Meter Frequency (Hz)						
Flow Pressure (psig)						
Flow Temperature (° F)						
Flow Differential Pressure (in. H2O)						
Flow Turbine Meter Frequency (Hz)						
Recycle Valve Position (% open)						
Axial Compressor Discharge Temp. (° F)						
Combustor Inlet Temp. - Top (Left) (° F)						
Combustor Inlet Temp. - Bottom (Right) (° F)						
Inlet Air Differential Pressure (in. H2O)						
Regen. Cold-side Diff. - Top (Left) (in. H2O)						
Regen. Cold-side Diff. - Bot. (Right) (in. H2O)						
Reg. Hot-side Diff. (in. H2O) OPTIONAL						
Exhaust Diff. (in. H2O) OPTIONAL						
Exhaust Temperature (° F) OPTIONAL						

Begin Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:15:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.4	ppm	4	Outlet NOX	89.96	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.09965	ppm	10	Outlet CO2	2.067	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.756	ppm
13	Inlet O2	17.28	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6980	RPM	21	Suction(S.)	428.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.6	psig
82	EFM(Freq.)-suct	291.1	HZ	61	Air Compressor	77.59	psig
83	EFM(Freq.)-disc	217.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.2	psig	30	Fuel Diff. (R.)	50.51	InH2O
37	Fuel Temp. (S.)	78.15	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	237	Deg F
5	After Pump (K)	232.1	Deg F	6	Ice Bath (K)	35.5	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.41	Deg F
9	Ambient (K)	64.66	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.91	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:16:32

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.52	ppm	4	Outlet NOX	89.99	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1279	ppm	10	Outlet CO2	2.071	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.431	ppm
13	Inlet O2	17.28	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6986	RPM	21	Suction(S.)	428.2	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	651.6	psig
82	EFM(Freq.)-suct	293.6	HZ	61	Air Compressor	77.67	psig
83	EFM(Freq.)-disc	218.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.4	psig	30	Fuel Diff. (R.)	50.74	InH2O
37	Fuel Temp. (S.)	77.98	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.6	Deg F	4	Sample Filter (K)	238.4	Deg F
5	After Pump (K)	232.8	Deg F	6	Ice Bath (K)	35.47	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.66	Deg F
9	Ambient (K)	64.81	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.92	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:17:45

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.73	ppm	4	Outlet NOX	90.12	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1793	ppm	10	Outlet CO2	2.065	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.949	ppm
13	Inlet O2	17.28	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6988	RPM	21	Suction(S.)	428.3	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.7	psig
82	EFM(Freq.)-suct	292.3	HZ	61	Air Compressor	77.65	psig
83	EFM(Freq.)-disc	218.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.5	psig	30	Fuel Diff. (R.)	50.92	InH2O
37	Fuel Temp. (S.)	77.81	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.4	Deg F	4	Sample Filter (K)	240.3	Deg F
5	After Pump (K)	233.3	Deg F	6	Ice Bath (K)	35.37	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.64	Deg F
9	Ambient (K)	64.83	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.93	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:18:58

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.84	ppm	4	Outlet NOX	89.9	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1791	ppm	10	Outlet CO2	2.07	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.615	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6986	RPM	21	Suction(S.)	428.3	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.5	psig
82	EFM(Freq.)-suct	292.1	HZ	61	Air Compressor	77.7	psig
83	EFM(Freq.)-disc	217.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.5	psig	30	Fuel Diff. (R.)	50.29	InH2O
37	Fuel Temp. (S.)	77.67	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.2	Deg F	4	Sample Filter (K)	241.7	Deg F
5	After Pump (K)	233.9	Deg F	6	Ice Bath (K)	35.31	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.54	Deg F
9	Ambient (K)	64.89	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.93	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:20:10

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.95	ppm	4	Outlet NOX	90	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1818	ppm	10	Outlet CO2	2.071	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.757	ppm
13	Inlet O2	17.28	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6994	RPM	21	Suction(S.)	428.4	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.7	psig
82	EFM(Freq.)-suct	291.8	HZ	61	Air Compressor	77.79	psig
83	EFM(Freq.)-disc	217.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197	psig	30	Fuel Diff. (R.)	51.16	InH2O
37	Fuel Temp. (S.)	77.56	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.8	Deg F	4	Sample Filter (K)	242.7	Deg F
5	After Pump (K)	234.3	Deg F	6	Ice Bath (K)	35.25	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.83	Deg F
9	Ambient (K)	65.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	624	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.94	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:21:23

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.07	ppm	4	Outlet NOX	90.05	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1972	ppm	10	Outlet CO2	2.075	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.664	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7000	RPM	21	Suction(S.)	428.5	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.7	psig
82	EFM(Freq.)-suct	292.3	HZ	61	Air Compressor	77.92	psig
83	EFM(Freq.)-disc	220.1	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.4	psig	30	Fuel Diff. (R.)	51.51	InH2O
37	Fuel Temp. (S.)	77.46	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	243.9	Deg F
5	After Pump (K)	234.6	Deg F	6	Ice Bath (K)	35.13	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	64.96	Deg F
9	Ambient (K)	65.17	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	623.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.95	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:22:35

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.05	ppm	4	Outlet NOX	90.04	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2153	ppm	10	Outlet CO2	2.081	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.618	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7003	RPM	21	Suction(S.)	428.6	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	651.7	psig
82	EFM(Freq.)-suct	294.3	HZ	61	Air Compressor	77.86	psig
83	EFM(Freq.)-disc	219.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.5	psig	30	Fuel Diff. (R.)	51.12	InH2O
37	Fuel Temp. (S.)	77.4	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.1	Deg F	4	Sample Filter (K)	245.1	Deg F
5	After Pump (K)	234.7	Deg F	6	Ice Bath (K)	34.99	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.09	Deg F
9	Ambient (K)	65.19	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	624.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.96	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:23:48

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.18	ppm	4	Outlet NOX	90.01	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1814	ppm	10	Outlet CO2	2.092	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.319	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7012	RPM	21	Suction(S.)	428.8	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.8	psig
82	EFM(Freq.)-suct	294.3	HZ	61	Air Compressor	78.03	psig
83	EFM(Freq.)-disc	217.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.3	psig	30	Fuel Diff. (R.)	51.2	InH2O
37	Fuel Temp. (S.)	77.39	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.2	Deg F	4	Sample Filter (K)	245.9	Deg F
5	After Pump (K)	234.7	Deg F	6	Ice Bath (K)	35.03	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.48	Deg F
9	Ambient (K)	65.46	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	624.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.96	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:25:00

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.1	ppm	4	Outlet NOX	89.93	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2333	ppm	10	Outlet CO2	2.085	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.847	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7009	RPM	21	Suction(S.)	428.8	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.8	psig
82	EFM(Freq.)-suct	293.6	HZ	61	Air Compressor	77.99	psig
83	EFM(Freq.)-disc	219.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.5	psig	30	Fuel Diff. (R.)	50.64	InH2O
37	Fuel Temp. (S.)	77.42	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.2	Deg F	4	Sample Filter (K)	246.9	Deg F
5	After Pump (K)	234.7	Deg F	6	Ice Bath (K)	35.03	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.47	Deg F
9	Ambient (K)	65.54	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	624.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.97	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:26:13

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.12	ppm	4	Outlet NOX	89.88	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2486	ppm	10	Outlet CO2	2.076	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.742	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7011	RPM	21	Suction(S.)	428.8	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.8	psig
82	EFM(Freq.)-suct	293.8	HZ	61	Air Compressor	78.04	psig
83	EFM(Freq.)-disc	216.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198	psig	30	Fuel Diff. (R.)	50.67	InH2O
37	Fuel Temp. (S.)	77.48	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.1	Deg F	4	Sample Filter (K)	247.7	Deg F
5	After Pump (K)	234.9	Deg F	6	Ice Bath (K)	34.96	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.39	Deg F
9	Ambient (K)	65.52	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	625.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.98	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:27:25

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.3	ppm	4	Outlet NOX	89.89	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2697	ppm	10	Outlet CO2	2.081	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.091	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7014	RPM	21	Suction(S.)	428.9	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	651.9	psig
82	EFM(Freq.)-suct	294.4	HZ	61	Air Compressor	78.03	psig
83	EFM(Freq.)-disc	217.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.9	psig	30	Fuel Diff. (R.)	51.28	InH2O
37	Fuel Temp. (S.)	77.53	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	248.6	Deg F
5	After Pump (K)	235	Deg F	6	Ice Bath (K)	34.84	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.46	Deg F
9	Ambient (K)	65.55	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	625.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.99	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:28:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.28	ppm	4	Outlet NOX	89.84	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2513	ppm	10	Outlet CO2	2.082	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.416	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7017	RPM	21	Suction(S.)	428.8	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	294.7	HZ	61	Air Compressor	78.05	psig
83	EFM(Freq.)-disc	217.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.8	psig	30	Fuel Diff. (R.)	51.24	InH2O
37	Fuel Temp. (S.)	77.62	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.4	Deg F	4	Sample Filter (K)	249.4	Deg F
5	After Pump (K)	235.3	Deg F	6	Ice Bath (K)	34.83	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	65.59	Deg F
9	Ambient (K)	65.68	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	625.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	57.99	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:29:51

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.54	ppm	4	Outlet NOX	90.04	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2638	ppm	10	Outlet CO2	2.081	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.83	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7031	RPM	21	Suction(S.)	428.9	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	293.6	HZ	61	Air Compressor	78.15	psig
83	EFM(Freq.)-disc	217.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.7	psig	30	Fuel Diff. (R.)	51.56	InH2O
37	Fuel Temp. (S.)	77.72	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.7	Deg F	4	Sample Filter (K)	250.5	Deg F
5	After Pump (K)	235.5	Deg F	6	Ice Bath (K)	34.72	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.03	Deg F
9	Ambient (K)	66	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	625.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.01	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:31:03

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.48	ppm	4	Outlet NOX	89.84	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.3002	ppm	10	Outlet CO2	2.068	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.303	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7037	RPM	21	Suction(S.)	429.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	293.8	HZ	61	Air Compressor	78.32	psig
83	EFM(Freq.)-disc	218.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.9	psig	30	Fuel Diff. (R.)	51.21	InH2O
37	Fuel Temp. (S.)	77.85	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.3	Deg F	4	Sample Filter (K)	251.1	Deg F
5	After Pump (K)	235.7	Deg F	6	Ice Bath (K)	34.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.31	Deg F
9	Ambient (K)	66.26	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	626.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.03	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:32:16

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.53	ppm	4	Outlet NOX	89.69	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2143	ppm	10	Outlet CO2	2.077	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.026	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7033	RPM	21	Suction(S.)	429.1	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	295	HZ	61	Air Compressor	78.26	psig
83	EFM(Freq.)-disc	216.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.1	psig	30	Fuel Diff. (R.)	50.87	InH2O
37	Fuel Temp. (S.)	77.96	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.8	Deg F	4	Sample Filter (K)	251.7	Deg F
5	After Pump (K)	235.8	Deg F	6	Ice Bath (K)	34.68	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.29	Deg F
9	Ambient (K)	66.3	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	626.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.04	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:33:29

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.62	ppm	4	Outlet NOX	89.87	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.2661	ppm	10	Outlet CO2	2.084	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.492	ppm
13	Inlet O2	17.27	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7040	RPM	21	Suction(S.)	429.3	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	294	HZ	61	Air Compressor	78.35	psig
83	EFM(Freq.)-disc	219.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.7	psig	30	Fuel Diff. (R.)	51.77	InH2O
37	Fuel Temp. (S.)	78.01	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.2	Deg F	4	Sample Filter (K)	252.1	Deg F
5	After Pump (K)	236	Deg F	6	Ice Bath (K)	34.68	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.59	Deg F
9	Ambient (K)	66.5	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	626.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.06	Deg F
19	Discharge(RTD)	122.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:34:42

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.67	ppm	4	Outlet NOX	89.87	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1956	ppm	10	Outlet CO2	2.088	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.723	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7047	RPM	21	Suction(S.)	429.3	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	293.5	HZ	61	Air Compressor	78.45	psig
83	EFM(Freq.)-disc	219.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197	psig	30	Fuel Diff. (R.)	51.58	InH2O
37	Fuel Temp. (S.)	78.02	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.9	Deg F	4	Sample Filter (K)	251.8	Deg F
5	After Pump (K)	236.2	Deg F	6	Ice Bath (K)	34.65	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.55	Deg F
9	Ambient (K)	66.52	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.08	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:35:54

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.52	ppm	4	Outlet NOX	89.81	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1801	ppm	10	Outlet CO2	2.073	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.184	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7049	RPM	21	Suction(S.)	429.4	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	295	HZ	61	Air Compressor	78.4	psig
83	EFM(Freq.)-disc	218.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.5	psig	30	Fuel Diff. (R.)	51.74	InH2O
37	Fuel Temp. (S.)	77.98	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	250.9	Deg F
5	After Pump (K)	236.4	Deg F	6	Ice Bath (K)	34.59	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.4	Deg F
9	Ambient (K)	66.36	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.09	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:37:07

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.34	ppm	4	Outlet NOX	89.76	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1433	ppm	10	Outlet CO2	2.056	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.893	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7048	RPM	21	Suction(S.)	429.4	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	295.3	HZ	61	Air Compressor	78.39	psig
83	EFM(Freq.)-disc	220.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.8	psig	30	Fuel Diff. (R.)	51.3	InH2O
37	Fuel Temp. (S.)	77.91	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.7	Deg F	4	Sample Filter (K)	249.8	Deg F
5	After Pump (K)	236.4	Deg F	6	Ice Bath (K)	34.58	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.4	Deg F
9	Ambient (K)	66.44	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.09	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:38:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.47	ppm	4	Outlet NOX	89.82	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1798	ppm	10	Outlet CO2	2.053	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.378	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7053	RPM	21	Suction(S.)	429.5	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652	psig
82	EFM(Freq.)-suct	295.2	HZ	61	Air Compressor	78.51	psig
83	EFM(Freq.)-disc	220.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.4	psig	30	Fuel Diff. (R.)	51.43	InH2O
37	Fuel Temp. (S.)	77.78	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	996.1	Deg F	4	Sample Filter (K)	248.7	Deg F
5	After Pump (K)	236.6	Deg F	6	Ice Bath (K)	34.46	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.56	Deg F
9	Ambient (K)	66.5	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	627.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.1	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:39:32

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.52	ppm	4	Outlet NOX	89.86	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.06362	ppm	10	Outlet CO2	2.061	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.833	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7061	RPM	21	Suction(S.)	429.6	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	293.6	HZ	61	Air Compressor	78.62	psig
83	EFM(Freq.)-disc	217.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.9	psig	30	Fuel Diff. (R.)	51.92	InH2O
37	Fuel Temp. (S.)	77.62	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	247.2	Deg F
5	After Pump (K)	237.4	Deg F	6	Ice Bath (K)	34.58	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.63	Deg F
9	Ambient (K)	66.57	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	628.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.11	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:40:45

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.46	ppm	4	Outlet NOX	89.95	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.1429	ppm	10	Outlet CO2	2.061	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.787	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7064	RPM	21	Suction(S.)	429.6	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	295.3	HZ	61	Air Compressor	78.67	psig
83	EFM(Freq.)-disc	219.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.5	psig	30	Fuel Diff. (R.)	51.75	InH2O
37	Fuel Temp. (S.)	77.49	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	245.4	Deg F
5	After Pump (K)	239.7	Deg F	6	Ice Bath (K)	34.59	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.68	Deg F
9	Ambient (K)	66.54	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	628.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.11	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:41:57

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.28	ppm	4	Outlet NOX	89.62	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.03001	ppm	10	Outlet CO2	2.063	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.246	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7064	RPM	21	Suction(S.)	429.7	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.2	psig
82	EFM(Freq.)-suct	296.4	HZ	61	Air Compressor	78.65	psig
83	EFM(Freq.)-disc	220.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.5	psig	30	Fuel Diff. (R.)	52.07	InH2O
37	Fuel Temp. (S.)	77.36	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.8	Deg F	4	Sample Filter (K)	243.9	Deg F
5	After Pump (K)	242.4	Deg F	6	Ice Bath (K)	34.52	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.88	Deg F
9	Ambient (K)	66.74	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	628.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.12	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:43:10

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.19	ppm	4	Outlet NOX	89.67	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.04292	ppm	10	Outlet CO2	2.062	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.317	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7070	RPM	21	Suction(S.)	429.8	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	295.8	HZ	61	Air Compressor	78.76	psig
83	EFM(Freq.)-disc	219.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.4	psig	30	Fuel Diff. (R.)	51.83	InH2O
37	Fuel Temp. (S.)	77.25	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.8	Deg F	4	Sample Filter (K)	242.5	Deg F
5	After Pump (K)	245	Deg F	6	Ice Bath (K)	34.63	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.1	Deg F
9	Ambient (K)	67.04	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	628.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.12	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:44:22

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.31	ppm	4	Outlet NOX	89.71	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.00343	ppm	10	Outlet CO2	2.06	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.334	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7072	RPM	21	Suction(S.)	430	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	295.8	HZ	61	Air Compressor	78.85	psig
83	EFM(Freq.)-disc	219.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.7	psig	30	Fuel Diff. (R.)	51.91	InH2O
37	Fuel Temp. (S.)	77.19	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.4	Deg F	4	Sample Filter (K)	240.9	Deg F
5	After Pump (K)	247.3	Deg F	6	Ice Bath (K)	34.76	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.15	Deg F
9	Ambient (K)	67.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.13	Deg F
19	Discharge(RTD)	122.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:45:35

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.28	ppm	4	Outlet NOX	89.67	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.01181	ppm	10	Outlet CO2	2.058	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.175	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7068	RPM	21	Suction(S.)	429.8	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652.2	psig
82	EFM(Freq.)-suct	295.4	HZ	61	Air Compressor	78.71	psig
83	EFM(Freq.)-disc	221.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.9	psig	30	Fuel Diff. (R.)	52	InH2O
37	Fuel Temp. (S.)	77.16	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.4	Deg F	4	Sample Filter (K)	239	Deg F
5	After Pump (K)	249.5	Deg F	6	Ice Bath (K)	34.84	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.99	Deg F
9	Ambient (K)	66.82	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.14	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:46:47

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.37	ppm	4	Outlet NOX	89.82	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.05483	ppm	10	Outlet CO2	2.06	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.332	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7068	RPM	21	Suction(S.)	429.7	psig
81	LP Speed(Freq.)	6369	RPM	22	Discharge(S.)	652.1	psig
82	EFM(Freq.)-suct	295	HZ	61	Air Compressor	78.74	psig
83	EFM(Freq.)-disc	220.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.6	psig	30	Fuel Diff. (R.)	51.87	InH2O
37	Fuel Temp. (S.)	77.16	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.4	Deg F	4	Sample Filter (K)	236.9	Deg F
5	After Pump (K)	251.5	Deg F	6	Ice Bath (K)	34.93	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.81	Deg F
9	Ambient (K)	66.72	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.14	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:48:00

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.35	ppm	4	Outlet NOX	89.78	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.00621	ppm	10	Outlet CO2	2.055	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.379	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7068	RPM	21	Suction(S.)	429.7	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.2	psig
82	EFM(Freq.)-suct	294.5	HZ	61	Air Compressor	78.79	psig
83	EFM(Freq.)-disc	219.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.9	psig	30	Fuel Diff. (R.)	51.93	InH2O
37	Fuel Temp. (S.)	77.18	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.5	Deg F	4	Sample Filter (K)	234.5	Deg F
5	After Pump (K)	253.2	Deg F	6	Ice Bath (K)	35.1	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	66.93	Deg F
9	Ambient (K)	66.94	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.15	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:49:13

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.42	ppm	4	Outlet NOX	89.84	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.05744	ppm	10	Outlet CO2	2.058	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.012	ppm
13	Inlet O2	17.24	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7073	RPM	21	Suction(S.)	429.9	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.4	psig
82	EFM(Freq.)-suct	295.7	HZ	61	Air Compressor	78.76	psig
83	EFM(Freq.)-disc	218.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.6	psig	30	Fuel Diff. (R.)	52.04	InH2O
37	Fuel Temp. (S.)	77.24	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.9	Deg F	4	Sample Filter (K)	233.1	Deg F
5	After Pump (K)	254.7	Deg F	6	Ice Bath (K)	35.17	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.38	Deg F
9	Ambient (K)	67.26	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.16	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:50:25

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.49	ppm	4	Outlet NOX	89.9	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.05757	ppm	10	Outlet CO2	2.06	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.845	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7082	RPM	21	Suction(S.)	430.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	295.8	HZ	61	Air Compressor	78.96	psig
83	EFM(Freq.)-disc	219.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197	psig	30	Fuel Diff. (R.)	52.03	InH2O
37	Fuel Temp. (S.)	77.32	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.7	Deg F	4	Sample Filter (K)	231.7	Deg F
5	After Pump (K)	256.2	Deg F	6	Ice Bath (K)	35.36	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.47	Deg F
9	Ambient (K)	67.46	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.17	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:51:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.56	ppm	4	Outlet NOX	89.59	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.03745	ppm	10	Outlet CO2	2.054	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.962	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7074	RPM	21	Suction(S.)	430.2	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.5	psig
82	EFM(Freq.)-suct	295.8	HZ	61	Air Compressor	78.85	psig
83	EFM(Freq.)-disc	218.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.3	psig	30	Fuel Diff. (R.)	52.07	InH2O
37	Fuel Temp. (S.)	77.42	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.4	Deg F	4	Sample Filter (K)	230.1	Deg F
5	After Pump (K)	257.5	Deg F	6	Ice Bath (K)	35.49	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.38	Deg F
9	Ambient (K)	67.46	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	629.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.18	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:52:51

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.36	ppm	4	Outlet NOX	89.82	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.03996	ppm	10	Outlet CO2	2.061	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.506	ppm
13	Inlet O2	17.26	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7079	RPM	21	Suction(S.)	430.2	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	295.3	HZ	61	Air Compressor	78.87	psig
83	EFM(Freq.)-disc	219.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197	psig	30	Fuel Diff. (R.)	52.37	InH2O
37	Fuel Temp. (S.)	77.52	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.7	Deg F	4	Sample Filter (K)	229	Deg F
5	After Pump (K)	257.9	Deg F	6	Ice Bath (K)	35.64	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.36	Deg F
9	Ambient (K)	67.44	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.19	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:54:04

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.37	ppm	4	Outlet NOX	89.75	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.03765	ppm	10	Outlet CO2	2.065	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.128	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7082	RPM	21	Suction(S.)	430.2	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.5	psig
82	EFM(Freq.)-suct	296.2	HZ	61	Air Compressor	78.89	psig
83	EFM(Freq.)-disc	220.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.8	psig	30	Fuel Diff. (R.)	52.09	InH2O
37	Fuel Temp. (S.)	77.64	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.5	Deg F	4	Sample Filter (K)	227.5	Deg F
5	After Pump (K)	257.2	Deg F	6	Ice Bath (K)	35.81	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.39	Deg F
9	Ambient (K)	67.36	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.19	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:55:16

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.25	ppm	4	Outlet NOX	89.78	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.07099	ppm	10	Outlet CO2	2.069	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.637	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7088	RPM	21	Suction(S.)	430.1	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.3	psig
82	EFM(Freq.)-suct	295.7	HZ	61	Air Compressor	78.93	psig
83	EFM(Freq.)-disc	218.9	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.8	psig	30	Fuel Diff. (R.)	51.79	InH20
37	Fuel Temp. (S.)	77.74	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.6	Deg F	4	Sample Filter (K)	226.2	Deg F
5	After Pump (K)	256.3	Deg F	6	Ice Bath (K)	36.04	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.33	Deg F
9	Ambient (K)	67.17	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.19	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:56:29

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.3	ppm	4	Outlet NOX	89.83	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.07987	ppm	10	Outlet CO2	2.073	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.987	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7091	RPM	21	Suction(S.)	430.2	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.5	psig
82	EFM(Freq.)-suct	297.3	HZ	61	Air Compressor	79.03	psig
83	EFM(Freq.)-disc	221.1	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.7	psig	30	Fuel Diff. (R.)	51.99	InH2O
37	Fuel Temp. (S.)	77.79	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.5	Deg F	4	Sample Filter (K)	224.7	Deg F
5	After Pump (K)	254.5	Deg F	6	Ice Bath (K)	36.23	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.5	Deg F
9	Ambient (K)	67.19	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.18	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:57:42

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	84.24	ppm	4	Outlet NOX	89.86	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.04651	ppm	10	Outlet CO2	2.075	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.838	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7102	RPM	21	Suction(S.)	430.3	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.5	psig
82	EFM(Freq.)-suct	296.4	HZ	61	Air Compressor	79.14	psig
83	EFM(Freq.)-disc	221.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	196.8	psig	30	Fuel Diff. (R.)	52.41	InH2O
37	Fuel Temp. (S.)	77.78	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	995.4	Deg F	4	Sample Filter (K)	223.5	Deg F
5	After Pump (K)	252.5	Deg F	6	Ice Bath (K)	36.38	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.74	Deg F
9	Ambient (K)	67.39	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.17	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

End Run 1

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 10:58:54

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	83.91	ppm	4	Outlet NOX	89.33	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	-.05827	ppm	10	Outlet CO2	2.073	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.442	ppm
13	Inlet O2	17.25	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	7098	RPM	21	Suction(S.)	430.4	psig
81	LP Speed(Freq.)	6370	RPM	22	Discharge(S.)	652.5	psig
82	EFM(Freq.)-suct	295.4	HZ	61	Air Compressor	79.14	psig
83	EFM(Freq.)-disc	219.9	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.9	psig	30	Fuel Diff. (R.)	52.17	InH20
37	Fuel Temp. (S.)	77.75	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	994.7	Deg F	4	Sample Filter (K)	222.6	Deg F
5	After Pump (K)	250.5	Deg F	6	Ice Bath (K)	36.62	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	67.61	Deg F
9	Ambient (K)	67.32	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	630.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.16	Deg F
19	Discharge(RTD)	122.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1008 **

Begin Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:41:00

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.07	ppm	4	Outlet NOX	67.32	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5729	ppm	10	Outlet CO2	1.779	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.296	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6113	RPM	21	Suction(S.)	452	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.4	psig
82	EFM(Freq.)-suct	221.4	HZ	61	Air Compressor	57.24	psig
83	EFM(Freq.)-disc	165.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.2	psig	30	Fuel Diff. (R.)	24.58	InH2O
37	Fuel Temp. (S.)	77.06	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.7	Deg F
5	After Pump (K)	243.7	Deg F	6	Ice Bath (K)	36.71	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.25	Deg F
9	Ambient (K)	70.92	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.75	Deg F
19	Discharge(RTD)	113.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:42:12

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.17	ppm	4	Outlet NOX	67.25	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5757	ppm	10	Outlet CO2	1.776	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.625	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6114	RPM	21	Suction(S.)	452.1	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.5	psig
82	EFM(Freq.)-suct	219.9	HZ	61	Air Compressor	57.32	psig
83	EFM(Freq.)-disc	163.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199	psig	30	Fuel Diff. (R.)	24.6	InH2O
37	Fuel Temp. (S.)	77.08	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.9	Deg F
5	After Pump (K)	244.3	Deg F	6	Ice Bath (K)	36.93	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.27	Deg F
9	Ambient (K)	70.93	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.75	Deg F
19	Discharge(RTD)	113.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:43:25

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.23	ppm	4	Outlet NOX	67.22	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5231	ppm	10	Outlet CO2	1.771	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.711	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6117	RPM	21	Suction(S.)	452.2	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.5	psig
82	EFM(Freq.)-suct	220.6	HZ	61	Air Compressor	57.37	psig
83	EFM(Freq.)-disc	166.1	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.3	psig	30	Fuel Diff. (R.)	24.75	InH2O
37	Fuel Temp. (S.)	77.12	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	230	Deg F
5	After Pump (K)	244.8	Deg F	6	Ice Bath (K)	37.27	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.16	Deg F
9	Ambient (K)	71.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.74	Deg F
19	Discharge(RTD)	113.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:44:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.43	ppm	4	Outlet NOX	67.34	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5225	ppm	10	Outlet CO2	1.769	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.525	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6118	RPM	21	Suction(S.)	452.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.7	psig
82	EFM(Freq.)-suct	220.8	HZ	61	Air Compressor	57.45	psig
83	EFM(Freq.)-disc	164.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.7	psig	30	Fuel Diff. (R.)	24.78	InH2O
37	Fuel Temp. (S.)	77.16	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	230	Deg F
5	After Pump (K)	245.3	Deg F	6	Ice Bath (K)	37.47	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.15	Deg F
9	Ambient (K)	71.08	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.74	Deg F
19	Discharge(RTD)	113.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:45:50

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.29	ppm	4	Outlet NOX	67.32	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.4873	ppm	10	Outlet CO2	1.765	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.479	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6115	RPM	21	Suction(S.)	452.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.7	psig
82	EFM(Freq.)-suct	222.5	HZ	61	Air Compressor	57.47	psig
83	EFM(Freq.)-disc	165.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.8	psig	30	Fuel Diff. (R.)	24.73	InH2O
37	Fuel Temp. (S.)	77.22	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	230	Deg F
5	After Pump (K)	245.8	Deg F	6	Ice Bath (K)	37.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.78	Deg F
9	Ambient (K)	70.83	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.74	Deg F
19	Discharge(RTD)	113.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:47:03

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.33	ppm	4	Outlet NOX	67.33	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5547	ppm	10	Outlet CO2	1.765	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.247	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6118	RPM	21	Suction(S.)	452.5	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.7	psig
82	EFM(Freq.)-suct	222.3	HZ	61	Air Compressor	57.46	psig
83	EFM(Freq.)-disc	167.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.2	psig	30	Fuel Diff. (R.)	24.69	InH2O
37	Fuel Temp. (S.)	77.32	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.8	Deg F
5	After Pump (K)	245.6	Deg F	6	Ice Bath (K)	38.06	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.84	Deg F
9	Ambient (K)	70.68	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.73	Deg F
19	Discharge(RTD)	113.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:48:15

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.34	ppm	4	Outlet NOX	67.29	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.585	ppm	10	Outlet CO2	1.761	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.238	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6119	RPM	21	Suction(S.)	452.6	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.8	psig
82	EFM(Freq.)-suct	222.8	HZ	61	Air Compressor	57.56	psig
83	EFM(Freq.)-disc	166	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.4	psig	30	Fuel Diff. (R.)	24.87	InH2O
37	Fuel Temp. (S.)	77.4	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.5	Deg F
5	After Pump (K)	243.9	Deg F	6	Ice Bath (K)	38.25	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.79	Deg F
9	Ambient (K)	70.62	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.73	Deg F
19	Discharge(RTD)	113.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:49:27

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.27	ppm	4	Outlet NOX	67.1	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5536	ppm	10	Outlet CO2	1.755	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.6578	ppm
13	Inlet O2	17.7	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6126	RPM	21	Suction(S.)	452.7	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	644.9	psig
82	EFM(Freq.)-suct	225.1	HZ	61	Air Compressor	57.63	psig
83	EFM(Freq.)-disc	166.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.1	psig	30	Fuel Diff. (R.)	25.05	InH2O
37	Fuel Temp. (S.)	77.47	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.2	Deg F
5	After Pump (K)	241.9	Deg F	6	Ice Bath (K)	38.57	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71	Deg F
9	Ambient (K)	70.81	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.72	Deg F
19	Discharge(RTD)	113.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:50:40

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.41	ppm	4	Outlet NOX	67.18	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6713	ppm	10	Outlet CO2	1.756	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.873	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6128	RPM	21	Suction(S.)	452.9	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645	psig
82	EFM(Freq.)-suct	224.4	HZ	61	Air Compressor	57.66	psig
83	EFM(Freq.)-disc	167.2	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.7	psig	30	Fuel Diff. (R.)	24.94	InH2O
37	Fuel Temp. (S.)	77.51	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.7	Deg F
5	After Pump (K)	239.4	Deg F	6	Ice Bath (K)	38.45	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.26	Deg F
9	Ambient (K)	71.06	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.71	Deg F
19	Discharge(RTD)	113.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

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WORTHINGTON UTC-168T

ENGINE TEST 1 TEST SITE 17 EXHAUST STACK AREA SQ. FT. 2.074
WORTHINGTON UTC-168T RATED 1850. HP, RATED 300. RPM

LBS/HR IN EXHAUST

TOTAL WATER	1918.44
NITROGEN	22213.48
NOX AS NO2	47.77
CO2	1899.64
HC	34.21
CO	42.14
OXYGEN AS O2	3847.64

OXYGEN BALANCE DATA

EXHAUST OXYGEN	6977.80
INTAKE OXYGEN	7022.03
(EXH-INT)/EXH PCT	-.63
O2COR PCT	12.62

NOTE: UNBALANCE CAN BE DUE TO EITHER O2 OR CO2 VALUE
GENERALLY (EXH-INT)/EXH PCT IS ACCEPTABLE TO +/- 2.

FUEL GAS ANALYSIS

HIGHER HEATING VALUE BTU/SCF	1027.
LOWER HEATING VALUE BTU/SCF	926.
SPECIFIC GRAVITY (60 AND 29.92)	.5771
MOLECULAR WEIGHT	16.69

COMPOSITION (MOLE PERCENT)

CH4	96.27
C2H6	2.64
C3H8	.08
C4H10	.06
C5H12	.00
C6H14	.00
H2	.00
HE	.00
CO2	.71
N2	.24

	100.00

WORTHINGTON UTC-168T

ENGINE TEST 1 TEST SITE 17 EXHAUST STACK AREA SQ. FT. 2.074
WORTHINGTON UTC-168T RATED 1850. HP, RATED 300. RPM
HYDROGEN/CARBON RATIO- 3.91

RUN	1
DATE	5/ 4/81
TIME	2056

OPERATIONAL DATA

BAROMETER IN. HG	29.81
AMBIENT TEMP. DEG. F	68.
INLET MAN. TEMP DEG. F	116.
EXHAUST VEL. FT/SEC	119.75
SP. HUMIDITY GRAIN/LB	86.
ENGINE SPEED RPM	300.
HORSEPOWER	1856.
SCAV. AIR PRES. IN.HG.	11.2
IGNIT. TIME DEG. BTDC	10.0
FUEL SP. GR. (STP)	.5771
HI HEAT VALUE BTU/SCF	1027.
LO HEAT VALUE BTU/SCF	926.
CALC. EXH. FLOW LB/HR	30003.
EXHAUST SP. GR. (STP)	.9741
EXHAUST TEMP. DEG. F	718.
FUEL FLOW SCFH	17111.
FUEL MIL. BTU/HR (HHV)	17.573
FUEL FLOW LB/HR	755.
AIR FLOW LB/HR (WET)	29248.
AIR/FUEL RATIO (WET)	38.7
BSFC BTU/HP HR (HHV)	9468.

EMISSIONS AS MEASURED

NOX PPM	1077.72
NO PPM	784.94
NO2 PPM	292.78
CO2 PERCENT	4.48
HC PPM	2221.30
CO PPM	1642.38
O2 PERCENT	12.48
NO/NOX	.728
NON-METH HC PPM	.037

CALCULATED EMISSIONS

NOX LB/HR	47.771
HC LB/HR TOTAL	34.207
HC LB/HR NON-METH	1.276
CO LB/HR	42.137
NOX G/SEC	6.019
HC G/SEC	4.310
HC G/SEC NON-METH	.161
CO G/SEC	5.309
NOX G/BHP HR	11.675
HC G/BHP HR TOTAL	8.360
HC G/BHP HR NON-METH	.312
CO G/BHP HR	10.298
NOX PPM CORR TO 15 PCT O2	755.

NOTE: NO AS NO2 AND BTU AS HHV FOR CALCULATED EMISSIONS.
NOTE: A NEGATIVE VALUE INDICATES METHANE FRACTION NOT INPUT

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:51:52

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.46	ppm	4	Outlet NOX	67.06	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.548	ppm	10	Outlet CO2	1.748	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.989	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6124	RPM	21	Suction(S.)	453	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645	psig
82	EFM(Freq.)-suct	224.1	HZ	61	Air Compressor	57.66	psig
83	EFM(Freq.)-disc	166.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.3	psig	30	Fuel Diff. (R.)	24.91	InH2O
37	Fuel Temp. (S.)	77.53	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.6	Deg F
5	After Pump (K)	235.6	Deg F	6	Ice Bath (K)	38.56	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.94	Deg F
9	Ambient (K)	70.82	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.71	Deg F
19	Discharge(RTD)	113.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:53:05

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.79	ppm	4	Outlet NOX	67.11	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5499	ppm	10	Outlet CO2	1.749	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.888	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6127	RPM	21	Suction(S.)	453.1	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.2	psig
82	EFM(Freq.)-suct	223.4	HZ	61	Air Compressor	57.7	psig
83	EFM(Freq.)-disc	166.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.4	psig	30	Fuel Diff. (R.)	24.9	InH2O
37	Fuel Temp. (S.)	77.53	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.7	Deg F
5	After Pump (K)	231.6	Deg F	6	Ice Bath (K)	38.54	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.79	Deg F
9	Ambient (K)	70.79	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.7	Deg F
19	Discharge(RTD)	113.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:54:17

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.55	ppm	4	Outlet NOX	67.02	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5673	ppm	10	Outlet CO2	1.748	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.296	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6127	RPM	21	Suction(S.)	453.2	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.3	psig
82	EFM(Freq.)-suct	224.4	HZ	61	Air Compressor	57.73	psig
83	EFM(Freq.)-disc	168.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.4	psig	30	Fuel Diff. (R.)	25.02	InH2O
37	Fuel Temp. (S.)	77.49	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.4	Deg F
5	After Pump (K)	227.8	Deg F	6	Ice Bath (K)	38.5	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.86	Deg F
9	Ambient (K)	70.84	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.7	Deg F
19	Discharge(RTD)	113.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:55:30

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.56	ppm	4	Outlet NOX	67.04	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5668	ppm	10	Outlet CO2	1.745	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.958	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6130	RPM	21	Suction(S.)	453.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.3	psig
82	EFM(Freq.)-suct	223.1	HZ	61	Air Compressor	57.78	psig
83	EFM(Freq.)-disc	167.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199	psig	30	Fuel Diff. (R.)	25.12	InH2O
37	Fuel Temp. (S.)	77.41	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.4	Deg F
5	After Pump (K)	224.5	Deg F	6	Ice Bath (K)	38.51	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.84	Deg F
9	Ambient (K)	70.82	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.7	Deg F
19	Discharge(RTD)	113.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

```
ENTER TEST NO,   STATION NO,   NUMBER OF CASES
          1          17              1

ENTER MANUFACTURE-MODEL
[redacted]

ENTER RATED HP,  RATED SPEED,  EXHAUST DIA(IN)
 1850.00  300.00   19.50

ENTER  HIGH HEAT VALUE,  LOW HEAT VALUE,  SPECIFIC GRAVITY
 1027.0  926.0  .5771

ENTER PERCENTAGES OF - CH4,C2H6,C3H8,C4H10,C5H12,C6H14,H2,HE,CO2,N2
 96.27  2.64   .03   .06   .00   .00   .00   .00   .71   .24

        - - - - - - - - - - - -

*** OPERATION DATA FOR CASE 1 ***
ENTER FUEL (CUFT/MIN), DRY BULB (F), WET BULB (F)
  285.13   68.35   64.73
ENTER RPM, HP, TIMING, SCAV AIR PRES, BARO PRES (IN HG), EX TEMP (F)
  299.70 1856.00   10.00   11.16   29.81  718.18
ENTER MONTH, DAY, YEAR, TIME(24 HR)
    5    4   81 2056

*** EMISSIONS DATA FOR CASE 1 ***
ENTER EMISSIONS IN PPM FOR NO, NOX, HC, CO
  784.94 1077.72 2221.30 1642.38
ENTER EMISSIONS IN PERCENT FOR CO2, O2
    4.48   12.48
ENTER INLET MANIFOLD TEMP(F):   115.8
```

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:56:42

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.61	ppm	4	Outlet NOX	66.98	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5863	ppm	10	Outlet CO2	1.747	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.549	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6131	RPM	21	Suction(S.)	453.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.4	psig
82	EFM(Freq.)-suct	223.2	HZ	61	Air Compressor	57.83	psig
83	EFM(Freq.)-disc	167.9	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.6	psig	30	Fuel Diff. (R.)	25.26	InH20
37	Fuel Temp. (S.)	77.33	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.5	Deg F
5	After Pump (K)	221.7	Deg F	6	Ice Bath (K)	38.41	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.98	Deg F
9	Ambient (K)	70.78	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.69	Deg F
19	Discharge(RTD)	113.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:57:55

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.59	ppm	4	Outlet NOX	66.88	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6157	ppm	10	Outlet CO2	1.747	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.678	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6133	RPM	21	Suction(S.)	453.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.5	psig
82	EFM(Freq.)-suct	225.6	HZ	61	Air Compressor	57.83	psig
83	EFM(Freq.)-disc	166.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.4	psig	30	Fuel Diff. (R.)	25.29	InH2O
37	Fuel Temp. (S.)	77.25	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.5	Deg F
5	After Pump (K)	219.2	Deg F	6	Ice Bath (K)	38.4	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.98	Deg F
9	Ambient (K)	70.83	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.68	Deg F
19	Discharge(RTD)	113.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE
** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:59:07

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.84	ppm	4	Outlet NOX	67.05	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5975	ppm	10	Outlet CO2	1.743	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.788	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6137	RPM	21	Suction(S.)	453.6	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.6	psig
82	EFM(Freq.)-suct	224.1	HZ	61	Air Compressor	57.93	psig
83	EFM(Freq.)-disc	168.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.2	psig	30	Fuel Diff. (R.)	25.36	InH2O
37	Fuel Temp. (S.)	77.15	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1007	Deg F	4	Sample Filter (K)	229.6	Deg F
5	After Pump (K)	217.1	Deg F	6	Ice Bath (K)	38.23	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.05	Deg F
9	Ambient (K)	70.81	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.67	Deg F
19	Discharge(RTD)	113.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:00:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.64	ppm	4	Outlet NOX	66.89	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6149	ppm	10	Outlet CO2	1.74	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.944	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6133	RPM	21	Suction(S.)	453.7	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.7	psig
82	EFM(Freq.)-suct	223.4	HZ	61	Air Compressor	57.93	psig
83	EFM(Freq.)-disc	168.3	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.7	psig	30	Fuel Diff. (R.)	25.18	InH20
37	Fuel Temp. (S.)	77.06	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.9	Deg F
5	After Pump (K)	215.2	Deg F	6	Ice Bath (K)	38.09	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.8	Deg F
9	Ambient (K)	70.68	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.66	Deg F
19	Discharge(RTD)	113.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE
** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:01:32

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.59	ppm	4	Outlet NOX	66.88	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5625	ppm	10	Outlet CO2	1.741	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.604	ppm
13	Inlet O2	17.69	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6134	RPM	21	Suction(S.)	453.8	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.7	psig
82	EFM(Freq.)-suct	224.9	HZ	61	Air Compressor	57.91	psig
83	EFM(Freq.)-disc	167.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198	psig	30	Fuel Diff. (R.)	25.2	InH2O
37	Fuel Temp. (S.)	77	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	230	Deg F
5	After Pump (K)	213.7	Deg F	6	Ice Bath (K)	38.03	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.68	Deg F
9	Ambient (K)	70.67	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.65	Deg F
19	Discharge(RTD)	113.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:02:45

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.6	ppm	4	Outlet NOX	66.81	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5347	ppm	10	Outlet CO2	1.74	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.379	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6132	RPM	21	Suction(S.)	453.8	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.8	psig
82	EFM(Freq.)-suct	224.1	HZ	61	Air Compressor	57.97	psig
83	EFM(Freq.)-disc	168.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FULL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.2	psig	30	Fuel Diff. (R.)	25.34	InH2O
37	Fuel Temp. (S.)	76.98	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	230.2	Deg F
5	After Pump (K)	212.3	Deg F	6	Ice Bath (K)	37.94	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.52	Deg F
9	Ambient (K)	70.48	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.63	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE
** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:03:57

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.58	ppm	4	Outlet NOX	66.7	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6138	ppm	10	Outlet CO2	1.741	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.776	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6133	RPM	21	Suction(S.)	454	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.9	psig
82	EFM(Freq.)-suct	225.2	HZ	61	Air Compressor	57.95	psig
83	EFM(Freq.)-disc	169.3	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.7	psig	30	Fuel Diff. (R.)	24.95	InH20
37	Fuel Temp. (S.)	76.99	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	230.5	Deg F
5	After Pump (K)	211.2	Deg F	6	Ice Bath (K)	37.93	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.51	Deg F
9	Ambient (K)	70.59	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	575.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.63	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:05:10

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.39	ppm	4	Outlet NOX	66.64	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5484	ppm	10	Outlet CO2	1.738	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.125	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6133	RPM	21	Suction(S.)	454	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.9	psig
82	EFM(Freq.)-suct	224.9	HZ	61	Air Compressor	57.93	psig
83	EFM(Freq.)-disc	168.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	.0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199	psig	30	Fuel Diff. (R.)	25.42	InH2O
37	Fuel Temp. (S.)	77	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	230.9	Deg F
5	After Pump (K)	210.2	Deg F	6	Ice Bath (K)	37.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.55	Deg F
9	Ambient (K)	70.68	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:06:22

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.76	ppm	4	Outlet NOX	66.79	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5611	ppm	10	Outlet CO2	1.739	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.727	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6136	RPM	21	Suction(S.)	454.1	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646	psig
82	EFM(Freq.)-suct	226	HZ	61	Air Compressor	58	psig
83	EFM(Freq.)-disc	169.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.1	psig	30	Fuel Diff. (R.)	25.3	InH2O
37	Fuel Temp. (S.)	77	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	231.1	Deg F
5	After Pump (K)	209.3	Deg F	6	Ice Bath (K)	37.6	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.79	Deg F
9	Ambient (K)	70.74	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:07:35

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.62	ppm	4	Outlet NOX	66.69	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5488	ppm	10	Outlet CO2	1.743	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.253	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6141	RPM	21	Suction(S.)	454.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.2	psig
82	EFM(Freq.)-suct	225	HZ	61	Air Compressor	58.07	psig
83	EFM(Freq.)-disc	167.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.1	psig	30	Fuel Diff. (R.)	25.43	InH2O
37	Fuel Temp. (S.)	77.03	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	231.3	Deg F
5	After Pump (K)	208.5	Deg F	6	Ice Bath (K)	37.53	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.88	Deg F
9	Ambient (K)	70.87	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:08:48

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.51	ppm	4	Outlet NOX	66.65	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6844	ppm	10	Outlet CO2	1.745	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.802	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6141	RPM	21	Suction(S.)	454.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.3	psig
82	EFM(Freq.)-suct	226.1	HZ	61	Air Compressor	58.07	psig
83	EFM(Freq.)-disc	170.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.6	psig	30	Fuel Diff. (R.)	25.61	InH2O
37	Fuel Temp. (S.)	77.09	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	231.8	Deg F
5	After Pump (K)	207.9	Deg F	6	Ice Bath (K)	37.46	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.89	Deg F
9	Ambient (K)	70.87	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	113	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:10:00

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.5	ppm	4	Outlet NOX	66.63	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.578	ppm	10	Outlet CO2	1.748	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.993	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6141	RPM	21	Suction(S.)	454.5	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.4	psig
82	EFM(Freq.)-suct	224.9	HZ	61	Air Compressor	58.1	psig
83	EFM(Freq.)-disc	167.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.2	psig	30	Fuel Diff. (R.)	25.42	InH2O
37	Fuel Temp. (S.)	77.16	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	231.8	Deg F
5	After Pump (K)	209	Deg F	6	Ice Bath (K)	37.34	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.92	Deg F
9	Ambient (K)	70.91	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	112.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:11:13

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.57	ppm	4	Outlet NOX	66.58	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5136	ppm	10	Outlet CO2	1.752	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.428	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6142	RPM	21	Suction(S.)	454.6	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.5	psig
82	EFM(Freq.)-suct	225.3	HZ	61	Air Compressor	58.11	psig
83	EFM(Freq.)-disc	169.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.7	psig	30	Fuel Diff. (R.)	25.54	InH2O
37	Fuel Temp. (S.)	77.22	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	232.2	Deg F
5	After Pump (K)	211.7	Deg F	6	Ice Bath (K)	37.22	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.97	Deg F
9	Ambient (K)	70.95	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	112.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:12:26

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.59	ppm	4	Outlet NOX	66.64	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.562	ppm	10	Outlet CO2	1.755	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.574	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6143	RPM	21	Suction(S.)	454.7	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.5	psig
82	EFM(Freq.)-suct	226.9	HZ	61	Air Compressor	58.14	psig
83	EFM(Freq.)-disc	169.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.2	psig	30	Fuel Diff. (R.)	25.45	InH2O
37	Fuel Temp. (S.)	77.26	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	232.1	Deg F
5	After Pump (K)	216.1	Deg F	6	Ice Bath (K)	37.13	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.98	Deg F
9	Ambient (K)	70.99	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.62	Deg F
19	Discharge(RTD)	112.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:13:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.62	ppm	4	Outlet NOX	66.55	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6456	ppm	10	Outlet CO2	1.76	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.7022	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6149	RPM	21	Suction(S.)	454.7	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.7	psig
82	EFM(Freq.)-suct	224.3	HZ	61	Air Compressor	58.25	psig
83	EFM(Freq.)-disc	167.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.6	psig	30	Fuel Diff. (R.)	25.48	InH2O
37	Fuel Temp. (S.)	77.24	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	232.5	Deg F
5	After Pump (K)	220.5	Deg F	6	Ice Bath (K)	37.04	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.2	Deg F
9	Ambient (K)	70.99	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.61	Deg F
19	Discharge(RTD)	112.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:14:51

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.42	ppm	4	Outlet NOX	66.4	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6264	ppm	10	Outlet CO2	1.757	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.798	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6146	RPM	21	Suction(S.)	454.8	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.7	psig
82	EFM(Freq.)-suct	226	HZ	61	Air Compressor	58.18	psig
83	EFM(Freq.)-disc	168.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.1	psig	30	Fuel Diff. (R.)	25.49	InH2O
37	Fuel Temp. (S.)	77.2	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	232.7	Deg F
5	After Pump (K)	224.5	Deg F	6	Ice Bath (K)	37.01	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.1	Deg F
9	Ambient (K)	71.03	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.6	Deg F
19	Discharge(RTD)	112.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:16:03

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.57	ppm	4	Outlet NOX	66.46	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6262	ppm	10	Outlet CO2	1.763	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.826	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6147	RPM	21	Suction(S.)	454.9	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.8	psig
82	FFM(Freq.)-suct	227.4	HZ	61	Air Compressor	58.24	psig
83	FFM(Freq.)-disc	169.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.8	psig	30	Fuel Diff. (R.)	25.16	InH2O
37	Fuel Temp. (S.)	77.14	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.2	Deg F
5	After Pump (K)	228.1	Deg F	6	Ice Bath (K)	36.83	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.1	Deg F
9	Ambient (K)	70.99	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.6	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:17:16

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.65	ppm	4	Outlet NOX	66.47	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.679	ppm	10	Outlet CO2	1.765	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.944	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6150	RPM	21	Suction(S.)	455	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	646.9	psig
82	FFM(Freq.)-suct	226.1	HZ	61	Air Compressor	58.27	psig
83	FFM(Freq.)-disc	170.2	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	0	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.8	psig	30	Fuel Diff. (R.)	25.55	InH20
37	Fuel Temp. (S.)	77.02	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.2	Deg F
5	After Pump (K)	231.2	Deg F	6	Ice Bath (K)	36.78	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.22	Deg F
9	Ambient (K)	71.02	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.6	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:18:28

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.66	ppm	4	Outlet NOX	66.33	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7	ppm	10	Outlet CO2	1.764	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.343	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6150	RPM	21	Suction(S.)	455	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647	psig
82	FFM(Freq.)-suct	227.7	HZ	61	Air Compressor	58.28	psig
83	FFM(Freq.)-disc	169.4	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TURB PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.5	psig	30	Fuel Diff. (R.)	25.66	InH2O
37	Fuel Temp. (S.)	76.88	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233	Deg F
5	After Pump (K)	233.9	Deg F	6	Ice Bath (K)	36.73	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.17	Deg F
9	Ambient (K)	71.01	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.59	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 10

31 Jan 1990 13:19:41

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.68	ppm	4	Outlet NOX	66.42	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5604	ppm	10	Outlet CO2	1.768	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.057	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6149	RPM	21	Suction(S.)	455.1	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647	psig
82	FFM(Freq.)-suct	227	HZ	61	Air Compressor	58.33	psig
83	FFM(Freq.)-disc	169.6	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TURB PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.7	psig	30	Fuel Diff. (R.)	25.71	InH2O
37	Fuel Temp. (S.)	76.73	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.2	Deg F
5	After Pump (K)	236.2	Deg F	6	Ice Bath (K)	36.64	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.1	Deg F
9	Ambient (K)	71.01	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.59	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:20:54

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.62	ppm	4	Outlet NOX	66.25	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5458	ppm	10	Outlet CO2	1.767	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.917	ppm
13	Inlet O2	17.66	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6151	RPM	21	Suction(S.)	455.2	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647	psig
82	FFM(Freq.)-suct	226.2	HZ	61	Air Compressor	58.34	psig
83	FFM(Freq.)-disc	169.8	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.8	psig	30	Fuel Diff. (R.)	25.84	InH2O
37	Fuel Temp. (S.)	76.6	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.5	Deg F
5	After Pump (K)	238.1	Deg F	6	Ice Bath (K)	36.52	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.98	Deg F
9	Ambient (K)	71.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.58	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:22:06

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.65	ppm	4	Outlet NOX	66.38	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6661	ppm	10	Outlet CO2	1.771	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.174	ppm
13	Inlet O2	17.67	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6155	RPM	21	Suction(S.)	455.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.2	psig
82	EFM(Freq.)-suct	226.2	HZ	61	Air Compressor	58.37	psig
83	EFM(Freq.)-disc	169.3	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TURE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	199.5	psig	30	Fuel Diff. (R.)	25.53	InH2O
37	Fuel Temp. (S.)	76.52	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.5	Deg F
5	After Pump (K)	239.9	Deg F	6	Ice Bath (K)	36.41	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.24	Deg F
9	Ambient (K)	71.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.58	Deg F
19	Discharge(RTD)	112.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:23:19

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.61	ppm	4	Outlet NOX	66.3	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7343	ppm	10	Outlet CO2	1.771	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.555	ppm
13	Inlet O2	17.67	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6156	RPM	21	Suction(S.)	455.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.2	psig
82	FFM(Freq.)-suct	225.4	HZ	61	Air Compressor	58.41	psig
83	FFM(Freq.)-disc	167.7	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.8	psig	30	Fuel Diff. (R.)	25.23	InH2O
37	Fuel Temp. (S.)	76.45	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.7	Deg F
5	After Pump (K)	241.4	Deg F	6	Ice Bath (K)	36.29	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.34	Deg F
9	Ambient (K)	71.08	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.58	Deg F
19	Discharge(RTD)	112.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:24:32

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.62	ppm	4	Outlet NOX	66.37	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6964	ppm	10	Outlet CO2	1.768	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9675	ppm
13	Inlet O2	17.67	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6153	RPM	21	Suction(S.)	455.3	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.2	psig
82	EFM(Freq.)-suct	227.2	HZ	61	Air Compressor	58.41	psig
83	EFM(Freq.)-disc	169.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	200	psig	30	Fuel Diff. (R.)	25.3	InH2O
37	Fuel Temp. (S.)	76.41	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.8	Deg F
5	After Pump (K)	242.6	Deg F	6	Ice Bath (K)	36.21	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.25	Deg F
9	Ambient (K)	70.98	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.57	Deg F
19	Discharge(RTD)	112.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE
** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:25:45

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.67	ppm	4	Outlet NOX	66.37	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5781	ppm	10	Outlet CO2	1.768	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	2.356	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6154	RPM	21	Suction(S.)	455.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.3	psig
82	FFM(Freq.)-suct	226.3	HZ	61	Air Compressor	58.42	psig
83	FFM(Freq.)-disc	167.5	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TURE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.9	psig	30	Fuel Diff. (R.)	25.68	InH2O
37	Fuel Temp. (S.)	76.35	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	233.8	Deg F
5	After Pump (K)	242.4	Deg F	6	Ice Bath (K)	36.1	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.32	Deg F
9	Ambient (K)	71.02	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.57	Deg F
19	Discharge(RTD)	112.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

End Run 2

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 13:26:57

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.66	ppm	4	Outlet NOX	66.31	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6121	ppm	10	Outlet CO2	1.77	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.547	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6155	RPM	21	Suction(S.)	455.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	647.5	psig
82	FFM(Freq.)-suct	226.6	HZ	61	Air Compressor	58.41	psig
83	FFM(Freq.)-disc	168	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	197.5	psig	30	Fuel Diff. (R.)	25.69	InH2O
37	Fuel Temp. (S.)	76.28	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	234.1	Deg F
5	After Pump (K)	241.4	Deg F	6	Ice Bath (K)	36.02	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	71.36	Deg F
9	Ambient (K)	71.17	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	577.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.56	Deg F
19	Discharge(RTD)	112.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE FFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1234 **

EMISSIONS TEST

STATION # 17 ENGINE# 1C

31 Jan 1990 12:56:42

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.61	ppm	4	Outlet NOX	66.98	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5863	ppm	10	Outlet CO2	1.747	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.549	ppm
13	Inlet O2	17.68	%	14	Outlet O2	0	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	6131	RPM	21	Suction(S.)	453.4	psig
81	LP Speed(Freq.)	5614	RPM	22	Discharge(S.)	645.4	psig
82	EFM(Freq.)-suct	223.2	HZ	61	Air Compressor	57.83	psig
83	EFM(Freq.)-disc	167.9	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	0	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	198.6	psig	30	Fuel Diff. (R.)	25.26	InH2O
37	Fuel Temp. (S.)	77.33	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	1006	Deg F	4	Sample Filter (K)	229.5	Deg F
5	After Pump (K)	221.7	Deg F	6	Ice Bath (K)	38.41	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	70.98	Deg F
9	Ambient (K)	70.78	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	576.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	58.69	Deg F
19	Discharge(RTD)	113.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

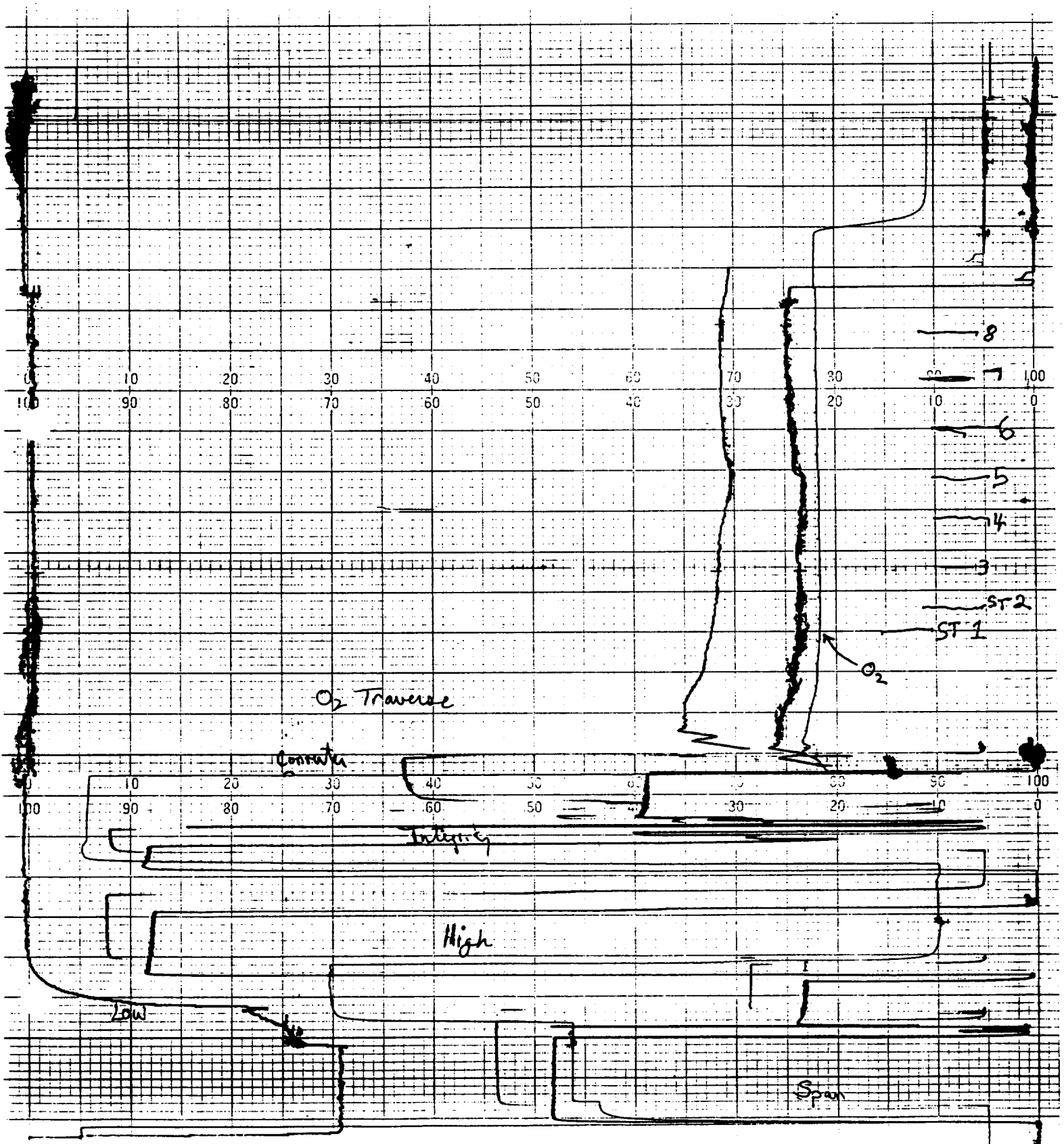
** Concentrations and Parameters compiled using file C1234 **

APPENDIX C
OXYGEN TRAVERSE

OXYGEN TRAVERSE

An oxygen traverse was performed on January 12, 1990 to prove that the exhaust stream was not stratified. A single point probe was moved to each of the eight sample points documented in the report and the oxygen was monitored for about 4 minutes. The results are tabulated below and chart recordings and raw data printouts are included.

Point	Distance from wall (%)	Distance from wall (inches)	Time	Oxygen Content (%)
1	3.2	1.7	13:56-13:59	18.02
2	10.5	5.5	14:03-14:06	18.04
3	19.4	10.2	14:09-14:12	18.02
4	32.3	17.0	14:15-14:19	18.02
5	67.7	35.6	14:21-14:25	17.98
6	80.6	42.4	14:28-14:32	17.97
7	89.5	47.0	14:36-14:39	17.96
8	96.8	50.9	14:43-14:46	17.96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O_2 traverse
1-12-90
Sta. 17 2-C

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 13:56:15

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.85	ppm	4	Outlet NOX	70.06	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7732	ppm	10	Outlet CO2	1.613	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.235	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.304	RPM	21	Suction(S.)	.9843	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.768	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2036	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.604	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.08747	psig	30	Fuel Diff. (R.)	-.03064	InH2O
37	Fuel Temp. (S.)	84.83	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	968.5	Deg F	4	Sample Filter (K)	256.4	Deg F
5	After Pump (K)	213.5	Deg F	6	Ice Bath (K)	34.6	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.44	Deg F
9	Ambient (K)	62.28	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	543.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.64	Deg F
19	Discharge(RTD)	107.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 13:57:23

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.74	ppm	4	Outlet NOX	69.7	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7646	ppm	10	Outlet CO2	1.609	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.12	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.301	RPM	21	Suction(S.)	.9599	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.827	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2031	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.601	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.07463	psig	30	Fuel Diff. (R.)	-.02935	InH2O
37	Fuel Temp. (S.)	84.76	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	967.1	Deg F	4	Sample Filter (K)	257.5	Deg F
5	After Pump (K)	213.7	Deg F	6	Ice Bath (K)	34.66	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.45	Deg F
9	Ambient (K)	62.3	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	543.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.64	Deg F
19	Discharge(RTD)	107.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 13:58:27

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.61	ppm	4	Outlet NOX	69.44	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6837	ppm	10	Outlet CO2	1.609	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9172	ppm
13	Inlet O2	0	%	14	Outlet O2	18.03	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.297	RPM	21	Suction(S.)	.9707	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.812	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.203	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.601	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1032	psig	30	Fuel Diff. (R.)	-.03054	InH2O
37	Fuel Temp. (S.)	84.72	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	966.3	Deg F	4	Sample Filter (K)	258.4	Deg F
5	After Pump (K)	213.8	Deg F	6	Ice Bath (K)	34.68	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.72	Deg F
9	Ambient (K)	62.22	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	543.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.64	Deg F
19	Discharge(RTD)	107.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 13:59:36

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.49	ppm	4	Outlet NOX	69.15	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6634	ppm	10	Outlet CO2	1.605	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.082	ppm
13	Inlet O2	0	%	14	Outlet O2	18.03	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.295	RPM	21	Suction(S.)	1.047	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.987	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2031	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.599	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09781	psig	30	Fuel Diff. (R.)	-.03126	InH2O
37	Fuel Temp. (S.)	84.56	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	964.5	Deg F	4	Sample Filter (K)	259.3	Deg F
5	After Pump (K)	213.7	Deg F	6	Ice Bath (K)	34.59	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.75	Deg F
9	Ambient (K)	62.1	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	542.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.64	Deg F
19	Discharge(RTD)	107.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:03:12

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.61	ppm	4	Outlet NOX	68.71	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7813	ppm	10	Outlet CO2	1.596	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.069	ppm
13	Inlet O2	0	%	14	Outlet O2	18.03	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.29	RPM	21	Suction(S.)	1.078	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.912	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2023	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09797	psig	30	Fuel Diff. (R.)	-.03052	InH2O
37	Fuel Temp. (S.)	83.52	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	960.9	Deg F	4	Sample Filter (K)	261.2	Deg F
5	After Pump (K)	212.8	Deg F	6	Ice Bath (K)	34.56	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.78	Deg F
9	Ambient (K)	62.46	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	541.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.65	Deg F
19	Discharge(RTD)	108	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:04:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.53	ppm	4	Outlet NOX	68.46	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7326	ppm	10	Outlet CO2	1.592	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.231	ppm
13	Inlet O2	0	%	14	Outlet O2	18.04	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.289	RPM	21	Suction(S.)	.9912	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.713	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2023	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09872	psig	30	Fuel Diff. (R.)	-.03206	InH2O
37	Fuel Temp. (S.)	82.46	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	959.9	Deg F	4	Sample Filter (K)	261	Deg F
5	After Pump (K)	214.3	Deg F	6	Ice Bath (K)	34.5	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.72	Deg F
9	Ambient (K)	62.38	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	541.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.65	Deg F
19	Discharge(RTD)	108.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:05:29

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.56	ppm	4	Outlet NOX	68.37	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6884	ppm	10	Outlet CO2	1.593	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.075	ppm
13	Inlet O2	0	%	14	Outlet O2	18.04	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.289	RPM	21	Suction(S.)	.9504	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.7	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2018	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.602	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.07191	psig	30	Fuel Diff. (R.)	-.0296	InH2O
37	Fuel Temp. (S.)	83.34	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	960	Deg F	4	Sample Filter (K)	260.6	Deg F
5	After Pump (K)	216.3	Deg F	6	Ice Bath (K)	34.68	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.86	Deg F
9	Ambient (K)	62.48	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	540.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.66	Deg F
19	Discharge(RTD)	108.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:06:37

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.64	ppm	4	Outlet NOX	68.46	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.7096	ppm	10	Outlet CO2	1.591	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.238	ppm
13	Inlet O2	0	%	14	Outlet O2	18.04	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.289	RPM	21	Suction(S.)	.9035	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.743	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2016	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	1.602	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.08054	psig	30	Fuel Diff. (R.)	-.02983	InH20
37	Fuel Temp. (S.)	83.74	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	959.5	Deg F	4	Sample Filter (K)	260.2	Deg F
5	After Pump (K)	218.4	Deg F	6	Ice Bath (K)	34.64	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.71	Deg F
9	Ambient (K)	62.33	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	540.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.67	Deg F
19	Discharge(RTD)	108.1	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start #3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:09:36

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	62.05	ppm	4	Outlet NOX	68.12	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6974	ppm	10	Outlet CO2	1.595	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.468	ppm
13	Inlet O2	0	%	14	Outlet O2	18.03	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.292	RPM	21	Suction(S.)	.859	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.852	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2053	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.601	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09713	psig	30	Fuel Diff. (R.)	-.03144	InH2O
37	Fuel Temp. (S.)	83.81	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	957.9	Deg F	4	Sample Filter (K)	257.6	Deg F
5	After Pump (K)	222.7	Deg F	6	Ice Bath (K)	34.69	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.42	Deg F
9	Ambient (K)	62.06	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	539.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.68	Deg F
19	Discharge(RTD)	108.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

#2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:10:40

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	62	ppm	4	Outlet NOX	67.8	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6903	ppm	10	Outlet CO2	1.593	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.38	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.293	RPM	21	Suction(S.)	.8462	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.78	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2066	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09322	psig	30	Fuel Diff. (R.)	-.03427	InH2O
37	Fuel Temp. (S.)	83.78	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	957.8	Deg F	4	Sample Filter (K)	256.3	Deg F
5	After Pump (K)	224.3	Deg F	6	Ice Bath (K)	34.77	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.52	Deg F
9	Ambient (K)	62.05	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	539.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.68	Deg F
19	Discharge(RTD)	108.2	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

#3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:11:49

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.68	ppm	4	Outlet NOX	67.24	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6871	ppm	10	Outlet CO2	1.595	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.304	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.294	RPM	21	Suction(S.)	.904	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.897	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2076	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.601	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1044	psig	30	Fuel Diff. (R.)	-.02753	InH2O
37	Fuel Temp. (S.)	84.2	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	958.2	Deg F	4	Sample Filter (K)	255.2	Deg F
5	After Pump (K)	225.5	Deg F	6	Ice Bath (K)	34.82	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.78	Deg F
9	Ambient (K)	62.3	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	539	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.69	Deg F
19	Discharge(RTD)	108.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

#4

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:12:58

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	61.55	ppm	4	Outlet NOX	66.92	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6419	ppm	10	Outlet CO2	1.6	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.22	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.295	RPM	21	Suction(S.)	1.008	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.942	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2086	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.07395	psig	30	Fuel Diff. (R.)	-.02796	InH2O
37	Fuel Temp. (S.)	84.01	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	959.2	Deg F	4	Sample Filter (K)	254.1	Deg F
5	After Pump (K)	226.5	Deg F	6	Ice Bath (K)	34.92	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.22	Deg F
9	Ambient (K)	62.55	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	539	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.69	Deg F
19	Discharge(RTD)	108.3	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 4

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:15:57

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.95	ppm	4	Outlet NOX	65.59	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5881	ppm	10	Outlet CO2	1.588	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.035	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.297	RPM	21	Suction(S.)	.892	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.763	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2103	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.602	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1135	psig	30	Fuel Diff. (R.)	-.03317	InH2O
37	Fuel Temp. (S.)	83.19	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.2	Deg F	4	Sample Filter (K)	250	Deg F
5	After Pump (K)	228.2	Deg F	6	Ice Bath (K)	35.38	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.5	Deg F
9	Ambient (K)	62.15	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	538.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.7	Deg F
19	Discharge(RTD)	108.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:17:07

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.82	ppm	4	Outlet NOX	65.43	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5524	ppm	10	Outlet CO2	1.594	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.114	ppm
13	Inlet O2	0	%	14	Outlet O2	18.03	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.296	RPM	21	Suction(S.)	.932	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.774	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2092	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.598	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1108	psig	30	Fuel Diff. (R.)	-.02996	InH2O
37	Fuel Temp. (S.)	83.54	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.5	Deg F	4	Sample Filter (K)	247.7	Deg F
5	After Pump (K)	228.6	Deg F	6	Ice Bath (K)	35.6	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.58	Deg F
9	Ambient (K)	62.09	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	538	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.7	Deg F
19	Discharge(RTD)	108.4	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:18:16

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.74	ppm	4	Outlet NOX	65.43	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5417	ppm	10	Outlet CO2	1.596	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9481	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.296	RPM	21	Suction(S.)	.9006	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.716	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2082	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.6	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1026	psig	30	Fuel Diff. (R.)	-.02974	InH2O
37	Fuel Temp. (S.)	83.64	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.3	Deg F	4	Sample Filter (K)	245.9	Deg F
5	After Pump (K)	229.3	Deg F	6	Ice Bath (K)	35.84	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.67	Deg F
9	Ambient (K)	62.14	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	538.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.7	Deg F
19	Discharge(RTD)	108.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

4

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:19:20

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	60.58	ppm	4	Outlet NOX	65.58	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5843	ppm	10	Outlet CO2	1.602	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.146	ppm
13	Inlet O2	0	%	14	Outlet O2	18.02	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.295	RPM	21	Suction(S.)	.8692	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.76	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2073	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.604	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1155	psig	30	Fuel Diff. (R.)	-.03074	InH2O
37	Fuel Temp. (S.)	83.68	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.5	Deg F	4	Sample Filter (K)	244.2	Deg F
5	After Pump (K)	230	Deg F	6	Ice Bath (K)	36.07	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.84	Deg F
9	Ambient (K)	62.34	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.7	Deg F
19	Discharge(RTD)	108.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 5

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:21:55

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	62.9	ppm	4	Outlet NOX	66.83	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.4734	ppm	10	Outlet CO2	1.634	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.027	ppm
13	Inlet O2	0	%	14	Outlet O2	18.01	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.292	RPM	21	Suction(S.)	.9853	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.84	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2058	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.607	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.08822	psig	30	Fuel Diff. (R.)	-.02894	InH2O
37	Fuel Temp. (S.)	84.13	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	956	Deg F	4	Sample Filter (K)	239.4	Deg F
5	After Pump (K)	231.2	Deg F	6	Ice Bath (K)	36.5	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.25	Deg F
9	Ambient (K)	62.66	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.5	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:23:04

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	63.02	ppm	4	Outlet NOX	67.13	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5193	ppm	10	Outlet CO2	1.635	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.028	ppm
13	Inlet O2	0	%	14	Outlet O2	17.97	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.29	RPM	21	Suction(S.)	.9595	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.677	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2062	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.598	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.08804	psig	30	Fuel Diff. (R.)	-.02509	InH2O
37	Fuel Temp. (S.)	84.19	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.8	Deg F	4	Sample Filter (K)	236.9	Deg F
5	After Pump (K)	231.6	Deg F	6	Ice Bath (K)	36.66	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.21	Deg F
9	Ambient (K)	62.56	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:24:10

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	62.93	ppm	4	Outlet NOX	67.19	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5108	ppm	10	Outlet CO2	1.628	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9141	ppm
13	Inlet O2	0	%	14	Outlet O2	17.97	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.288	RPM	21	Suction(S.)	.8891	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.625	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2051	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.6	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.0869	psig	30	Fuel Diff. (R.)	-.0266	InH2O
37	Fuel Temp. (S.)	83.73	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	954.1	Deg F	4	Sample Filter (K)	234.3	Deg F
5	After Pump (K)	231.9	Deg F	6	Ice Bath (K)	36.84	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.83	Deg F
9	Ambient (K)	62.13	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

4

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:25:18

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	63.07	ppm	4	Outlet NOX	67.38	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5026	ppm	10	Outlet CO2	1.63	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.136	ppm
13	Inlet O2	0	%	14	Outlet O2	17.98	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.287	RPM	21	Suction(S.)	.8811	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.755	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2052	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.601	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1232	psig	30	Fuel Diff. (R.)	-.03217	InH2O
37	Fuel Temp. (S.)	83.74	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	954.1	Deg F	4	Sample Filter (K)	231.7	Deg F
5	After Pump (K)	232.2	Deg F	6	Ice Bath (K)	37.13	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.77	Deg F
9	Ambient (K)	62.21	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537.2	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.6	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 6

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:28:38

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.11	ppm	4	Outlet NOX	67.87	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.4928	ppm	10	Outlet CO2	1.642	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.009	ppm
13	Inlet O2	0	%	14	Outlet O2	17.97	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.282	RPM	21	Suction(S.)	1.003	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.91	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2042	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.602	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09672	psig	30	Fuel Diff. (R.)	-.02739	InH2O
37	Fuel Temp. (S.)	84.03	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	955.2	Deg F	4	Sample Filter (K)	225.1	Deg F
5	After Pump (K)	232.7	Deg F	6	Ice Bath (K)	37.8	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.24	Deg F
9	Ambient (K)	62.71	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.9	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

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EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:29:50

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.03	ppm	4	Outlet NOX	67.78	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5167	ppm	10	Outlet CO2	1.633	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.061	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.28	RPM	21	Suction(S.)	.9573	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.865	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2035	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.07872	psig	30	Fuel Diff. (R.)	-.02063	InH2O
37	Fuel Temp. (S.)	84.2	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	953.8	Deg F	4	Sample Filter (K)	222.8	Deg F
5	After Pump (K)	232.8	Deg F	6	Ice Bath (K)	38	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.05	Deg F
9	Ambient (K)	62.56	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	537	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

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EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:30:55

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.07	ppm	4	Outlet NOX	67.81	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5616	ppm	10	Outlet CO2	1.63	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.8752	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.279	RPM	21	Suction(S.)	1.021	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.875	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2032	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.128	psig	30	Fuel Diff. (R.)	-.02178	InH2O
37	Fuel Temp. (S.)	83.97	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	953.3	Deg F	4	Sample Filter (K)	220.7	Deg F
5	After Pump (K)	233	Deg F	6	Ice Bath (K)	38.18	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.93	Deg F
9	Ambient (K)	62.35	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:32:03

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.04	ppm	4	Outlet NOX	67.74	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5093	ppm	10	Outlet CO2	1.624	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.8864	ppm
13	Inlet O2	0	%	14	Outlet O2	17.97	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.278	RPM	21	Suction(S.)	.8407	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.701	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2032	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.599	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1296	psig	30	Fuel Diff. (R.)	-.02482	InH2O
37	Fuel Temp. (S.)	83.69	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	952.2	Deg F	4	Sample Filter (K)	218.5	Deg F
5	After Pump (K)	233.1	Deg F	6	Ice Bath (K)	38.31	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.66	Deg F
9	Ambient (K)	62.13	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.8	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.7	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 7

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:36:16

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.6	ppm	4	Outlet NOX	67.98	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.6691	ppm	10	Outlet CO2	1.632	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.918	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.277	RPM	21	Suction(S.)	.8582	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.718	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2023	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.6	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1051	psig	30	Fuel Diff. (R.)	-.02466	InH2O
37	Fuel Temp. (S.)	83.67	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	953.3	Deg F	4	Sample Filter (K)	211.5	Deg F
5	After Pump (K)	232.2	Deg F	6	Ice Bath (K)	38.76	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.2	Deg F
9	Ambient (K)	62.4	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:37:24

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.63	ppm	4	Outlet NOX	67.88	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5044	ppm	10	Outlet CO2	1.629	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.04	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.277	RPM	21	Suction(S.)	.8839	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.834	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2021	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	1.601	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1233	psig	30	Fuel Diff. (R.)	-.02279	InH20
37	Fuel Temp. (S.)	83.64	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	953.2	Deg F	4	Sample Filter (K)	209.9	Deg F
5	After Pump (K)	229.9	Deg F	6	Ice Bath (K)	38.61	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.19	Deg F
9	Ambient (K)	62.38	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:38:28

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.75	ppm	4	Outlet NOX	68	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5556	ppm	10	Outlet CO2	1.63	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.006	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.278	RPM	21	Suction(S.)	.8998	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.826	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.202	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.602	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.139	psig	30	Fuel Diff. (R.)	-.02081	InH2O
37	Fuel Temp. (S.)	83.68	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	953.5	Deg F	4	Sample Filter (K)	208.3	Deg F
5	After Pump (K)	227.5	Deg F	6	Ice Bath (K)	38.64	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62.21	Deg F
9	Ambient (K)	62.44	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.5	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

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EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:39:37

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.65	ppm	4	Outlet NOX	67.83	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5141	ppm	10	Outlet CO2	1.624	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9201	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.279	RPM	21	Suction(S.)	.816	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.807	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2016	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.603	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09804	psig	30	Fuel Diff. (R.)	-.023	InH2O
37	Fuel Temp. (S.)	83.15	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	952.2	Deg F	4	Sample Filter (K)	206.8	Deg F
5	After Pump (K)	225.2	Deg F	6	Ice Bath (K)	38.55	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.92	Deg F
9	Ambient (K)	62.28	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.4	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.8	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

Start 8

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:43:10

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.86	ppm	4	Outlet NOX	67.43	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5482	ppm	10	Outlet CO2	1.618	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.083	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.283	RPM	21	Suction(S.)	.8455	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.708	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2048	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.61	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1701	psig	30	Fuel Diff. (R.)	-.02427	InH2O
37	Fuel Temp. (S.)	82.77	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	952.1	Deg F	4	Sample Filter (K)	201.5	Deg F
5	After Pump (K)	218.8	Deg F	6	Ice Bath (K)	38.3	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62	Deg F
9	Ambient (K)	62.42	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.6	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

2

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:44:18

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.77	ppm	4	Outlet NOX	66.91	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5632	ppm	10	Outlet CO2	1.613	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.139	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.285	RPM	21	Suction(S.)	.8711	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.895	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2068	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.61	InH2O	35	Barocel 3	0	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.07691	psig	30	Fuel Diff. (R.)	-.02172	InH2O
37	Fuel Temp. (S.)	82.93	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	951.9	Deg F	4	Sample Filter (K)	199.8	Deg F
5	After Pump (K)	217	Deg F	6	Ice Bath (K)	38.16	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	62	Deg F
9	Ambient (K)	62.39	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.7	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.71	Deg F
19	Discharge(RTD)	108.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

3

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:45:27

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.32	ppm	4	Outlet NOX	66.44	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.578	ppm	10	Outlet CO2	1.605	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	1.043	ppm
13	Inlet O2	0	%	14	Outlet O2	17.96	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.286	RPM	21	Suction(S.)	.8801	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.887	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2075	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH20
23	Differential (S.)	1.609	InH20	35	Barocel 3	0	InH20

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.1003	psig	30	Fuel Diff. (R.)	-.02427	InH20
37	Fuel Temp. (S.)	82.84	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	950.7	Deg F	4	Sample Filter (K)	198.2	Deg F
5	After Pump (K)	215.5	Deg F	6	Ice Bath (K)	38.15	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.8	Deg F
9	Ambient (K)	62.31	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.3	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.72	Deg F
19	Discharge(RTD)	108.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

4

EMISSIONS TEST

STATION # 17 ENGINE# 2C

12 Jan 1990 14:46:30

*** GAS CONCENTRATIONS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
2	Outlet NO	64.17	ppm	4	Outlet NOX	66.12	ppm
5	Ambient NO	0	ppm	6	Ambient NOX	0	ppm
7	Inlet CO	0	ppm	8	Inlet CO2	0	%
9	Outlet CO	.5124	ppm	10	Outlet CO2	1.605	%
11	Inlet Total HC	0	ppm	12	Outlet Total HC	.9719	ppm
13	Inlet O2	0	%	14	Outlet O2	17.97	%
15	Ambient O2	0	%				

*** ENGINE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
80	HP Speed(Freq.)	2.288	RPM	21	Suction(S.)	.9584	psig
81	LP Speed(Freq.)	.001	RPM	22	Discharge(S.)	1.874	psig
82	EFM(Freq.)-suct	0	HZ	61	Air Compressor	-.2084	psig
83	EFM(Freq.)-disc	0	HZ	33	Barocel 1	0	InH2O
23	Differential (S.)	1.608	InH2O	35	Barocel ~~3~~	~~0~~	InH2O

*** FUEL TUBE PARAMETERS ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
29	Fuel Pressure (R.)	-.09347	psig	30	Fuel Diff. (R.)	-.02168	InH2O
37	Fuel Temp. (S.)	83.23	Deg F				

*** TEMPERATURES ***

#	INSTRUMENT LABEL	VALUE	UNITS	#	INSTRUMENT LABEL	VALUE	UNITS
1	Unused (K)	0	Deg F	2	Unused (K)	0	Deg F
3	Sample Point (K)	950.8	Deg F	4	Sample Filter (K)	196.7	Deg F
5	After Pump (K)	214.2	Deg F	6	Ice Bath (K)	38.05	Deg F
7	Dump Valve (K)	0	Deg F	8	Inlet Air(K)	61.78	Deg F
9	Ambient (K)	62.41	Deg F	10	Unused	0	Deg F
11	Exhaust Stack (K)	536.1	Deg F	12	Unused	0	Deg F
13	Unused	0	Deg F	14	Unused	0	Deg F
15	Unused	0	Deg F	16	Unused	0	Deg F
17	Inlet Air(RTD)	0	Deg F	18	Suction(RTD)	56.72	Deg F
19	Discharge(RTD)	108.9	Deg F				

Barometric Press. 29.97 InHg Specific Gravity .5992

*** SCANNING PERIOD IS 1 MINUTE(S) ***

COMMENTS: THRU BY ORIFICE (20.00/28.83) **********
THRU ALSO BY SUCT AND DISCHARGE EFMS *******
PETERSON,MARTIN,NOWAK,PELLETTE

** Concentrations and Parameters compiled using file C1122 **

APPENDIX D
PROTOCOL GAS CALIBRATIONS

TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

TENNECO GAS PIPELINE
ATTN: MIKE PETERSON

Shipped From: Scott SAN BERNARDINO
Date Shipped 9-11-89
Our Project No: 2352
Your P.O. No: 082189-MEP
Page 1 of 1
Expiration Date: 3-11-91

CERTIFICATE OF ANALYSIS—EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. ALM-6123 Cylinder Pressure 1900 psig Certified Accuracy ±1 % NBS Traceable

REFERENCE STD

COMPONENTS	CERTIFIED CONC	SRM/CRM NO.	CYL. NO.	CONC.
Nitric Oxide	61.44 PPM	CRM 1684	ALM-3640	97.20 PPM
NOX	61.54 PPM			

GAS ANALYZER

MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Thermo-Electron 10 AR S/N 14853-150	8-2-89	Chemi-Luminenscent

BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Nitric Oxide
First Analysis Date 8-31-89 Units PPM

Z 0.00	R 97.13	T 61.45
R 97.03	Z 0.06	T 61.33
Z 0.04	T 61.29	R 96.78

Mean Test Assay 61.48 PPM

Second Analysis Date 9-7-89 Units PPM

Z 0.00	R 96.62	T 61.03
R 96.40	Z -0.02	T 60.90
Z -0.06	T 60.80	R 96.10

Mean Test Assay 61.44 PPM

Component ____ Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Component ____ Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst Doug Hagberg

Approved By: [signature]

TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

Tenneco Gas Pipeline Group

Shipped From: Scott San Bernardino
Date Shipped 12/14/89
Our Project No: 3985
Your P.O. No: TP 1116
Page 1 of 1
Expiration Date: 6/91

CERTIFICATE OF ANALYSIS—EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. aLM 11615 Cylinder Pressure 1900 PSIG Certified Accuracy ±1 % NBS Traceable

REFERENCE STD					GAS ANALYZER		
COMPONENTS	CERTIFIED CONC	SRM/CRM NO.	CYL. NO.	CONC.	MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Nitric Oxide	124.8 PPM	CRM 1684 B	ALM 3640	97.28 PPM	Thermo-Electron 10 AR S/N 14853-150	11/16/89	Chemi-Luminenscent
NOX	125.2 PPM						

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BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Nitric Oxide
First Analysis Date 12/5/89 Units PPM

Z 0.0	R 38.88	T 49.80
R 38.86	Z 0.0	T 49.78
Z 0.0	T 49.80	R 38.87

Mean Test Assay 124.6

Second Analysis Date 12/13/89 Units PPM

Z 0.0	R 38.88	T 49.84
R 38.85	Z 0.0	T 49.79
Z 0.01	T 49.84	R 38.78

Mean Test Assay 124.8

Component _____
Date _____ Units _____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay _____

Date _____ Units _____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay _____

Component _____
Date _____ Units _____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay _____

Date _____ Units _____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay _____

Chronology: Date _____
Assay _____

Analyst Lee Oldham

Approved By: [signature]

TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

Shipped From: Scott SAN BERNARDINO
Date Shipped 9-11-89
Our Project No: 2352
Your P.O. No: 082189-MEP
Page 1 of 1
Expiration Date: 3-11-91

TENNECO GAS PIPELINE
ATTN: MIKE PETERSON

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. ALM-7345 Cylinder Pressure 1900 psig Certified Accuracy ±1 % NBS Traceable

REFERENCE STD					GAS ANALYZER		
COMPONENTS	CERTIFIED CONC	SRM/CRM NO.	CYL. NO.	CONC.	MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Nitric Oxide	223.1 PPM	CRM 1685 B	CAL-6960	233.8 PPM	Thermo-Electron	8-2-89	Chemi-Luminenscent
					10 AR S/N 14853-150		
NOX	223.4 PPM						

BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Nitric Oxide
First Analysis Date 8-31-89 Units PPM
Z 0.00 R 93.28 T 88.93
R 93.13 Z 0.06 T 88.85
Z 0.05 T 88.82 R 93.05
Mean Test Assay 223.0 PPM

Second Analysis Date 9-7-89 Units PPM
Z 0.00 R 93.42 T 89.08
R 93.30 Z 0.02 T 89.07
Z 0.02 T 89.05 R 93.27
Mean Test Assay 223.1 PPM

Component ____ Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Component ____ Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Date ____ Units ____
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst Doug Hagberg

Approved By: [signature]

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TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

TENNECO GAS PIPELINE
ATTN: MIKE PETERSON

Shipped From: Scott SAN BERNARDINO
Date Shipped 9-11-89
Our Project No: 2352
Your P.O. No: 082189-MEP
Page 1 of 1
Expiration Date: 3-11-91

CERTIFICATE OF ANALYSIS—EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. AAL-5893 Cylinder Pressure 1900 psig Certified Accuracy ±1 % NBS Traceable

REFERENCE STD

COMPONENTS	CERTIFIED CONC	SRM/CRM NO.	CYL. NO.	CONC.
Oxygen	6.02%	CRM 2658	AAL-18523	10.08%

GAS ANALYZER

MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Beckman 755	6-23-89	Paramagnetic
S/N 100410		

BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Oxygen
First Analysis Date 9-5-89 Units %

Z 00.0	R 97.4	T 58.2
R 97.4	Z 00.0	T 58.2
Z 00.0	T 58.2	R 97.4

Mean Test Assay 6.02%

Second Analysis Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____
Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____
Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst Maynard Johnson

Approved By: [signature]

172

TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

TENNECO GAS PIPELINE
ATTN: MIKE PETERSON

Shipped From: Scott SAN BERNARDINO
Date Shipped 9-11-89
Our Project No: 2352
Your P.O. No: 082189-MEP
Page 1 of 1
Expiration Date: 3-11-91

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. AAL-1776 Cylinder Pressure 1900 psig Certified Accuracy ±1 % NBS Traceable

COMPONENTS	CERTIFIED CONC	REFERENCE STD SRM/CRM NO.	CYL. NO.	CONC.	GAS ANALYZER MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Oxygen	12.00%	CRM 2659	AAL-18588	20.67%	Beckman 755	6-23-89	Paramagnetic
					S/N 100410		

BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Oxygen
First Analysis Date 9-5-89 Units %

Z 00.0	R 82.7	T 48.0
R 82.7	Z 00.0	T 48.0
Z 00.0	T 48.0	R 82.7

Mean Test Assay 12.00%

Second Analysis Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____
Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____
Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst Maynard Johnson

Approved By: [signature]

TELEX: 510-100-8831 (ScotGas)
FAX: 714-887-0549
PHONE: 714-887-2571

Scott Specialty Gases a division of

Scott Environmental Technology Inc. 2600 CAJON BLVD., SAN BERNARDINO, CA 92405

TENNECO GAS PIPELINE
ATTN: MIKE PETERSON

Shipped From: Scott SAN BERNARDINO
Date Shipped 9-11-89
Our Project No: 2352
Your P.O. No: 082189-MEP
Page 1 of 1
Expiration Date: 3-11-91

CERTIFICATE OF ANALYSIS—EPA PROTOCOL GASES*

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. AAL-2517 Cylinder Pressure 1900 psig Certified Accuracy ±1 % NBS Traceable

REFERENCE STD					GAS ANALYZER		
COMPONENTS	CERTIFIED CONC	SRM/CRM NO.	CYL. NO.	CONC.	MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
Oxygen	20.95%	CRM 2659	AAL-18588	20.67%	Beckman 755 S/N 100410	6-23-89	Paramagnetic

BALANCE GAS Nitrogen

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component Oxygen
First Analysis Date 9-5-89 Units %

Z 00.0	R 82.7	T 83.8
R 82.7	Z 00.0	T 83.8
Z 00.0	T 83.8	R 82.7

Mean Test Assay 20.95%

Second Analysis Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____ Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____ Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units ____

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst Maynard Johnson

Approved By: [signature]

Scott Specialty Gas a division of

SCOTT ENVIRONMENTAL TECHNOLOGY, INC.

PLUMSTEADVILLE, PENNSYLVANIA 18949

PAGE	PROJECT NO.
1	715171

17683-4

TAXABLE	XXX	FREIGHT	COLLECT		SALES ORDER DATE 11/22/88	CUSTOMER ORDER DATE 11/22/88	DATE REQUIRED O/B 11/29/88
TAX EXEMPT			PREPAID	XXX	CUSTOMER PHONE NUMBER 662-5325		

SOLD TO:
TENNESSEE GAS PIPELINE
5510 S RICE
HOUSTON, TX 77081

ADDRESS INQUIRIES TO:
- ROUTE 611, PLUMSTEADVILLE, PA. 18949, (215) 766-8861
- 2600 CAJON BLVD., SAN BERNARDINO, CALIF. 92411, (714) 887-2571
- 1290 COMBERMERE, TROY, MICH. 48084, (313) 589-2950
- 3714 LAPAS DR., HOUSTON, TX 77023, (713) 644-4820

NH/PB

SHIPPED TO: SAME

TERMS	CUSTOMER CODE	CUSTOMER P.O. / RELEASE NUMBER	CUSTOMER AUTHORITY	DATE SHIPPED	F.O.B. POINT	SHIP VIA
NET 30 DAYS	78120100 78120100	19160-MEP	MIKE PETERSON		SHIPPING POINT	CANNONBALL

ITEM NO.	PRODUCT CODE	QTY. ORDERED	CYL. SIZE	DESCRIPTION	QTY. SHIPPED	QTY. B/O	UNIT PRICE	EXTENSION
1	258116AL	2	AL	FED FUEL 40% HYDROGEN 60% HELIUM (N1) RENTAL ALM-3292 ALM-3286	2		[redacted]	[redacted]
2	1022AL	4	AL	AIR, HCF GRADE ~~THEE~~ THC < 0.1 PPM (N1) RENTAL ALM-3315 ALM-3374 ALM-3359 ALM-3339	4			
3	1813AL	1	AL	NITROGEN, ZERO GRADE (N1) RENTAL AAL-17031	~~2~~ 1			

175

RENTAL: 30 DAYS FREE, $0.18 PER CYLINDER, PER DAY THEREAFTER

TOTAL	[redacted]
FREIGHT	
% TAX	
PAY THIS AMOUNT	

W. Hayward
ORDER APPROVED BY

YOUR PURCHASE ORDER IS ACCEPTED IN ACCORDANCE WITH THE TERMS AND CONDITIONS AS STATED ON THE REVERSE SIDE OF THIS FORM.

NAME PICK UP EMPTIES
SHIP PARTIAL ASAP
COMPANY
ADDRESS

ANALYTICAL REPORT TO BE SENT TO ABOVE

APPENDIX E

VENDOR INTERFERENCE RESPONSE DATA

BECKMAN

BECKMAN INSTRUMENTS, INC.
PROCESS INSTRUMENTS DIVISION
9630 Clarewood, Suite D-1, Houston, Texas 77036 • Telephone: (713) 988-0030 • TWX: 910-881-7275

July 21, 1983

Tennessee Gas Pipeline
5510 South Rice Avenue
Houston, Texas 77081

Attention: Mr. John Wilson

Gentlemen:

Per your request, regarding the interference to the oxygen reading for varing stream composition, we have calculated the interference for high and low extremes as follows:

	Composition 1	Composition 2
CO	450 ppm	550 ppm
SO_2	180 ppm	220 ppm
CO_2	9 per cent	11 per cent
N_2	90.937 percent	88.923 per cent

MS Composition 1			MS Composition 2		
CO	- .354 x .450	.0002	x	.055	.0002
SO_2	- .540 x .018	.0001	x	.022	.0001
CO_2	- .623 x 9.00	.0561	x	11.0	.0685
N_2	- .358 x 90.937	.3256	x	88.923	.3183
		-.382			-.387

MS=Magnetic susseptability

Maximum error composition 1to composition 2 -.005% O_2 due to change in stream composition.

Zeroing with N_2 at zero will give an error of 0.024 (composition 1) and 0.029 (composition 2). These errors are insignificant and below analyzer specified accurage. Streams which have the zero gas as 85 percent or greater of the total are not significantly effected by changes in composition.

If this information is not sufficient to meet your need please contact myself or Mr. Jim Lindeneau at (713)988-0030

Yours very truly,

BECKMAN INSTRUMENTS, INC.

J. Walter Holland

J. Walter Holland
Sales Representative

JWH/sh

CC: Jim Lindeneau

INTERFERENCE RESPONSE TEST

DATE OF TEST: JANUARY 18, 1980

ANALYZER TYPE: 10AR (Range 0-2.5 ppm)

SERIAL NO: 10AR-0 14B-80

TEST GAS TYPE	CONCENTRATION PPM	ANALYZER OUTPUT RESPONSE	% OF SPAN
CO	500	<.1 ppm	<.1%
SO_2	201	<.1 ppm	<.1%
CO_2	10%	<.1 ppm	<.1%
O_2	20.9%	<.1 ppm	<.1%

Per our telecon 9/7
Nancy

APPENDIX F

FUEL GAS ANALYSES

SOUTHERN PETROLEUM LABORATORIES, INC.

CERTIFICATE OF ANALYSIS NUMBER 172707

SAMPLE IDENT.: EMISSIONS 17
430 PSIG @ 54 DEG. F.
01/31/90

DATE: FEBRUARY 02, 1990

INVOICE NO.: 279957

FOR: TENNECO GAS
5510 SOUTH RICE AVENUE
HOUSTON, TEXAS 77081

ATTN: MR. TOM PELLETTE

ASTM D-3246
TOTAL SULFUR

< 1 ppm by wt.

< 0.063 Grains/100 cu. ft.

SOUTHERN PETROLEUM LABORATORIES, INC.

J. C. WENEREY

P.O. BOX 20807 P.O. BOX 31780 1000 RIVERBEND, SUITE F 459 HUGHES DRIVE P.O. BOX 546

TENNESSEE GAS PIPELINE
HOUSTON, TEXAS
CERTIFICATE OF ANALYSIS

02/01/90 10:53:38

Sampler Station ID: 99-0017
Station Location: TGP STA. 17 MECH.SRV

Pipeline District:
Chromatograph ID: 900376

Analysis No.: 137694
Sample Date Removed: 01/31/90
Sampled By: PCM
Sample Type: S

Effective Date: 01/01/90
Analyzed Date: 02/01/90
Analyzed By: TGP
Sample Purpose:

Component	Mol %	GPM
Nitrogen	0.33	
Carbon Dioxide	0.86	
Methane	94.25	
Ethane	3.02	0.807
Propane	0.82	0.226
Iso-butane	0.21	0.069
N-butane	0.19	0.060
Iso-pentane	0.08	0.029
N-pentane	0.06	0.022
Hexanes Plus	0.18	0.080

Specific Gravity:	0.6007
Sat BTU @14.730:	1040
Dry BTU @14.730:	1059
Sample Pres (PSIA):	430
Sample Temp (Deg F):	54
Alarm Code:	0

Sat BTU and Dry BTU are calculated at 14.73 PSIA and 60 DEG F

Remarks: STA. 17 EMISSIONS- RUN 1 10:15 TO 11:00