Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

COMPLIANCE TEST REPORT
DETERMINATION OF NITROGEN OXIDE EMISSIONS

ANNAPOLIS HOSPITAL WESTLAND CENTER
BOILERS 1, 2, & 3
OAKWOOD HOSPITAL

Prepared for

OAKWOOD HOSPITAL
2345 MERRIMAN ROAD
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NOVEMBER 1993

PROJECT NO. 16090.00

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EXECUTIVE SUMMARY

WW Engineering & Science, Inc. (WWES) was retained by Annapolis Hospital Westland Center (AHWC) to conduct nitrogen oxides (NO_x) emissions testing on the exhaust of boiler No. 1, 2, and 3 operating at the Oakwood Hospital facility in Westland, Michigan. The testing was conducted on November 2 and 3, 1993. The results of the emission tests are summarized in the following table:

TABLE *i*.1

AVERAGE EMISSION TEST RESULTS FOR EACH BOILER

Boiler No. 1 Natural Gas	NOx Emissions		
	ppm	(lb/hr)	lb/mmbtu
Tests 1-3	93.8	3.8	0.136

Boiler No. 2 Natural Gas	NOx Emissions		
	ppm	(lb/hr)	lb/mmbtu
Tests 1-3	143.2	5.9	0.264

Boiler No. 3 Natural Gas	NOx Emissions		
	ppm	(lb/hr)	lb/mmbtu
Tests 1-3	122.0	2.1	0.140

1.0 INTRODUCTION

WW Engineering & Science, Inc. (WWES) was retained by Annapolis hospital Westland Center (AHWC) to conduct nitrogen oxides (NO_x) emissions testing on the exhaust of boiler Nos. 1, 2, and 3 located at their Oakwood Hospital facility in Westland, Michigan. Each boiler was tested while firing natural gas operating at normal, full-load conditions to satisfy the requirements of Permit Numbers (C-9111 through C-9113). Triplicate (3) test repetitions were conducted on each boiler, each test was one hour in duration. Monitored emissions for oxides of nitrogen (NO_x) are reported as pounds per million BTUs. In addition, stack temperature(s), oxygen, carbon dioxide, and moisture determination was conducted.

Testing was conducted on November 2 and 3, 1993, by Mr. Bill Byczynski, Senior Air Quality Scientist. Also assisting with the testing was Mr Barry Broering, and Scott Decker, Air Quality Technicians of WWES.

2.0 PROCESS DESCRIPTION

The AHWC Boiler Plant operates two (2) 28.7 million British thermal units per hour (BTU/hr) boilers and one (1) 11.8 million BTU/hr boiler. The boilers can be fired with natural gas as the primary fuel or No.2 fuel oil as a backup. Boiler No. 3 may be operated simultaneously with either boiler No. 1 or No. 2. Boiler No. 1 and 2 may be operated at the same time, but only at a reduced capacity. Exhaust emissions from the boilers are directed to a common exhaust stack.

3.0 SUMMARY OF RESULTS

A summary of test results determined by the compliance testing on boiler Nos. 1, 2 and 3 are presented in Table Nos. 3.0.1, 3.0.2 and 3.0.3. Emissions are reported in parts per million (ppm), pounds per hour (lbs/hr) and pounds per million BTUs (lb/MMBTU). Table No. 3.0.4, 3.0.5, and 3.0.6 presents the auxiliary stack conditions for each boiler, respectively.

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4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 AUXILIARY DATA

4.1.1 Exhaust Gas Parameters

Determinations for velocity pressures, temperature, gas density, and moisture in the exhaust gas stream were performed in accordance with EPA Reference Methods 1-4.

4.1.2 Traverse and Sampling Points

The number and location of traverse points was determined using EPA Reference Method 1. Two sample ports were located at a distance greater than eight (8) diameters downstream and two (2) diameters upstream from any flow disturbance. Six (6) sampling traverse points were selected for each of two (2) sampling ports, giving a total of 12 traverse points.

4.1.3 Velocity Traverse

A velocity traverse was conducted on each boiler's exhaust during each test repetition in accordance with EPA Reference Method 2. An "S" type Pitot tube with an attached "K" type thermocouple was used to conduct the velocity profiles.

4.1.4 Moisture Content

The exhaust-gas moisture content was determined in accordance with EPA Reference Method 4, using an impinger system. The first and second impinger each initially contained 100 ml deionized (DI) water, the third was empty, and the fourth contained silica gel. Each impinger was weighed before and after test repetition to determine the water gain.

4.1.5 Gas Composition

The exhaust gas composition for oxygen, carbon dioxide, and nitrogen was determined in accordance with EPA Reference Method 3. Gas samples were taken during each moisture determination test. An Orsat analyzer was used to determine the gas composition.

4.1.6 Sample Duration and Frequency

Triplicate (3) one hour continuous test repetitions were conducted on each boiler.

4.1.7 Sample Collection

Nitrogen oxide (NO_x) determinations were performed employing EPA Reference Method 7E, using a continuous electrochemical analyzer. The stack gas analyzer, a Pace Environmental Products "PSC-302," is designed to determine the amount of NO_x present in stack gases on a continual basis. Readings are provided as parts per million, by volume, on a dry basis, converted to NO_x emission rate lb/MMBTU based on a dry basis for lbs/scf of NO_x and on a wet basis for $\%CO_2$. The stack gas was collected through a stainless-steel probe, equipped with a filter to remove any particulate present. The gas was cooled and dried using a condenser before entering the analyzer. The analyzer was attached to a data logger and continuous strip-chart recorder during the testing.

4.1.8 Calibrations and Zeroing

The continuous stack gas analyzers were calibrated with EPA protocol gases. Calibration gases of 452, and 91.36 ppm nitrogen oxide were used. All sampling and analytical equipment was calibrated according to the method procedures. Zero gas and three (3) span calibration gases, covering the span of each measurement cell, were used prior to testing. A system bias check was completed, using a mid-level gas, after the initial direct injection calibrations. A baseline of zero was also determined at the same time the calibrations were conducted. At the conclusion of each fuel test, the units were checked for zero and calibration drift.

4.1.9 Data Reduction

The analyzer outputs were recorded on strip chart recorder and on a datalogger. All data reduction was performed using the data from the datalogger. The analyzer output was recorded on a strip-chart recorder and a data logger. Collected data were averaged for each test, and a chart of the data produced through an "Excel" spreadsheet program. The data logger was set to a four-second acquisition interval throughout the test. All data reduction was performed using the data from the data logger. All emission concentrations were reduced using the data collected with the data logger and an "Excel" spreadsheet.

5.0. CONCLUSIONS

As the results show, boiler Nos. 1, 2 and 3 are operating in compliance, with respect to the NO_x maximum allowable permit limit of 0.4 lb/MMBTU.

TABLE 3.0.1
SUMMARY OF NOx EMISSIONS

November 2, 1993

BOILER 1

Oakwood Hospital
Westland, Michigan

Run No.	NOx Concentration (ppm)	NOx Emission Rate		
		(lb/hr)	(lb/MM Btu)	(tons/yr)
1	94.66	3.74	0.134	16.4
2	93.34	3.78	0.133	16.6
3	93.31	3.78	0.141	16.6
Average	**93.77**	**3.77**	**0.136**	**16.5**

ppm: parts per million
lb/hr: pounds per hour
lb/MM Btu: pounds per million British thermal unit
tons/yr: tons per year, based on 365 days

TABLE 3.0.2
SUMMARY OF NOx EMISSIONS

November 3, 1993

BOILER 2

Oakwood Hospital
Westland, Michigan

Run No.	NOx Concentration (ppm)	NOx Emission Rate		
		(lb/hr)	(lb/MM Btu)	(tons/yr)
1	139.13	5.82	0.243	25.5
2	162.85	6.72	0.308	29.4
3	127.67	5.19	0.241	22.7
Average	**143.22**	**5.91**	**0.264**	**25.9**

ppm: parts per million
lb/hr: pounds per hour
lb/MM Btu: pounds per million British thermal unit
tons/yr: tons per year, based on 365 days

TABLE 3.0.3
SUMMARY OF NOx EMISSIONS

November 2, 1993

BOILER 3

Oakwood Hospital
Westland, Michigan

Run No.	NOx Concentration (ppm)	NOx Emission Rate		
		(lb/hr)	(lb/MM Btu)	(tons/yr)
1	119.96	2.15	0.132	9.4
2	123.19	2.18	0.151	9.5
3	122.99	1.96	0.136	8.6
Average	**122.05**	**2.10**	**0.140**	**9.2**

ppm: parts per million
lb/hr: pounds per hour
lb/MM Btu: pounds per million British thermal unit
tons/yr: tons per year, based on 365 days

TABLE 3.0.4
SUMMARY OF STACK GAS CONDITIONS

November 2, 1993

BOILER 1

Oakwood Hospital
Westland, Michigan

Run No.	Velocity (fpm)	Volumetric Flow Rate (acfm)	Volumetric Flow Rate (scfm)	Volumetric Flow Rate (dscfm)	Temperature (F)	Moisture (%)	O2 (%)	CO2 (%)
1	1,425	8,987	6,122	5,602	307.8	8.49	5.0	8.0
2	1,455	9,176	6,282	5,748	304.0	8.49	5.0	8.0
3	1,457	9,187	6,287	5,753	304.3	8.49	5.5	7.5
Average	**1,446**	**9,117**	**6,231**	**5,701**	**305.4**	**8.49**	**5.2**	**7.8**

fpm: feet per minute
acfm: actual cubic feet per minute
scfm: standard cubic feet per minute
dscfm: dry standard cubic feet per minute

TABLE 3.0.5
SUMMARY OF STACK GAS CONDITIONS

November 3, 1993

BOILER 2

Oakwood Hospital
Westland, Michigan

Run No.	Velocity (fpm)	Volumetric Flow Rate (acfm)	Volumetric Flow Rate (scfm)	Volumetric Flow Rate (dscfm)	Temperature (F)	Moisture (%)	O2 (%)	CO2 (%)
1	1,507	9,503	6,505	5,939	304.1	8.70	4.5	6.5
2	1,488	9,381	6,417	5,859	304.7	8.70	4.0	6.0
3	1,465	9,234	6,317	5,767	304.7	8.70	4.5	6.0
Average	**1,487**	**9,373**	**6,413**	**5,855**	**304.5**	**8.70**	**4.3**	**6.2**

fpm: feet per minute
acfm: actual cubic feet per minute
scfm: standard cubic feet per minute
dscfm: dry standard cubic feet per minute

TABLE 3.0.6
SUMMARY OF STACK GAS CONDITIONS

November 2, 1993

BOILER 3

Oakwood Hospital
Westland, Michigan

Run No.	Velocity (fpm)	Volumetric Flow Rate (acfm)	Volumetric Flow Rate (scfm)	Volumetric Flow Rate (dscfm)	Temperature (F)	Moisture (%)	O2 (%)	CO2 (%)
1	658	4,146	2,864	2,546	302.3	11.09	7.0	10.0
2	650	4,099	2,823	2,510	304.7	11.09	6.0	9.0
3	584	3,682	2,539	2,257	303.7	11.09	8.0	10.0
Average	**631**	**3,976**	**2,742**	**2,438**	**303.6**	**11.09**	**7.0**	**9.7**

fpm: feet per minute
acfm: actual cubic feet per minute
scfm: standard cubic feet per minute
dscfm: dry standard cubic feet per minute

Oakwood Hospital
Boiler 1

Sampling Train Calculations				
Client:	Oakwood	Oakwood	Oakwood	
Project No:	16090	16090	16090	
Date:	11/2/93	11/2/93	11/2/93	
Source:	Boiler #1	Boiler #1	Boiler #1	
Test No:	#1	#2	#3	Averages
Pitot Tube Calibration Factor:	0.82	0.82	0.82	
Meter Calibration Factor:	1.01544	1.01544	1.01544	
Stack Length:	0	0	0	
Stack Width:	0	0	0	
Stack Diameter:	34	34	34	
Barometric Pressure, inches mercury:	29.55	29.55	29.55	
Static Pressure in Stack, Inches Water:	-0.31	-0.32	-0.3	
Duration of Sample, minutes	40	40	40	
Meter Leak Rate:	0	0.01	0.01	
Meter Start Volume:	800.01	800.01	800.01	
Meter Final Volume:	828.14	828.14	828.14	
Average Meter Pressure, Inches Water:	1.61	1.61	1.61	
Average Meter Temperature, degrees F:	69.75	69.75	69.75	
Average Sqrt. Velocity Pressure:	0.35537	0.36374	0.36374	0.4
Stack Gas Temperature, degrees F:	307.8	304	304.3	305.4
Percent Carbon Dioxide:	8	8	7.5	7.83
Percent Oxygen:	5	5	5.5	5.17
Percent Carbon Monoxide:	0	0	0	1
Liquid Volume Collected, milliliters:	55.5	55.5	55.5	

Sample Train Calculations				
Meter Volume, Actual:	28.13	28.13	28.13	
Meter Volume, STP:	28.337	28.337	28.337	
Volume of Water Vapor Condensed:	2.631	2.631	2.631	
Total Gas Sampled:	30.968	30.968	30.968	
Percent Moisture:	8.49	8.49	8.49	8.49
Area of Stack, Square Feet:	6.31	6.31	6.31	
Excess Air at Test Location:	27.83	27.83	31.49	
Density Dry at STP:	0.0762	0.0762	0.0761	
Density Wet at STP:	0.0737	0.0737	0.0736	
Density Wet at Stack Cond:	0.0502	0.0505	0.0503	
Molecular Weight, lb/lb-Mole	29.49	29.49	29.43	
Velocity and Flow Calculations				
Average Stack Gas Velocity FPM:	1425.4	1455.4	1457.1	1446.0
Stack Gas Flow Rate, ACFM:	8987.3	9176.3	9186.7	9116.8
Stack Gas Velocity, SCFM:	6122.4	6282.1	6287.1	6230.6
Stack Gas Velocity, DSCFM:	5602.3	5748.5	5753.0	5701.3
Pounds of Gas Sampled, Dry	2.160	2.160	2.155	
Pounds of Gas Sampled, Wet	2.282	2.282	2.278	

Oakwood Hospital
Boiler 1

NOx Emission Data Calculated Using %CO2 and a Fuel Factor of 1,040 scf/MM Btu				
NOx Concentration, ppm	94.66	93.34	93.31	93.77
NOx Emission Rate, lbs/hr	3.74	3.78	3.78	3.77
NOx Conversion to Lbs/scf	1.130E-05	1.114E-05	1.114E-05	
NOx Emission Rate, lbs/MM Btu	0.134	0.133	0.141	0.136
NOx Emission Rate, tons/yr	16.4	16.6	16.6	16.5

Conversion from ppm NOx to lbs/scf - multiplied ppm NOx by 1.194E-07

The conversion from NOx (lbs/scf) to NOx emission rate lbs/MM Btu
is based on a dry basis for lbs/scf of NOx and on a wet basis for (% CO2).

Oakwood Hospital
Boiler 2

Sampling Train Calculations				
Client:	Oakwood	Oakwood	Oakwood	
Project No:	16090	16090	16090	
Date:	11/3/93	11/3/93	11/3/93	
Source:	Boiler #2	Boiler #2	Boiler #2	
Test No:	#1	#2	#3	Averages
Pitot Tube Calibration Factor:	0.82	0.82	0.82	
Meter Calibration Factor:	1.01544	1.01544	1.01544	
Stack Length:	0	0	0	
Stack Width:	0	0	0	
Stack Diameter:	34	34	34	
Barometric Pressure, inches mercury:	29.55	29.55	29.55	
Static Pressure in Stack, Inches Water:	-0.29	-0.28	-0.28	
Duration of Sample, minutes	40	40	40	
Meter Leak Rate:	0	0.01	0.01	
Meter Start Volume:	828.14	828.14	828.14	
Meter Final Volume:	856.22	856.22	856.22	
Average Meter Pressure, Inches Water:	1.61	1.61	1.61	
Average Meter Temperature, degrees F:	76	76	76	
Average Sqrt. Velocity Pressure:	0.37494	0.36942	0.36374	0.4
Stack Gas Temperature, degrees F:	304.1	304.7	304.7	304.5
Percent Carbon Dioxide:	6.5	6	6	6.17
Percent Oxygen:	4.5	4	4.5	4.33
Percent Carbon Monoxide:	0	0	0	1
Liquid Volume Collected, milliliters:	56.2	56.2	56.2	

Sample Train Calculations				
Meter Volume, Actual:	28.08	28.08	28.08	
Meter Volume, STP:	27.957	27.957	27.957	
Volume of Water Vapor Condensed:	2.664	2.664	2.664	
Total Gas Sampled:	30.621	30.621	30.621	
Percent Moisture:	8.70	8.70	8.70	8.70
Area of Stack, Square Feet:	6.31	6.31	6.31	
Excess Air at Test Location:	23.69	20.24	23.53	
Density Dry at STP:	0.0755	0.0753	0.0753	
Density Wet at STP:	0.0730	0.0728	0.0728	
Density Wet at Stack Cond:	0.0500	0.0498	0.0498	
Molecular Weight, lb/lb-Mole	29.23	29.13	29.15	
Velocity and Flow Calculations				
Average Stack Gas Velocity FPM:	1507.2	1487.9	1464.6	1486.6
Stack Gas Flow Rate, ACFM:	9502.6	9381.4	9234.2	9372.7
Stack Gas Velocity, SCFM:	6505.2	6417.3	6316.6	6413.0
Stack Gas Velocity, DSCFM:	5939.3	5859.0	5767.1	5855.1
Pounds of Gas Sampled, Dry	2.112	2.105	2.106	
Pounds of Gas Sampled, Wet	2.236	2.229	2.230	

Oakwood Hospital
Boiler 2

NOx Emission Data Calculated Using %CO2 and a Fuel Factor of 1,040 scf/MM Btu				
NOx Concentration, ppm	139.13	162.85	127.67	143.2
NOx Emission Rate, lbs/hr	5.82	6.72	5.19	5.9
NOx Conversion to Lbs/scf	1.661E-05	1.944E-05	1.524E-05	
NOx Emission Rate, lbs/MM Btu	0.243	0.308	0.241	0.264
NOx Emission Rate, tons/yr	25.5	29.4	22.7	25.9

Conversion from ppm NOx to lbs/scf - multiplied ppm NOx by 1.194E-07

The conversion from NOx (lbs/scf) to NOx emission rate lbs/MM Btu
is based on a dry basis for lbs/scf of NOx and on a wet basis for (% CO2).

Oakwood Hospital
Boiler 3

Sampling Train Calculations				
Client:	Oakwood	Oakwood	Oakwood	
Project No:	16090	16090	16090	
Date:	11/2/93	11/2/93	11/2/93	
Source:	Boiler #3	Boiler #3	Boiler #3	
Test No:	#1	#2	#3	Averages
Pitot Tube Calibration Factor:	0.82	0.82	0.82	
Meter Calibration Factor:	1.01544	1.01544	1.01544	
Stack Length:	0	0	0	
Stack Width:	0	0	0	
Stack Diameter:	34	34	34	
Barometric Pressure, inches mercury:	29.75	29.75	29.75	
Static Pressure in Stack, Inches Water:	-0.34	-0.28	-0.28	
Duration of Sample, minutes	40	40	40	
Meter Leak Rate:	0	0.01	0.01	
Meter Start Volume:	771.96	771.96	771.96	
Meter Final Volume:	799.92	799.92	799.92	
Average Meter Pressure, Inches Water:	1.61	1.61	1.61	
Average Meter Temperature, degrees F:	70.62	70.62	70.62	
Average Sqrt. Velocity Pressure:	0.16526	0.16261	0.14672	0.2
Stack Gas Temperature, degrees F:	302.3	304.7	303.7	303.6
Percent Carbon Dioxide:	10	9	10	9.67
Percent Oxygen:	7	6	8	7.00
Percent Carbon Monoxide:	0	0	0	
Liquid Volume Collected, milliliters:	74.5	74.5	74.5	

Sample Train Calculations				
Meter Volume, Actual:	27.96	27.96	27.96	
Meter Volume, STP:	28.310	28.310	28.310	
Volume of Water Vapor Condensed:	3.531	3.531	3.531	
Total Gas Sampled:	31.841	31.841	31.841	
Percent Moisture:	11.09	11.09	11.09	11.09
Area of Stack, Square Feet:	6.31	6.31	6.31	
Excess Air at Test Location:	46.94	36.50	58.62	
Density Dry at STP:	0.0773	0.0767	0.0774	
Density Wet at STP:	0.0738	0.0734	0.0739	
Density Wet at Stack Cond:	0.0510	0.0505	0.0510	
Molecular Weight, lb/lb-Mole	29.89	29.69	29.93	
Velocity and Flow Calculations				
Average Stack Gas Velocity FPM:	657.6	650.1	584.0	630.6
Stack Gas Flow Rate, ACFM:	4146.4	4098.8	3682.1	3975.8
Stack Gas Velocity, SCFM:	2864.1	2822.8	2539.1	2742.0
Stack Gas Velocity, DSCFM:	2546.5	2509.7	2257.5	2437.9
Pounds of Gas Sampled, Dry	2.187	2.172	2.190	
Pounds of Gas Sampled, Wet	2.351	2.337	2.354	

Oakwood Hospital
Boiler 3

NOx Emission Data Calculated Using %CO2 and a Fuel Factor of 1,040 scf/MM Btu				
NOx Concentration, ppm	119.96	123.19	122.99	122.0
NOx Emission Rate, lbs/hr	2.15	2.18	1.96	2.1
NOx Conversion to Lbs/scf	1.432E-05	1.471E-05	1.469E-05	
NOx Emission Rate, lbs/MM Btu	0.132	0.151	0.136	0.140
NOx Emission Rate, tons/yr	9.4	9.5	8.6	9.2

Conversion from ppm NOx to lbs/scf - multiplied ppm NOx by 1.194E-07

The conversion from NOx (lbs/scf) to NOx emission rate lbs/MM Btu
is based on a dry basis for lbs/scf of NOx and on a wet basis for (% CO2).

Oakwood Hospital
Example Calculations

	A	C
1	**Sampling Train Calculations**	
2	Client:	Oakwood
3	Project No:	16090
4	Date:	34275
5	Source:	Boiler #1
6	Test No:	#1
7	Pitot Tube Calibration Factor:	0.82
8	Meter Calibration Factor:	1.01544
9	Stack Length:	0
10	Stack Width:	0
11	Stack Diameter:	34
12	Barometric Pressure, inches mercury:	29.55
13	Static Pressure in Stack, Inches Water:	-0.31
14	Duration of Sample, minutes	40
15	Meter Leak Rate:	0
16	Meter Start Volume:	800.01
17	Meter Final Volume:	828.14
18	Average Meter Pressure, Inches Water:	1.61
19	Average Meter Temperature, degrees F:	69.75
20	Average Sqrt. Velocity Pressure:	0.35537
21	Stack Gas Temperature, degrees F:	307.8
22	Percent Carbon Dioxide:	8
23	Percent Oxygen:	5
24	Percent Carbon Monoxide:	0
25	Liquid Volume Collected, milliliters:	55.5
26		
27		
28	**Sample Train Calculations**	
29	**Meter Volume, Actual:**	=C17-C16
30	**Meter Volume, STP:**	=((C18/13.6+C12)/29.92)*(530/(C19+460))*C8*C29
31	**Volume of Water Vapor Condensed:**	=0.0474*C25
32	**Total Gas Sampled:**	=C30+C31
33	**Percent Moisture:**	=(C31/C32)*100
34	**Area of Stack, Square Feet:**	=IF(C9>0,((C9*C10)/144),(PI()*((C11/2)^2)/144))
35	**Excess Air at Test Location:**	=((C23-(0.5*C24))/(0.264*(100-C22-C23-C24)-C23+(0.5*C24)))*100
36	**Density Dry at STP:**	=((0.0827*C23)+(0.1137*C22)+((100-C22-C23)*0.0724))/100
37	**Density Wet at STP:**	=(C36)*((100-C33)/100)+0.0465*(C33/100)
38	**Density Wet at Stack Cond:**	=((530/(C21+460))*(((C12+(C13/13.6))/29.92))*C37
39	**Molecular Weight, lb/lb-Mole**	=C36*386.9
40	**Velocity and Flow Calculations**	
41	**Average Stack Gas Velocity FPM:**	=(1096/(SQRT(C38)))*C20*C7
42	**Stack Gas Flow Rate, ACFM:**	=C41*C34
43	**Stack Gas Velocity, SCFM:**	=(((C13/13.9)+C12)/29.92)*(530/(C21+460))*C42
44	**Stack Gas Velocity, DSCFM:**	=((100-C33)/100)*C43
45	**Pounds of Gas Sampled, Dry**	=C36*C30
46	**Pounds of Gas Sampled, Wet**	=C32*C37
47		
48	**NOx Emission Data Calculated Using %CO2 and a Fuel Factor of 1,040 scf/MM Btu**	
49	**NOx Concentration, ppm**	94.66
50	**NOx Emission Rate, lbs/hr**	=C44*(C49*(46/24.45))*0.0000000624*60
51	**NOx Conversion to Lbs/scf**	=(C49*0.0000001194)
52	**NOx Emission Rate, lbs/MM Btu**	=C51*(1-C33/100)*(1040)*(100/C22)
53	**NOx Emission Rate, tons/yr**	=(((C50*24)*365)/2000)
54		
55	Conversion from ppm NOx to lbs/scf - multiplied ppm NOx by	
56		
57	The conversion from NOx (lbs/scf) to NOx emission rate lbs/MM Btu	
58	is based on a dry basis for lbs/scf of NOx and on a wet basis for (% CO2).	

WW Engineering & Science, Inc.
Environmental Services Division

TRAVERSE POINT LOCATION DATA
CIRCULAR DUCTS

Client: Oakwood Hosp.
Project Number: 16090
Site: Outlet Boiler

Date: 11-2-93
Source: Boiler Stack
Calculated by: S.O.

Inside of far wall to outside of nipple: 52"

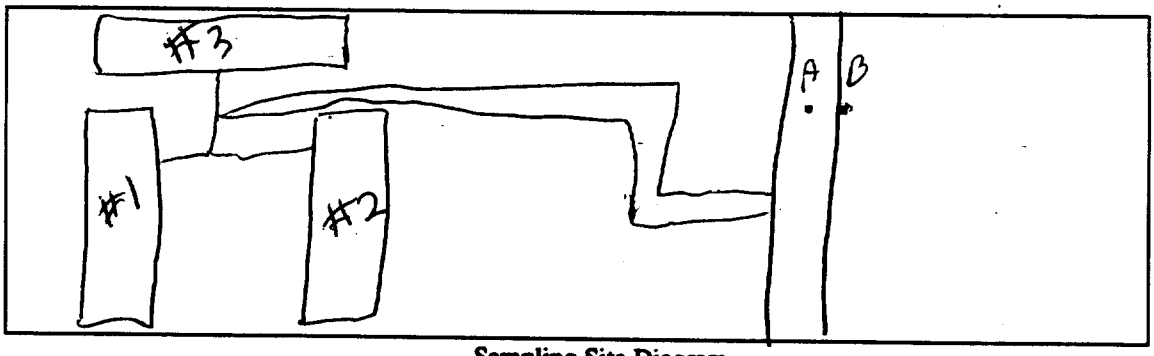
Inside of near wall to outside of nipple: 18"

Stack Diameter: 34"

Nearest disturbance upstream of port:

Nearest disturbance downstream of port:

Traverse Point Number	Fraction of Stack Diameter (Y)	Stack Diameter (Ø)	Y x Ø	Nipple Depth	Traverse Point Location
1					19.44
2					32.96
3					28.06
4					41.93
5					42.03
6					50.50



Sampling Site Diagram

c:\sheets\crcpnt.ds ver 05/25/92

MOISTURE AND MOLECULAR WEIGHT DATA

Client: Oakwood Hosp
Project Number: 16090
Date: 11-3-93

Source: Boiler # 1
Site: outlet
Run Number: 1

Staff: S.D. B.B.
Initials: S.D.
Reviewed by: _____

MOISTURE DATA

	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Container 7
Final Weight or Volume	50mls	884.5					
Tare Weight or Volume	MT	879.0					
Gain	50mls	5.5					
Contents (ie silica Gel)	Flask	5.6.					

Total Gain: 55.5

MOLECULAR WEIGHT DATA

Analysis Method: _____ Analysis Date: _____ Sample Type: _____

Run Number	Oxygen	Carbon Dioxide	Carbon Monoxide
1			
2			
3			
Average			

80% Load

Boiler #1

WW Engineering & Science
A Summit Company
Environmental Services

Emission Testing Data

Client: Oakwood Hosp.
Project Number: 16090
Source: Boiler #1 [redacted]
Sampling Site: outlet
Test Number: 1
Sample Type: m-4

Pitot Tube I.D. Type Cp: .82
Probe Length: NA
Meter Box Number: m-4
Meter Y Factor: 1.01544
Meter K_{iso}: 1387.444
Meter Factor: NA
Meter ΔH: 1.61

Barometric Pressure: 29.55
Static Pressure: -.31
Estimated Moisture: NA
Nozzle Diameter: NA
Initial Leak Check: .00 @ 10" Hg
Final Leak Check: .00 @ 5" Hg

Date: 11-3-93 Page 1 of 1
Staff: S.P. B.B.
Stack Size: 34"
Orsat Leak Check Pre: — Post: —
Pitot Leak Check Pre: — Post: —
Filter Number (s): NA

Sample Point/Port	Test Time (Minutes)	Time (24 Hours)	Meter Volume	Pitot Tube ΔP (in. H_2O)	Meter Pressure ΔH (in. H_2O)	Pump Vacuum (in. Hg)	Meter Temperature Inlet (°F)	Meter Temperature Outlet (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter Temp (°F)	Impinger Temp (°F)
	0	0900	800.01									
	10	0910	807.12	NA	1.61	0	66	66	NA	NA	NA	50
	20	0920	813.85	↓	↓	0	66	66	↓	↓	↓	52
	30	0930	820.98	↓	↓	0	68	74	↓	↓	↓	58
	40	094	828.14	↓	↓	0	73	79	↓	↓	↓	60

Averages: 28.13 $\sqrt{\Delta P}$ ΔH: 1.61 T_m: 69.75 T_s:

Checked By: _____ Reviewed By: [illegible]

0037

Boiler #1

WW Engineering & Science
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Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp
Date: 11-3-93
Project Number: 16090
Barometric Pressure: 29.55
Source I.D.: outlet Boiler Stack
Pitot Leak Check Pre: ✓
Sampling Site: outlet
Pitor Leak Check Post: ✓
Site Location (city): Westland, MI
Static Pressure: -.31
Pitot Tube I.D.: Stype Coefficient .82
Stack Diameter: 34" "H2O
Staff: S.O. B.B
Run #.: 1
Wet Bulb Temp.: NA

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.13	309	1	.13	300
2	.14	310	2	.14	305
3	.15	314	3	.14	309
4	.12	309	4	.12	314
5	.12	310	5	.12	316
6	.10	300	6	.11	300

%O2: 5% %CO2: 8% Average $\sqrt{\overline{\Delta P}}$ .35537 ✓ Average Stack Temp: 307.8 °F
$\overline{\Delta P}$ .12667 ✓

Data Reduction: _____ Checked: BH Reviewed: _____

Boiler # 2

WW Engineering & Science
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Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: outlet Boiler Stack
Sampling Site: outlet
Site Location (city): Westland, MI
Pitot Tube I.D.: Type Coefficient .82
Staff: S.D. B.B.
Wet Bulb Temp.: NA

Date: 11-3-93
Barometric Pressure: 29.55
Pitot Leak Check Pre: ✓
Pitor Leak Check Post: ✓
Static Pressure: -.32
Stack Diameter: 34" "H2O
Run #.: 2

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.16	300	1	.14	305
2	.14	309	2	.14	306
3	.14	309	3	.13	307
4	.13	305	4	.14	304
5	.12	301	5	.12	302
6	.12	300	6	.12	300

%O2: 5% %CO2: 8% Average $\overline{\sqrt{\Delta P}}$ .36374 ✓ Average Stack Temp: 304.0 ✓ °F
$\overline{\Delta P}$ .13250 ✓

Data Reduction: _____ Checked: BA Reviewed: _____

Boiler #1

WW Engineering & Science
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Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: Boiler #1
Sampling Site: Boiler Stack outlet
Site Location (city): Westland, MI
Pitot Tube I.D.: Type Coefficient .82
Staff: SD. B.B.
Wet Bulb Temp.: NA

Date: 11-3-93
Barometric Pressure: 29.55
Pitot Leak Check Pre: ✓
Pitor Leak Check Post: ✓
Static Pressure: -.30
Stack Diameter: 34" "H2O
Run #.: 3.

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.14	298	1	.13	300
2	.15	301	2	.13	307
3	.15	304	3	.14	310
4	.13	310	4	.13	308
5	.12	304	5	.13	307
6	.12	300	6	.12	300

%O2: 5.5% %CO2: 7.5% Average $\sqrt{\Delta P}$ .36374 ✓ Average Stack Temp: 304.3 °F
$\overline{\Delta P}$ .13250 ✓

Data Reduction: _____ Checked: BA Reviewed: _____

MOISTURE AND MOLECULAR WEIGHT DATA

Client: Oakwood Hosp.
Project Number: 16090
Date: 11-3-93

Source: Boiler #2
Site: outlet
Run Number: 1

Staff: SO. B.B
Initials: S.O
Reviewed by:

MOISTURE DATA

	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Container 7
Final Weight or Volume	50mls	883.6					
Tare Weight or Volume	MT	877.4					
Gain	So	6.2					
Contents (ie silica Gel)	Flask	5.6.					

Total Gain: 56.2

MOLECULAR WEIGHT DATA

Analysis Method: _____ Analysis Date: _____ Sample Type: _____

Run Number	Oxygen	Carbon Dioxide	Carbon Monoxide
1			
2			
3			
Average			

Boiler #2

WW Engineering & Science
A Summit Company
Environmental Services

Emission Testing Data

Client: Oakwood Hosp
Project Number: 16090
Source: Boiler #2
Sampling Site: outlet Boiler Stack
Test Number: 1
Sample Type: m-4

Pitot Tube I.D. Stype. Cp: .82
Probe Length: NA
Meter Box Number: M-4
Meter Y Factor: 1.01544
Meter K_{iso}: 1387.444
Meter Factor: NA
Meter ΔH: 1.61

Barometric Pressure: 29.55
Static Pressure: -.29
Estimated Moisture: NA
Nozzle Diameter: NA
Initial Leak Check: .00 @ 10" Hg
Final Leak Check: .00 @ 5" Hg

Date: 11-3-93 Page 1 of 1
Staff: S.O. B.B.
Stack Size: 34"
Orsat Leak Check Pre: — Post: —
Pitot Leak Check Pre: — Post: —
Filter Number (s): NA

Sample Point/Port	Test Time (Minutes)	Time (24 Hours)	Meter Volume	Pitot Tube ΔP (in. H_2O)	Meter Pressure ΔH (in. H_2O)	Pump Vacuum (in. Hg)	Meter Temperature Inlet (°F)	Meter Temperature Outlet (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter Temp (°F)	Impinger Temp (°F)
	0	1500	828.14									
	10	1510	835.37	NA	1.61	0	71	71	NA	NA	NA	50
	20	1520	842.20			0	71	77				53
	30	1530	848.80			0	74	84				54
	40	1540	856.22			0	77	83				55
				✓	✓				✓	✓	✓	

Averages: 28.08 $\overline{\sqrt{\Delta P}}$ ΔH: 1.61 T_m: 76.00 T_s:
$\overline{\Delta P}$

Checked By: _____ Reviewed By: NA

0037

WW Engineering & Science
A Summit Company

Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: Boiler #2
Sampling Site: Boiler Stack outlet
Site Location (city): Westland, MI
Pitot Tube I.D.: Stype Coefficient .82
Staff: S.O. B.B.
Wet Bulb Temp.: NA

Date: 11-3-93
Barometric Pressure: 29.55
Pitot Leak Check Pre: ✓
Pitor Leak Check Post: ✓
Static Pressure: -.29
Stack Diameter: 34' "H2O
Run #.: 1

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.12	300	1	.13	309
2	.14	300	2	.14	310
3	.15	301	3	.14	311
4	.16	300	4	.15	309
5	.15	300	5	.15	309
6	.14	300	6	.12	300
					304.1

%O2: 4.5% %CO2: 6.5% Average $\overline{\sqrt{\Delta P}}$ .37494 ✓ Average Stack Temp: 304.08 °F ✓
$\overline{\Delta P}$ .14083 ✓

Data Reduction: _____ Checked: BA Reviewed: _____

WW Engineering & Science
A Summit Company

Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: Boiler #2 ~~Stack outlet~~
Sampling Site: Boiler stack outlet
Site Location (city): Westland, MI
Pitot Tube I.D.: Type Coefficient .82
Staff: S.P. B.B.
Wet Bulb Temp.: NA

Date: 11-3-93
Barometric Pressure: 29.55
Pitot Leak Check Pre: —
Pitor Leak Check Post: —
Static Pressure: -.28 "H2O
Stack Diameter: 34"
Run #.: 2

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.12	300	1	.13	297
2	.14	309	2	.14	300
3	.14	308	3	.14	309
4	.16	309	4	.14	309
5	.14	310	5	.14	305
6	.13	300	6	.12	300

%O2: 4.0 %CO2: 6.0 Average $\sqrt{\overline{\Delta P}}$ .36942 ✓ Average Stack Temp: 304.8 °F ✓
$\overline{\Delta P}$ .13667 ✓

Data Reduction: _____ Checked: _____ Reviewed: _____

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Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: Boiler #2
Sampling Site: Boiler Stack outlet
Site Location (city): Westland, MI
Pitot Tube I.D.: S type Coefficient .82
Staff: S.O. B.B
Wet Bulb Temp.: NA

Date: 11-3-93
Barometric Pressure: 29.55
Pitot Leak Check Pre: —
Pitor Leak Check Post: —
Static Pressure: -.28 "H2O
Stack Diameter: 34"
Run #.: 3

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.12	300	1	.12	300
2	.14	305	2	.14	302
3	.15	309	3	.14	305
4	.14	310	4	.15	309
5	.13	304	5	.13	308
6	.13	304	6	.12	300

$\%O_2$: 4.5 $\%CO_2$: 6.0 Average $\overline{\sqrt{\Delta P}}$ .36601 ✓ Average Stack Temp: 304.6 °F ✓
$\overline{\Delta P}$ .13417 ✓ 304.7

Data Reduction: _____ Checked: BH Reviewed: _____

Boiler #3

WW Engineering & Science
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Environmental Services

Emission Testing Data

Client: Oakwood Hosp
Project Number: 16090
Source: outlet Boiler
Sampling Site: outlet
Test Number: 1
Sample Type: M-4

Pitot Tube I.D. Stype Cp: .82
Probe Length: NA
Meter Box Number: M-4
Meter Y Factor: 1.01544
Meter Kiso: 1387.444
Meter Factor: NA
Meter ΔH: 1.61

Barometric Pressure: 29.25
Static Pressure: -3.4
Estimated Moisture: NA
Nozzle Diameter: NA
Initial Leak Check: .01@10"Hg
Final Leak Check: .00@5"Hg

Date: 11-2-93 Page 1 of 1
Staff: S.O. B.B.
Stack Size: 34"
Orsat Leak Check Pre: ✓ Post: —
Pitot Leak Check Pre: — Post: —
Filter Number (s): NA

Sample Point/Port	Test Time (Minutes)	Time (24 Hours)	Meter Volume	Pitot Tube ΔP (in. H_2O)	Meter Pressure ΔH (in. H_2O)	Pump Vacuum (in. Hg)	Meter Temperature Inlet (°F)	Meter Temperature Outlet (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter Temp (°F)	Impinger Temp (°F)
	0	1840	771.96									
	10	1850	779.04	NA	1.61	0	67	67	NA	NA	NA	49
	20	1900	786.12	↓	↓	0	68	70	↓	↓	↓	50
	30	1910	793.07			0	69	73				52
	40	1920	799.92			0	73	78				53
												54

Averages: 0.1 . 27.96 $\frac{\sqrt{\Delta P}}{\Delta P}$ ΔH: 1.61 T_m: 70.62 T_s:

Checked By: _____

Reviewed By: [signature]

MOISTURE AND MOLECULAR WEIGHT DATA

Client: Oakwood Hosp.
Project Number: 16090
Date: 11-2-93

Source: Boiler #3
Site: outlet
Run Number: 1

Staff: S.O.
Initials: I
Reviewed by:

MOISTURE DATA

	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Container 7
Final Weight or Volume	70 mls	889.5					
Tare Weight or Volume	0	885.0					
Gain	70	4.5					
Contents (ie silica Gel)	Flask	5.6.					

Total Gain: 74.5

MOLECULAR WEIGHT DATA

Analysis Method: _____ Analysis Date: _____ Sample Type: _____

Run Number	Oxygen	Carbon Dioxide	Carbon Monoxide
1			
2			
3			
Average			

Boiler #3
~~Fuel oil~~

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Environmental Services

314.

Velocity Data Sheet

Client: Oakwood Hosp
Project Number: 16090
Source I.D.: Boiler Stack
Sampling Site: outlet Boiler Stack
Site Location (city): Westland MI
Pitot Tube I.D.: S Type Coefficient .82
Staff: S.D. B.B.
Wet Bulb Temp.: N/A

Date: 11-2-93
Barometric Pressure: 29.75
Pitot Leak Check Pre: —
Pitor Leak Check Post: —
Static Pressure: -.34
Stack Diameter: 34" "H2O
Run #.: 1

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.02	300	1	.02	302
2	.03	308	2	.03	302
3	.03	310	3	.03	309
4	.02	309	4	.03	309
5	.03	300	5	.03	300
6	.03	279	6	.03	300

%O2: 7% %CO2: 10% Average $\overline{\sqrt{\Delta P}}$ .16526 Average Stack Temp: 302.3°F
$\overline{\Delta P}$ .02750

Data Reduction: _____ Checked: BA Reviewed: _____

0035

Boiler #3

WW Engineering & Science
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Velocity Data Sheet

Client: Oakwood Hosp
Project Number: 16090
Source I.D.: Boiler Stack
Sampling Site: outlet
Site Location (city): Westland MI
Pitot Tube I.D.: S type Coefficient .82
Staff: S.O. B.B.
Wet Bulb Temp.: NA

Date: 11-2-93
Barometric Pressure: 29.75
Pitot Leak Check Pre: ✓
Pitor Leak Check Post: ✓
Static Pressure: -.35
Stack Diameter: 34" "H2O
Run #.: 2

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.02	259	1	.02	300
2	.02	300	2	.03	305
3	.03	302	3	.03	310
4	.03	305	4	.03	309
5	.03	304	5	.03	309
6	.03	300	6	.02	257

%O_2: 6% %CO_2: 9% Average $\overline{\sqrt{\Delta P}}$ .16261 ✓ Average Stack Temp: 296.86 °F
$\overline{\Delta P}$ .02667 ✓

Data Reduction: _____ Checked: BH Reviewed: _____

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Boiler #3

Environmental Services

Velocity Data Sheet

Client: Oakwood Hosp.
Project Number: 16090
Source I.D.: Boiler stack
Sampling Site: outlet
Site Location (city): Westland, MT
Pitot Tube I.D.: Stype. Coefficient .82
Staff: S.D. B.B.
Wet Bulb Temp.: NA

Date: 11-2-93
Barometric Pressure: 29.75
Pitot Leak Check Pre: ✓
Pitor Leak Check Post: ✓
Static Pressure: -.36 "H2O
Stack Diameter: 34"
Run #.: 3

Port/Point	Pitot Tube ΔP	Stack Temperature (°F)	Port/Point	Pitot Tube ΔP	Stack Temperature (°F)
1	.02	300	1	.02	300
2	.02	309	2	.03	289
3	.03	310	3	.02	309
4	.02	309	4	.02	310
5	.02	308	5	.02	300
6	.02	300	6	.02	300

$\%O_2$: 8% $\%CO_2$: 10% Average $\overline{\sqrt{\Delta P}}$ .14672 ✓ Average Stack Temp: 303.7 °F
$\overline{\Delta P}$ .02167 ✓

Data Reduction: _____ Checked: BN Reviewed: _____

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

Average: 94.66

24 Hour	NOx ppm
850	96.6
850	96.3
850	96.3
850	96.3
850	96.3
850	96.3
850	96.3
850	96.3
851	96.3
851	96.3
851	96.3
851	96.3
851	96.3
851	96.3
851	96.3
851	96.8
852	96.9
852	96.9
852	96.9
852	97.3
852	97.3
852	97.4
852	97.3
852	96.9
853	97.1
853	97.3
853	97.3
853	97.3
853	97
853	97
853	97.3
853	97.3
854	97.3
854	97.2
854	96.8
854	96.9
854	97.1
854	97.2
854	96.8
854	96.4
855	96.6
855	96.8
855	96.8
855	96.4
855	96.3
855	96.3

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

855	96.3
855	96.8
856	96.5
856	96.2
856	95.7
856	96.3
856	96.6
856	96.7
856	96.3
856	96.3
857	96.3
857	96.4
857	96.8
857	96.4
857	96.3
857	96.3
857	96.3
857	96.3
858	96.3
858	96.2
858	95.7
858	95.8
858	95.8
858	95.8
858	95.7
858	95.7
859	95.8
859	95.7
859	95.7
859	95.8
859	96.1
859	96.2
859	95.8
859	95.8
900	95.8
900	95.8
900	95.8
900	95.8
900	95.8
900	95.7
900	95.8
900	95.8
901	95.7
901	95.7
901	95.7
901	95.8
901	95.8
901	95.8
901	95.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

901	95.8
902	95.8
902	96
902	96.3
902	95.8
902	95.8
902	95.8
902	95.8
902	96.3
903	95.9
903	95.6
903	95.3
903	95.8
903	95.7
903	95.8
903	95.8
903	95.8
904	95.8
904	95.8
904	95.8
904	95.8
904	95.8
904	95.6
904	95.3
904	95.2
905	95.3
905	95.3
905	95.3
905	95.3
905	95.3
905	95.5
905	95.8
905	95.8
906	95.8
906	95.6
906	95.2
906	95.3
906	95.6
906	95.6
906	95.3
906	95.2
907	95.6
907	95.8
907	95.7
907	95.8
907	95.4
907	95.4
907	95.8
907	95.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

908	95.8
908	95.6
908	95.3
908	95.8
908	95.7
908	95.7
908	95.7
908	95.2
909	95.3
909	95.2
909	95.2
909	95.3
909	94.9
909	94.8
909	94.8
909	94.8
910	94.4
910	94.3
910	94.3
910	94.3
910	94.3
910	94.3
910	94.3
910	94.3
911	94.3
911	94.3
911	94.3
911	94.3
911	94.3
911	94.3
911	94.3
911	94.3
912	94.3
912	94.5
912	94.7
912	94.3
912	94.3
912	94.5
912	94.8
912	94.8
913	94.8
913	94.8
913	94.8
913	94.8
913	95.2
913	95.2
913	95.2
913	94.8
914	94.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

914	95
914	95.2
914	95.2
914	94.9
914	94.8
914	94.8
914	94.8
915	94.8
915	94.8
915	94.8
915	94.8
915	94.4
915	94.3
915	94.3
915	94.3
916	94.3
916	94.3
916	94.4
916	94.8
916	94.8
916	94.8
916	94.7
916	94.3
917	94.7
917	94.8
917	94.8
917	94.8
917	94.4
917	94.3
917	94.3
917	94.3
918	94.3
918	94.3
918	94.3
918	94.3
918	94.3
918	94
918	93.8
918	93.8
919	93.8
919	93.8
919	93.8
919	93.8
919	93.8
919	93.8
919	93.8
919	93.8
920	93.8
920	93.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

920	93.8
920	93.8
920	93.8
920	94.1
920	94.3
920	94.3
921	94.3
921	94
921	93.9
921	94.3
921	94.3
921	94.3
921	94.3
921	94.3
922	94.3
922	94.3
922	94.3
922	94.3
922	94.3
922	94.3
922	94.3
922	94.3
923	94.3
923	94.3
923	94.3
923	94.3
923	93.8
923	93.8
923	93.8
923	93.8
924	93.8
924	93.8
924	93.8
924	93.8
924	94.2
924	94.3
924	94.2
924	93.8
925	94.3
925	94.3
925	94.3
925	94.3
925	94.3
925	94.3
925	94.3
925	94.3
926	94.3
926	94.3
926	94.3

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

926	94.3
926	94.3
926	94.3
926	94.3
926	94.3
927	93.8
927	93.8
927	93.8
927	93.8
927	93.8
927	93.8
927	93.8
927	93.8
928	93.8
928	94.1
928	94.1
928	93.8
928	93.8
928	94.1
928	94.3
928	94.3
929	94.3
929	94
929	93.9
929	94.3
929	94.3
929	94.3
929	94.3
929	94.3
930	94.3
930	94.3
930	94.3
930	94.3
930	94.3
930	94
930	93.8
930	93.8
931	93.8
931	93.8
931	93.8
931	93.8
931	93.8
931	93.8
931	93.8
931	93.8
932	93.8
932	93.8
932	93.8
932	93.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

932	94.3
932	94
932	93.8
932	93.8
933	93.8
933	94.1
933	94.1
933	93.8
933	93.8
933	93.8
933	93.8
933	93.8
934	93.8
934	93.8
934	93.8
934	93.8
934	93.8
934	93.8
934	93.8
934	93.8
935	93.8
935	93.8
935	93.8
935	93.8
935	93.8
935	93.8
935	93.8
935	93.8
936	93.8
936	93.8
936	93.8
936	93.8
936	93.3
936	93.6
936	93.8
936	93.8
937	93.8
937	93.8
937	93.8
937	93.8
937	93.8
937	93.8
937	93.8
937	93.8
938	93.8
938	94.2
938	94.1
938	93.8
938	93.8

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

938	93.8
938	94
938	94.3
939	93.8
939	93.8
939	93.8
939	93.8
939	93.8
939	93.8
939	93.6
939	93.3
940	93.3
940	93.3
940	93.3
940	93.3
940	93.3
940	93.3
940	93.3
940	93.3
941	93.3
941	93.3
941	93.3
941	93.3
941	93.3
941	93.7
941	93.8
941	93.8
942	93.8
942	93.4
942	93.5
942	93.9
942	94.3
942	93.9
942	93.8
942	93.8
943	93.8
943	93.8
943	93.8
943	93.7
943	93.3
943	93.3
943	93.3
943	93.3
944	93.3
944	93.3
944	93.3
944	93.2
944	92.8
944	93.2

Oakwood Hospital Boiler 1, Test 1
11/03/93 from 08:50-09:50

944	93.3
944	93.3
945	93.3
945	93.3
945	93.3
945	93.3
945	93.3
945	93.3
945	93.3
945	93.3
946	93.3
946	93.7
946	93.8
946	93.7
946	93.3
946	93.7
946	93.8
946	93.8
947	93.8
947	93.4
947	93.3
947	93.3
947	93.3
947	93.3
947	93.3
947	93.3
948	93.3
948	93.3
948	93.3
948	93.3
948	93.3
948	93.3
948	93.3
948	93.3
949	93.3
949	93.3
949	93.3
949	93.3
949	93.3
949	93.3
949	93.6
949	93.7
Average	**94.66**

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

Average: 93.34

24 Hour	NOx ppm
1001	94.3
1001	94.3
1001	94.3
1001	94.3
1001	94.3
1001	93.8
1001	93.8
1001	93.8
1002	93.8
1002	93.8
1002	93.8
1002	93.8
1002	93.8
1002	93.8
1002	93.8
1002	93.8
1003	93.8
1003	93.8
1003	94
1003	94.3
1003	94.3
1003	94.3
1003	94
1003	93.7
1004	93.8
1004	94.2
1004	94
1004	93.8
1004	93.8
1004	93.8
1004	93.8
1004	93.8
1005	93.8
1005	93.7
1005	93.5
1005	93.3
1005	93.3
1005	93.7
1005	93.8
1005	93.8
1006	93.8
1006	93.3
1006	93.5
1006	93.8
1006	93.8
1006	93.8

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1006	93.8
1006	93.8
1007	93.8
1007	93.8
1007	93.8
1007	93.7
1007	93.7
1007	93.3
1007	93.3
1007	93.3
1008	93.3
1008	93.3
1008	93.3
1008	93.3
1008	93.3
1008	93.3
1008	93.3
1008	93.2
1009	93.3
1009	93.2
1009	93.3
1009	93.4
1009	93.8
1009	93.3
1009	93.3
1009	93.3
1010	93.3
1010	93.7
1010	93.5
1010	93.3
1010	93.3
1010	93.3
1010	93.3
1010	93.2
1011	93.3
1011	93.3
1011	93.3
1011	93.3
1011	93.3
1011	93.3
1011	93.3
1011	93.2
1012	93.2
1012	93.2
1012	93.3
1012	93.4
1012	93.8
1012	93.3
1012	93.3

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1013	93.4
1013	93.8
1013	93.8
1013	93.5
1013	93.3
1013	93.3
1013	93.3
1013	93.3
1014	93.3
1014	93.3
1014	93.2
1014	93.3
1014	93.1
1014	92.8
1014	92.8
1014	93.1
1015	93.3
1015	93.3
1015	93.2
1015	93.3
1015	93.4
1015	93.8
1015	93.3
1015	93.3
1016	93.4
1016	93.8
1016	93.8
1016	93.8
1016	93.8
1016	93.8
1016	93.3
1016	93.3
1017	93.2
1017	93.3
1017	93.2
1017	93.3
1017	93.3
1017	93.3
1017	93.3
1017	93.3
1018	93.2
1018	93.3
1018	93.2
1018	93.3
1018	93.2
1018	93.3
1018	93.3
1018	93.3
1019	93.3

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1019	93.3
1019	93.7
1019	93.4
1019	93.3
1019	93.3
1019	93.3
1019	93.2
1020	93.2
1020	93.3
1020	93.2
1020	93.3
1020	93.1
1020	92.8
1020	92.8
1020	92.8
1021	92.8
1021	92.8
1021	92.8
1021	93.1
1021	93.2
1021	93.3
1021	93.3
1021	93.3
1022	93.2
1022	93.3
1022	93.7
1022	93.4
1022	93.3
1022	93.3
1022	93.3
1022	93.6
1023	93.6
1023	93.3
1023	93.2
1023	93.3
1023	93.3
1023	93.3
1023	93.3
1023	93.3
1024	93.3
1024	93.2
1024	92.8
1024	92.8
1024	92.8
1024	92.8
1024	92.8
1024	93.1
1025	93.2
1025	93.3

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1025	93.3
1025	93.3
1025	93.3
1025	93.3
1025	93.3
1025	93.6
1026	93.5
1026	93.3
1026	93.2
1026	93.3
1026	93.5
1026	93.7
1026	93.3
1026	93.3
1027	93.3
1027	93.3
1027	93.2
1027	93.3
1027	93.1
1027	92.8
1027	92.8
1027	92.8
1028	93
1028	93.3
1028	93.3
1028	93.3
1028	93.3
1028	93.3
1028	93.3
1028	93.7
1029	93.5
1029	93.3
1029	93.3
1029	93.3
1029	93.2
1029	93.3
1029	93.3
1029	93.3
1030	93
1030	92.8
1030	92.8
1030	92.8
1030	92.8
1030	92.8
1030	92.8
1030	92.8
1031	93
1031	93.3
1031	93.2

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1031	93.3
1031	93.3
1031	93.3
1031	93.3
1031	93.7
1032	93.8
1032	93.7
1032	93.2
1032	93.3
1032	93.5
1032	93.7
1032	93.3
1032	93.3
1033	93.3
1033	93.3
1033	93.2
1033	93.3
1033	93.2
1033	93.3
1033	93.2
1033	93.2
1034	93.2
1034	93.4
1034	93.7
1034	93.4
1034	93.2
1034	93.4
1034	93.8
1034	93.8
1035	93.8
1035	93.8
1035	93.8
1035	93.8
1035	93.8
1035	93.8
1035	93.8
1035	93.8
1036	93.8
1036	93.7
1036	93.3
1036	93.3
1036	93.3
1036	93.3
1036	93.3
1036	93.3
1037	93.3
1037	93.3
1037	93.2
1037	93.3

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1037	93.2
1037	93.4
1037	93.8
1037	93.8
1038	93.8
1038	93.7
1038	93.3
1038	93.7
1038	93.8
1038	93.8
1038	93.8
1038	93.3
1039	93.3
1039	93.3
1039	93.3
1039	93.3
1039	93.3
1039	93.3
1039	93.3
1039	92.9
1040	93.1
1040	93.3
1040	93.2
1040	92.9
1040	92.8
1040	92.9
1040	93.3
1040	93.3
1041	93.3
1041	93.2
1041	92.8
1041	92.8
1041	92.8
1041	92.8
1041	92.8
1041	92.8
1042	92.8
1042	92.8
1042	92.8
1042	92.8
1042	92.8
1042	92.8
1042	92.8
1042	93.2
1043	93.2
1043	93.3
1043	93.3
1043	93.3
1043	93.2

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1043	93.3
1043	93.3
1043	93.3
1044	93.3
1044	93.1
1044	92.8
1044	92.9
1044	92.8
1044	92.8
1044	92.8
1044	92.8
1045	92.8
1045	92.9
1045	93.3
1045	93.3
1045	93.6
1045	93.6
1045	93.3
1045	93.3
1046	93.3
1046	93.4
1046	93.7
1046	93.8
1046	93.4
1046	93.3
1046	93.3
1046	93.2
1047	93.3
1047	93.3
1047	93.2
1047	93.3
1047	93.2
1047	93.3
1047	93.3
1047	93.7
1048	93.4
1048	93.3
1048	93.3
1048	93.8
1048	93.7
1048	93.8
1048	93.8
1048	93.3
1049	93.3
1049	93.3
1049	93.2
1049	93.3
1049	93.2
1049	93.3

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1049	93.3
1049	93.3
1050	93.2
1050	93.3
1050	93.2
1050	93.3
1050	93.2
1050	93.4
1050	93.7
1050	93.8
1051	93.8
1051	93.8
1051	93.7
1051	93.8
1051	93.8
1051	93.8
1051	93.7
1051	93.3
1052	93.2
1052	93.3
1052	93.2
1052	93.3
1052	93.2
1052	93.3
1052	93.2
1052	92.8
1053	93.1
1053	93.2
1053	93.2
1053	93.3
1053	93.2
1053	93.5
1053	93.8
1053	93.8
1054	93.8
1054	93.8
1054	93.7
1054	93.8
1054	93.8
1054	93.8
1054	93.7
1054	93.3
1055	93.3
1055	93.2
1055	93.2
1055	93.3
1055	92.9
1055	92.8
1055	92.8

Oakwood Hospital Boiler1, Test 2
11/03/93 from 10:01-11:01

1055	92.8
1056	93.2
1056	93.3
1056	93.2
1056	93.3
1056	92.9
1056	93
1056	93.3
1056	93.7
1057	93.4
1057	93.3
1057	93.2
1057	93.3
1057	93.2
1057	93.3
1057	93.3
1057	93.3
1058	93.3
1058	93.3
1058	93.2
1058	92.8
1058	92.8
1058	92.8
1058	92.8
1058	92.8
1059	92.8
1059	92.8
1059	92.8
1059	92.9
1059	92.8
1059	93
1059	93.2
1059	93.3
1100	93.3
1100	93.1
1100	92.8
1100	92.8
1100	93.2
1100	93
1100	92.8
1100	92.8
Average	**93.34**

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

Average: 93.31

24 Hour	NOx ppm
1112	93.8
1112	93.8
1112	93.7
1112	93.8
1112	93.8
1112	93.8
1112	93.8
1112	93.4
1113	93.3
1113	93.3
1113	93.2
1113	93.3
1113	93.2
1113	93.2
1113	93.3
1113	93.3
1114	93.3
1114	93.3
1114	93.3
1114	93.3
1114	93.2
1114	93.3
1114	93.3
1114	93.6
1115	93.7
1115	93.8
1115	93.2
1115	93.6
1115	93.8
1115	93.7
1115	93.3
1115	93.2
1116	93.2
1116	93.3
1116	93.2
1116	93.3
1116	93.3
1116	93.3
1116	93.3
1116	93.3
1117	93.2
1117	93.3
1117	93.2
1117	93.3
1117	93.3
1117	93.3

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1117	93.3
1117	93.3
1118	93.3
1118	93.3
1118	93.2
1118	93.3
1118	93.4
1118	93.7
1118	93.3
1118	93.3
1119	93.3
1119	93.3
1119	93.2
1119	93.3
1119	93.2
1119	93.2
1119	93.3
1119	92.9
1120	93
1120	93.3
1120	93.2
1120	93.2
1120	93.2
1120	93.3
1120	93.3
1120	93.3
1121	93.2
1121	93.3
1121	93.2
1121	93.3
1121	93.5
1121	93.7
1121	93.3
1121	93.2
1122	93.2
1122	93.3
1122	93.2
1122	93.3
1122	93.2
1122	93.3
1122	93.3
1122	92.9
1123	92.8
1123	92.9
1123	93.2
1123	93.3
1123	93.2
1123	93.2
1123	93.2

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1123	93.3
1124	93.3
1124	93.2
1124	92.8
1124	93.2
1124	93.3
1124	93.2
1124	93.2
1124	93.3
1125	93.3
1125	93.3
1125	93.2
1125	93.3
1125	93.3
1125	93.2
1125	92.8
1125	92.8
1126	92.8
1126	92.8
1126	92.8
1126	92.8
1126	92.8
1126	92.8
1126	92.8
1126	92.8
1127	92.8
1127	92.8
1127	92.8
1127	93.2
1127	93.2
1127	93.3
1127	93.3
1127	93.3
1128	93.2
1128	93.3
1128	93.7
1128	93.8
1128	93.5
1128	93.3
1128	93.3
1128	93.7
1129	93.7
1129	93.8
1129	93.7
1129	93.3
1129	93.2
1129	93.2
1129	93.3
1129	93.3

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1130	93.2
1130	93.3
1130	93.2
1130	93.3
1130	93.3
1130	93.2
1130	93.3
1130	93.3
1131	93.2
1131	93.2
1131	93.2
1131	93.3
1131	93.3
1131	93.2
1131	93.3
1131	93.7
1132	93.8
1132	93.7
1132	93.2
1132	93.7
1132	93.7
1132	93.8
1132	93.8
1132	93.3
1133	93.2
1133	93.3
1133	93.2
1133	93.3
1133	93
1133	92.8
1133	92.8
1133	92.8
1134	92.8
1134	92.8
1134	92.8
1134	92.8
1134	93
1134	93.2
1134	93.3
1134	93.3
1135	93.3
1135	93.3
1135	93.2
1135	93.3
1135	93.2
1135	93.3
1135	93.2
1135	92.8
1136	93.1

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1136	93.3
1136	93.2
1136	93.3
1136	93.2
1136	93.3
1136	93.3
1136	92.8
1137	92.8
1137	92.8
1137	92.8
1137	92.8
1137	92.8
1137	92.8
1137	92.8
1137	92.8
1138	92.8
1138	92.9
1138	93.2
1138	93.3
1138	93.2
1138	93.2
1138	93.3
1138	93.2
1139	93.6
1139	93.9
1139	94.3
1139	93.8
1139	93.7
1139	93.8
1139	93.8
1139	94.2
1140	94
1140	93.8
1140	93.8
1140	93.8
1140	93.7
1140	93.7
1140	93.8
1140	93.3
1141	93.2
1141	93.2
1141	93.2
1141	93.8
1141	93.8
1141	93.8
1141	93.8
1141	93.8
1142	93.8
1142	94

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1142	94.3
1142	93.8
1142	93.8
1142	93.8
1142	93.8
1142	94.3
1143	93.9
1143	93.8
1143	93.8
1143	93.8
1143	93.8
1143	93.8
1143	93.8
1143	93.8
1144	93.7
1144	93.8
1144	93.7
1144	93.8
1144	93.7
1144	93.7
1144	93.8
1144	93.8
1145	93.8
1145	94
1145	94.3
1145	93.8
1145	93.7
1145	93.7
1145	93.8
1145	93.8
1146	93.8
1146	93.8
1146	93.7
1146	93.8
1146	93.7
1146	93.6
1146	93.3
1146	93.3
1147	93.3
1147	93.2
1147	93.2
1147	93.3
1147	93.2
1147	93.3
1147	93.2
1147	93.2
1148	93.3
1148	93.5
1148	93.7

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1148	93.3
1148	93.2
1148	93.5
1148	93.8
1148	93.8
1149	93.8
1149	93.6
1149	93.3
1149	93.8
1149	93.7
1149	93.6
1149	93.3
1149	93.2
1150	93.2
1150	93.1
1150	92.8
1150	92.8
1150	92.8
1150	92.8
1150	92.8
1150	93.2
1151	93.2
1151	93.2
1151	93.2
1151	93.3
1151	93.2
1151	93.3
1151	93.3
1151	93.8
1152	93.8
1152	93.6
1152	93.3
1152	93.3
1152	93.2
1152	93.2
1152	93.3
1152	93.2
1153	92.9
1153	92.8
1153	92.8
1153	92.8
1153	92.8
1153	92.8
1153	92.8
1153	92.8
1154	93.2
1154	93.3
1154	93.2
1154	93.3

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1154	93.2
1154	93.2
1154	93.3
1154	93.2
1155	93.2
1155	93.2
1155	93.2
1155	93.3
1155	93.2
1155	93.2
1155	93.3
1155	93.2
1156	93.3
1156	93
1156	92.8
1156	92.8
1156	92.8
1156	93
1156	93.3
1156	93.2
1157	93.2
1157	93.3
1157	93.3
1157	93.3
1157	93.2
1157	93.5
1157	93.7
1157	93.7
1158	93.7
1158	93.5
1158	93.2
1158	93.3
1158	93.6
1158	93.5
1158	93.2
1158	93.2
1159	93.3
1159	93.2
1159	93.2
1159	93.3
1159	93.2
1159	93.2
1159	93.2
1159	93.2
1200	93.3
1200	93.5
1200	93.7
1200	93.8
1200	93.7

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1200	93.8
1200	93.9
1200	94.3
1201	93.8
1201	93.8
1201	93.7
1201	93.8
1201	93.7
1201	93.8
1201	93.6
1201	93.2
1202	93.2
1202	93.2
1202	93.2
1202	93.3
1202	93.2
1202	93.2
1202	93.3
1202	93.2
1203	93.2
1203	93.5
1203	93.6
1203	93.3
1203	93.2
1203	93.3
1203	93.4
1203	93.7
1204	93.3
1204	93.2
1204	93.2
1204	93.3
1204	93.2
1204	93.3
1204	93.2
1204	93.2
1205	92.8
1205	92.8
1205	92.8
1205	92.8
1205	93.2
1205	93.3
1205	93.2
1205	93.2
1206	93.2
1206	93.5
1206	93.6
1206	93.3
1206	93.2
1206	93.3

Oakwood Hospital Boiler 1, Test 3
11/03/93 from 11:12-12:12

1206	93.3
1206	93.2
1207	93.3
1207	93.3
1207	93.1
1207	92.8
1207	92.8
1207	92.8
1207	92.8
1207	92.8
1208	92.8
1208	92.8
1208	92.9
1208	93.3
1208	93.2
1208	93.3
1208	93.2
1208	93.2
1209	93.2
1209	93.6
1209	93.6
1209	93.3
1209	93.2
1209	93.2
1209	93.2
1209	93.2
1210	92.8
1210	92.8
1210	92.8
1210	92.8
1210	92.8
1210	92.8
1210	92.8
1210	92.8
1211	92.8
1211	92.8
1211	92.8
1211	92.8
1211	92.8
1211	92.8
1211	92.8
1211	92.8
Average	**93.31**

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

Average: 139.13

24 Hour	NOx ppm
1444	117.3
1444	117.6
1444	118.6
1444	119.5
1444	120.5
1444	121.6
1444	123
1444	124.3
1445	125.4
1445	126.1
1445	127.5
1445	128.3
1445	129
1445	129.6
1445	130.6
1445	131
1446	131.5
1446	132.6
1446	134
1446	134.4
1446	134.7
1446	135
1446	135.5
1446	135.9
1447	136.1
1447	136.1
1447	136.6
1447	136.6
1447	136.7
1447	136.6
1447	137.1
1447	137.1
1448	137.1
1448	137.1
1448	137.1
1448	137.1
1448	137.1
1448	137.1
1448	137.6
1448	137.6
1449	137.6
1449	137.6
1449	138.1
1449	138.1
1449	137.9
1449	137.6

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1449	138.1
1449	138.4
1450	138.6
1450	138.6
1450	138.1
1450	138.4
1450	138.6
1450	138.6
1450	138.6
1450	138.6
1451	138.6
1451	138.6
1451	138.6
1451	138.6
1451	138.6
1451	138.6
1451	138.6
1451	138.6
1452	138.6
1452	138.6
1452	138.6
1452	138.6
1452	138.4
1452	138.1
1452	138.1
1452	138.1
1453	138.1
1453	138.1
1453	138.1
1453	138.4
1453	138.6
1453	138.6
1453	138.6
1453	138.6
1454	138.6
1454	138.6
1454	139
1454	139
1454	138.9
1454	138.6
1454	138.6
1454	138.9
1455	139
1455	139
1455	138.6
1455	138.6
1455	138.6
1455	138.6
1455	139

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1455	139
1456	139
1456	139
1456	139
1456	139
1456	139
1456	139
1456	139.1
1456	139
1457	139
1457	139
1457	139
1457	139
1457	139
1457	139
1457	139.1
1457	139.4
1458	139.3
1458	139
1458	138.6
1458	138.9
1458	139
1458	139
1458	139.1
1458	138.7
1459	138.6
1459	138.6
1459	138.6
1459	138.6
1459	138.6
1459	138.6
1459	138.6
1459	138.6
1500	138.6
1500	138.6
1500	138.6
1500	138.6
1500	138.6
1500	138.6
1500	138.6
1500	138.9
1501	139
1501	139
1501	139
1501	139
1501	139.3
1501	139.5
1501	139.5
1501	139.5

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1502	139.6
1502	139.6
1502	140.1
1502	139.7
1502	139.6
1502	139.5
1502	139.6
1502	140
1503	140.2
1503	140.1
1503	139.5
1503	139.6
1503	139.6
1503	139.5
1503	139.5
1503	139.5
1504	139.3
1504	139.1
1504	139
1504	139
1504	139.1
1504	139
1504	139
1504	139
1505	139.1
1505	139
1505	138.6
1505	139
1505	139
1505	139
1505	139.1
1505	138.7
1506	138.6
1506	138.6
1506	138.6
1506	139
1506	139.3
1506	139.5
1506	139
1506	139
1507	139
1507	139.1
1507	139.5
1507	139.1
1507	139
1507	139
1507	139.1
1507	138.6
1508	138.6

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1508	138.6
1508	138.6
1508	138.6
1508	138.6
1508	138.6
1508	138.6
1508	138.6
1509	138.6
1509	138.7
1509	139
1509	139
1509	139.3
1509	139.4
1509	139
1509	139
1510	139.3
1510	139.7
1510	140.1
1510	139.6
1510	139.5
1510	139.5
1510	139.6
1510	140
1511	139.8
1511	139.6
1511	139.6
1511	139.5
1511	139.5
1511	139.5
1511	139.6
1511	139.5
1512	139.5
1512	139.5
1512	139.5
1512	139.5
1512	139.5
1512	139.5
1512	139.6
1512	139.1
1513	139.3
1513	139.5
1513	139.5
1513	139.5
1513	139.6
1513	139.7
1513	140.2
1513	140.6
1514	140.4
1514	140.1

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1514	140.1
1514	140.6
1514	140.7
1514	140.7
1514	140.7
1515	140.6
1515	140.6
1515	140.6
1515	140.7
1515	140.7
1515	140.6
1515	140.5
1515	140.2
1516	140.1
1516	140.1
1516	140.1
1516	140.1
1516	139.6
1516	139.5
1516	139.5
1516	139.6
1517	139.6
1517	139.6
1517	139.7
1517	140.1
1517	140.2
1517	140.1
1517	140.1
1517	140.1
1518	140.1
1518	140.5
1518	140.6
1518	140.7
1518	140.2
1518	139.8
1518	139.7
1518	140.1
1519	140.1
1519	139.8
1519	139.5
1519	139.5
1519	139.1
1519	139
1519	139
1519	139
1520	139
1520	139
1520	139
1520	139

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1520	139
1520	139
1520	139
1520	139
1521	139
1521	139.1
1521	139.2
1521	139.5
1521	139.5
1521	139.5
1521	139.7
1521	140.1
1522	140.1
1522	140.2
1522	140.1
1522	140.1
1522	140.1
1522	140.5
1522	140.5
1522	140.1
1523	140.1
1523	140.1
1523	139.9
1523	139.5
1523	139.5
1523	139.6
1523	139.5
1523	139.5
1524	139.5
1524	139.5
1524	139.5
1524	139.5
1524	139.5
1524	139.5
1524	139.5
1524	139.6
1525	140.1
1525	139.7
1525	139.5
1525	139.6
1525	140.1
1525	140.5
1525	140.6
1525	140.6
1526	140.1
1526	140.5
1526	140.8
1526	141.1
1526	141.1

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1526	140.8
1526	140.7
1526	140.7
1527	140.6
1527	140.3
1527	140.1
1527	140.1
1527	140.1
1527	140.1
1527	140.1
1527	140.1
1528	140.1
1528	140.2
1528	140.1
1528	140.2
1528	140.6
1528	140.7
1528	140.7
1528	140.7
1529	141.1
1529	141.1
1529	141.3
1529	141.6
1529	141.1
1529	140.8
1529	140.8
1529	141.1
1530	141.1
1530	141.1
1530	140.9
1530	140.7
1530	140.7
1530	141
1530	140.9
1530	140.7
1531	140.7
1531	140.7
1531	140.6
1531	140.6
1531	140.6
1531	140.6
1531	140.4
1531	140.2
1532	140.1
1532	140.2
1532	140.1
1532	140.2
1532	140.6
1532	140.7

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1532	140.7
1532	140.7
1533	140.6
1533	140.7
1533	140.7
1533	140.7
1533	141.1
1533	141.1
1533	140.9
1533	140.7
1534	140.6
1534	140.7
1534	140.7
1534	140.7
1534	140.7
1534	140.7
1534	140.6
1534	140.6
1535	140.1
1535	140.6
1535	140.6
1535	140.6
1535	140.6
1535	140.7
1535	140.7
1535	140.7
1536	140.7
1536	140.7
1536	140.9
1536	141.1
1536	141.1
1536	141.5
1536	141.6
1536	141.5
1537	141.1
1537	141.5
1537	141.9
1537	142
1537	141.6
1537	141.6
1537	141.6
1537	141.7
1538	142.1
1538	141.7
1538	141.6
1538	141.6
1538	141.6
1538	141.6
1538	141.6

Oakwood Hospital Boiler 2, Test 1
11/03/93 from 14:44-15:44

1538	141.6
1539	141.6
1539	141.2
1539	141.1
1539	141.1
1539	141.1
1539	141.1
1539	141.1
1539	141.1
1540	141.1
1540	141.1
1540	141.1
1540	141.1
1540	141.1
1540	141.1
1540	141.4
1540	141.6
1541	141.6
1541	141.6
1541	141.3
1541	141.2
1541	141.6
1541	142.1
1541	142.1
1541	142
1542	141.6
1542	142.1
1542	142.1
1542	142.1
1542	142.1
1542	142.1
1542	142.1
1542	142.1
1543	142.1
1543	142.1
1543	142.1
1543	142.1
1543	142.1
1543	141.7
1543	141.6
1543	141.6
Average	**139.13**

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

Average: 162.85

24 Hour	NOx ppm
1554	145.6
1554	145.8
1554	146.1
1554	146.1
1554	146.5
1554	146.6
1554	146.6
1554	146.6
1555	146.6
1555	146.9
1555	147.2
1555	147.6
1555	148
1555	148
1555	148.4
1555	150
1556	151.2
1556	152
1556	152.7
1556	153.4
1556	153
1556	152.9
1556	152.8
1556	152.5
1557	152
1557	151.7
1557	151.4
1557	150.9
1557	150.9
1557	150.9
1557	150.9
1557	151
1558	150.5
1558	150.7
1558	150.9
1558	150.9
1558	151
1558	151.2
1558	151.4
1558	151.5
1559	151.9
1559	151.7
1559	151.3
1559	150.9
1559	151.4
1559	151.4

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1559	151.4
1559	151.5
1600	151
1600	151
1600	151
1600	150.9
1600	151
1600	151.2
1600	151.3
1600	150.9
1601	150.9
1601	150.9
1601	151.1
1601	151.4
1601	152.4
1601	153
1601	153.5
1601	153.9
1602	154.8
1602	154.9
1602	154.9
1602	154.9
1602	155.4
1602	155.7
1602	155.8
1602	155.4
1603	155.4
1603	156
1603	156.6
1603	156.9
1603	156.9
1603	157.2
1603	157.3
1603	156.9
1604	156.9
1604	156.6
1604	156.5
1604	156.5
1604	156.9
1604	156.9
1604	157.1
1604	157.4
1605	157.4
1605	157.7
1605	157.9
1605	157.9
1605	157.9
1605	158.2
1605	158.4

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1605	158.4
1606	158.4
1606	158.7
1606	159
1606	159.4
1606	159.4
1606	159.1
1606	159
1606	159.4
1607	159.9
1607	160
1607	160
1607	159.9
1607	160.4
1607	160.5
1607	160.6
1607	160.9
1608	161.9
1608	168.2
1608	174.5
1608	181
1608	183.4
1608	185.4
1608	187.1
1608	188.6
1609	190.9
1609	190.9
1609	191.1
1609	191.4
1609	190
1609	189
1609	188.3
1609	188
1610	188
1610	187.3
1610	186.6
1610	185.9
1610	184.5
1610	183.1
1610	181.6
1610	179.9
1611	177.4
1611	177.4
1611	177.6
1611	177.9
1611	177.9
1611	177.9
1611	177.7
1611	177.4

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1612	176.9
1612	176.9
1612	176.9
1612	176.9
1612	176.9
1612	176.6
1612	176.4
1612	176.4
1613	175.9
1613	175.5
1613	175.3
1613	175.3
1613	174.8
1613	174.5
1613	174.2
1613	173.8
1614	173.4
1614	173.4
1614	173.4
1614	173.3
1614	172.9
1614	172.5
1614	172.4
1614	172.5
1615	172.9
1615	172.2
1615	171.7
1615	171.3
1615	171.3
1615	171.3
1615	171.1
1615	170.8
1616	170.4
1616	170
1616	169.4
1616	168.8
1616	168.8
1616	168.8
1616	168.6
1616	168.4
1617	168.4
1617	168.4
1617	168.4
1617	168.4
1617	168.4
1617	168.4
1617	168.4
1618	168.4

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1618	168.4
1618	168.1
1618	167.9
1618	168.4
1618	168.7
1618	168.6
1618	168.3
1619	167.8
1619	167.4
1619	167.3
1619	167.3
1619	167.3
1619	166.9
1619	166.8
1619	166.8
1620	166.4
1620	166.4
1620	166.4
1620	166.4
1620	166.4
1620	166.4
1620	166.4
1620	166.4
1621	166.3
1621	166.3
1621	166.4
1621	166.4
1621	166.4
1621	166.7
1621	166.6
1621	166.3
1622	165.8
1622	166.2
1622	166.6
1622	166.7
1622	166.4
1622	165.9
1622	166.1
1622	166.3
1623	166.3
1623	165.9
1623	165.8
1623	165.7
1623	165.3
1623	164.9
1623	164.8
1623	164.8
1624	164.8
1624	164.8

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1624	164.6
1624	164.4
1624	164.4
1624	164.4
1624	164.4
1624	164.4
1625	164.4
1625	164.4
1625	164.4
1625	164.4
1625	164.4
1625	164.4
1625	164.4
1625	164.5
1626	164.8
1626	164.5
1626	164.4
1626	164.4
1626	164.4
1626	164.8
1626	164.6
1626	164.4
1627	164.4
1627	164
1627	163.9
1627	163.9
1627	163.9
1627	163.9
1627	163.6
1627	163.3
1628	162.9
1628	162.9
1628	162.9
1628	162.9
1628	162.9
1628	162.9
1628	162.9
1628	163
1629	163.4
1629	163.4
1629	163.4
1629	163.5
1629	163.9
1629	163.9
1629	163.9
1629	163.8
1630	163.4
1630	163.8
1630	163.9

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1630	163.9
1630	163.9
1630	163.4
1630	163.4
1630	163.4
1631	163.4
1631	163.4
1631	163.4
1631	163.2
1631	162.9
1631	162.5
1631	162.4
1631	162.4
1632	162.4
1632	162.4
1632	162.1
1632	161.9
1632	161.9
1632	161.9
1632	161.9
1632	161.9
1633	161.9
1633	161.9
1633	161.9
1633	161.9
1633	161.9
1633	161.9
1633	162.2
1633	162.4
1634	162.4
1634	162
1634	161.9
1634	161.9
1634	161.9
1634	162.4
1634	162.4
1634	162.3
1635	161.9
1635	161.9
1635	161.9
1635	161.9
1635	161.9
1635	161.9
1635	161.6
1635	161.4
1636	161.4
1636	161.4
1636	161.4
1636	161.4

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1636	161.5
1636	161.4
1636	161.4
1636	161.4
1637	161.4
1637	161.4
1637	161.7
1637	161.9
1637	161.9
1637	161.9
1637	161.9
1637	161.8
1638	161.4
1638	161.9
1638	161.9
1638	161.9
1638	161.9
1638	161.4
1638	161.8
1638	162.1
1639	162.4
1639	161.9
1639	161.9
1639	161.9
1639	161.9
1639	162.4
1639	162.1
1639	161.9
1640	161.9
1640	161.9
1640	161.6
1640	161.4
1640	161.4
1640	161.9
1640	161.6
1640	161.4
1641	161.4
1641	161.4
1641	161.4
1641	161.4
1641	161.4
1641	161.4
1641	161.4
1641	161.4
1642	161.4
1642	161.4
1642	161.4
1642	161.4
1642	161.5

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1642	161.9
1642	161.6
1642	161.4
1643	161.4
1643	161.9
1643	161.9
1643	161.9
1643	161.9
1643	161.4
1643	161.4
1643	161.6
1644	161.9
1644	161.4
1644	161.4
1644	161.4
1644	161.4
1644	160.9
1644	160.9
1644	160.9
1645	160.9
1645	160.9
1645	160.6
1645	160.7
1645	160.9
1645	160.9
1645	160.9
1645	160.9
1646	161
1646	161.4
1646	161.4
1646	161.4
1646	161.4
1646	160.9
1646	161.3
1646	161.6
1647	161.9
1647	161.4
1647	161
1647	161.1
1647	161.4
1647	161.4
1647	161.4
1647	161.2
1648	160.9
1648	160.9
1648	160.6
1648	160.5
1648	160.5
1648	160.5

Oakwood Hospital Boiler 2, Test 2
11/03/93 from 15:54-16:54

1648	160.1
1648	160
1649	160
1649	160
1649	159.9
1649	160
1649	160
1649	160
1649	160
1649	159.9
1650	159.9
1650	160
1650	159.9
1650	160
1650	160
1650	160.5
1650	160.1
1650	159.9
1651	159.9
1651	160
1651	160.4
1651	160.2
1651	160
1651	160
1651	160
1651	160
1652	160
1652	160
1652	160
1652	160
1652	160
1652	159.9
1652	160
1652	160
1653	160
1653	159.9
1653	160
1653	160
1653	160
1653	159.9
1653	160
1653	160
Average	**162.85**

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

Average: 127.67

24 Hour	NOx ppm
1710	129.6
1710	129.7
1710	129.6
1710	129.7
1710	129.7
1710	129.6
1710	129.7
1710	129.7
1711	129.6
1711	129.6
1711	129.6
1711	129.6
1711	129.6
1711	129.6
1711	129.7
1711	129.6
1712	129.6
1712	129.7
1712	130.1
1712	129.9
1712	129.6
1712	129.6
1712	129.7
1712	129.9
1713	130
1713	129.6
1713	129.6
1713	129.7
1713	129.8
1713	130.1
1713	129.7
1713	129.7
1714	129.6
1714	129.6
1714	129.6
1714	129.6
1714	129.6
1714	129.6
1714	129.2
1714	129.1
1715	129.1
1715	129.1
1715	129.1
1715	129.1
1715	129.1
1715	128.7

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1715	128.7
1715	128.7
1716	128.7
1716	128.7
1716	128.7
1716	128.7
1716	128.7
1716	128.7
1716	128.7
1716	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1717	128.7
1718	128.7
1718	128.7
1718	128.7
1718	128.7
1718	128.7
1718	128.7
1718	128.7
1718	128.4
1719	128.2
1719	128.2
1719	128.6
1719	128.4
1719	128
1719	127.6
1719	128.2
1720	128.5
1720	128.5
1720	128.2
1720	128.2
1720	128.2
1720	128.2
1720	128.2
1720	128.2
1721	128.2
1721	128
1721	127.6
1721	127.6
1721	127.6
1721	127.6
1721	127.6
1721	127.6

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1722	127.6
1722	127.6
1722	127.6
1722	127.6
1722	127.6
1722	127.6
1722	127.6
1722	127.6
1723	127.6
1723	127.6
1723	127.6
1723	127.6
1723	127.6
1723	127.6
1723	127.6
1723	127.6
1724	127.6
1724	127.6
1724	127.6
1724	127.6
1724	127.6
1724	127.6
1724	127.6
1724	128.2
1725	128.2
1725	128.2
1725	128.2
1725	128.2
1725	128.2
1725	128.4
1725	128.7
1725	128.7
1726	128.3
1726	128.4
1726	128.7
1726	128.7
1726	128.7
1726	128.5
1726	128.2
1726	128.2
1727	128.2
1727	128.2
1727	128.2
1727	128.2
1727	128.2
1727	128
1727	127.6
1727	127.6
1728	127.6

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1728	127.6
1728	127.6
1728	127.6
1728	127.6
1728	127.6
1728	127.6
1728	127.6
1729	127.6
1729	127.6
1729	127.6
1729	127.6
1729	127.6
1729	127.6
1729	127.6
1729	127.6
1730	127.6
1730	127.6
1730	127.6
1730	127.6
1730	127.6
1730	127.8
1730	128.2
1730	128.2
1731	127.8
1731	127.9
1731	128.2
1731	128.7
1731	128.3
1731	128
1731	127.7
1731	128.2
1732	128.2
1732	128.2
1732	128.2
1732	128.2
1732	128.2
1732	128.2
1732	128.1
1732	127.6
1733	127.6
1733	127.6
1733	127.6
1733	127.1
1733	127.1
1733	127.1
1733	127.1
1733	127.1
1734	127.1
1734	127.1

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1734	127.1
1734	127.1
1734	127.1
1734	126.9
1734	126.7
1734	126.7
1735	126.7
1735	126.9
1735	127.1
1735	127.1
1735	127.1
1735	127.1
1735	127.1
1735	127.1
1736	127.1
1736	127.1
1736	127.2
1736	127.6
1736	127.6
1736	127.4
1736	127.2
1736	127.6
1737	128.1
1737	127.9
1737	127.6
1737	127.6
1737	127.6
1737	127.9
1737	128.1
1737	127.6
1738	127.6
1738	127.6
1738	127.6
1738	127.6
1738	127.6
1738	127.6
1738	127.5
1738	127.1
1739	126.7
1739	126.9
1739	127.1
1739	127.1
1739	127.1
1739	126.9
1739	126.7
1739	126.7
1740	126.7
1740	126.7
1740	126.8

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1740	127.1
1740	126.7
1740	126.7
1740	126.7
1740	127.1
1741	127.1
1741	127.1
1741	127.1
1741	127.1
1741	127.1
1741	127.1
1741	127.1
1741	127.1
1742	127.6
1742	127.3
1742	127.1
1742	127.1
1742	127.6
1742	127.6
1742	127.6
1742	127.6
1743	127.2
1743	127.4
1743	127.6
1743	127.6
1743	127.6
1743	127.6
1743	127.6
1743	127.6
1744	127.6
1744	127.6
1744	127.5
1744	127.1
1744	127.1
1744	127.1
1744	127.1
1744	127.1
1745	127.1
1745	126.9
1745	126.7
1745	126.7
1745	126.7
1745	126.9
1745	127
1745	126.7
1746	126.7
1746	126.7
1746	126.7
1746	126.7

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1746	126.7
1746	126.7
1746	126.7
1746	126.7
1747	126.7
1747	126.7
1747	126.7
1747	126.7
1747	127.1
1747	127.1
1747	127.1
1747	127.1
1748	127.1
1748	127.1
1748	127.3
1748	127.6
1748	127.2
1748	127.1
1748	127.1
1748	127.1
1749	127.6
1749	127.3
1749	127.1
1749	127.1
1749	127.1
1749	127.1
1749	127.1
1749	127.2
1750	126.7
1750	126.7
1750	126.8
1750	127.1
1750	127.1
1750	126.9
1750	126.8
1750	127.1
1751	127.1
1751	127.2
1751	127.1
1751	127.1
1751	127.1
1751	127.1
1751	127.1
1751	127.1
1752	127.1
1752	127.1
1752	127
1752	126.7
1752	127.1

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1752	127.1
1752	127.1
1752	127.1
1753	126.7
1753	126.7
1753	126.8
1753	127.1
1753	126.7
1753	126.7
1753	126.7
1753	126.7
1754	126.7
1754	126.7
1754	126.7
1754	126.7
1754	126.7
1754	126.7
1754	126.7
1754	126.7
1755	126.7
1755	126.7
1755	126.7
1755	126.7
1755	127.1
1755	127.1
1755	127.1
1755	127.1
1756	127.1
1756	127.2
1756	127.1
1756	127.1
1756	127.1
1756	127.1
1756	127.1
1756	127.2
1757	127.1
1757	127.1
1757	127.1
1757	127.1
1757	127.1
1757	127.1
1757	127.3
1757	127.6
1758	127.6
1758	127.7
1758	127.5
1758	127.2
1758	127.6
1758	127.6

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1758	127.5
1758	127.1
1759	127.1
1759	127.1
1759	127.3
1759	127.6
1759	127.1
1759	127.1
1759	127.1
1759	127.2
1800	127.6
1800	127.3
1800	127.1
1800	127.1
1800	127.2
1800	127.5
1800	127.4
1800	127.2
1801	127.1
1801	127.2
1801	127.3
1801	127.6
1801	127.2
1801	127.1
1801	127.1
1801	127.2
1802	127.6
1802	127.7
1802	127.6
1802	127.6
1802	127.2
1802	127.2
1802	127.3
1802	127.6
1803	127.6
1803	127.7
1803	127.4
1803	127.2
1803	127.6
1803	127.6
1803	127.6
1803	127.6
1804	127.1
1804	127.2
1804	127.2
1804	127.2
1804	127.1
1804	127.1
1804	127.1

Oakwood Hospital Boiler 2, Test 3
11/03/93 from 17:10-18:10

1804	127.2
1805	127.1
1805	127.2
1805	127.1
1805	127.1
1805	127.2
1805	127.1
1805	127.1
1805	127.2
1806	127.1
1806	127.2
1806	127.1
1806	127.2
1806	127.2
1806	127.1
1806	127.1
1806	127.1
1807	127.1
1807	127.1
1807	127.1
1807	127.1
1807	127.2
1807	127.2
1807	127.4
1807	127.7
1808	127.6
1808	127.6
1808	127.6
1808	127.6
1808	127.6
1808	127.6
1808	127.6
1808	127.7
1809	127.6
1809	127.6
1809	127.6
1809	127.6
1809	127.7
1809	128.1
1809	127.9
1809	127.6
Average	**127.67**

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

Average: 119.96

24 Hour	NOx ppm
1504	109.2
1504	109.6
1504	109.6
1504	109.4
1504	109.1
1504	109.2
1504	109.6
1505	109.4
1505	109.1
1505	109.1
1505	109.2
1505	109.4
1505	109.5
1505	109.1
1505	109.1
1506	109.2
1506	109.2
1506	109.1
1506	109.2
1506	109.1
1506	109.1
1506	109.1
1506	109.1
1507	109.1
1507	109.1
1507	108.7
1507	108.7
1507	108.4
1507	108.2
1507	108.2
1507	108.1
1508	107.8
1508	107.5
1508	107.1
1508	107.1
1508	107.1
1508	107.1
1508	107.1
1508	107.1
1509	107.1
1509	107.2
1509	107.6
1509	107.1
1509	106.8
1509	106.8
1509	107.1

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1509	107.5
1510	107.3
1510	107
1510	106.7
1510	106.2
1510	105.5
1510	104.5
1510	103.1
1510	101.2
1511	99.7
1511	98.2
1511	96.7
1511	95.3
1511	94.6
1511	94.3
1511	94.7
1511	95.6
1512	97.2
1512	98.7
1512	100.1
1512	102.5
1512	104.2
1512	105.8
1512	107.6
1512	110
1513	111.4
1513	112.8
1513	114.2
1513	116.1
1513	117.4
1513	118.4
1513	119.1
1513	120.1
1514	120.7
1514	121.4
1514	122.1
1514	122.6
1514	122.9
1514	123.2
1514	123.6
1514	124.1
1515	124.2
1515	124.2
1515	124.2
1515	124.2
1515	124.2
1515	124.2
1515	124.2
1515	124.2

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1516	124.2
1516	124.2
1516	124.2
1516	124.2
1516	124.2
1516	124.2
1516	124.2
1516	124.2
1517	124.2
1517	124.2
1517	124.2
1517	124.1
1517	124.2
1517	124.1
1517	124.2
1517	124.1
1518	124.2
1518	124
1518	123.6
1518	124.2
1518	124.2
1518	124.2
1518	124.2
1518	124.1
1519	124.2
1519	124.2
1519	124.2
1519	124.1
1519	124.2
1519	123.9
1519	123.6
1519	123.6
1520	123.6
1520	123.4
1520	123.1
1520	123.1
1520	123.1
1520	122.9
1520	122.6
1520	122.6
1521	122.6
1521	122.6
1521	122.7
1521	123.1
1521	123.1
1521	123.1
1521	123.1
1521	123.1
1522	123.1

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1522	123.1
1522	123.1
1522	122.7
1522	122.3
1522	122.3
1522	122.7
1522	122.6
1523	122.7
1523	122.4
1523	122.2
1523	122.2
1523	122.5
1523	122.4
1523	122.1
1523	122.1
1524	121.8
1524	121.7
1524	121.7
1524	121.7
1524	121.7
1524	121.5
1524	121.2
1524	121.1
1525	121.2
1525	121.3
1525	121.6
1525	121.6
1525	121.7
1525	121.7
1525	121.7
1525	121.6
1526	121.7
1526	121.6
1526	121.7
1526	122.2
1526	122.1
1526	122.2
1526	122.2
1526	122.1
1527	122.1
1527	122.3
1527	122.6
1527	122.1
1527	122.2
1527	122.2
1527	122.2
1527	122.2
1528	122.2
1528	121.9

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1528	121.7
1528	121.7
1528	121.6
1528	121.6
1528	121.7
1528	121.6
1529	121.7
1529	121.6
1529	121.7
1529	122.1
1529	122.2
1529	122.1
1529	122.2
1529	122.1
1530	122.6
1530	122.9
1530	123.1
1530	123.1
1530	122.7
1530	122.9
1530	123.2
1530	123.6
1531	123.2
1531	123.1
1531	123.1
1531	123.1
1531	123.1
1531	123.1
1531	123
1531	122.7
1532	123
1532	123.1
1532	123.1
1532	123.1
1532	123.1
1532	123.1
1532	123.1
1532	123.1
1533	123.1
1533	123.1
1533	123.1
1533	123.1
1533	123.1
1533	123.3
1533	123.6
1533	123.6
1534	123.6
1534	123.3
1534	123.1

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1534	123.1
1534	123.5
1534	123.3
1534	123.1
1534	123.1
1535	123.1
1535	123.1
1535	123.1
1535	123.1
1535	123.1
1535	123.1
1535	123.1
1535	123.1
1536	123.1
1536	122.8
1536	122.7
1536	122.7
1536	122.7
1536	122.6
1536	122.5
1536	122.1
1537	121.7
1537	121.4
1537	121
1537	120.7
1537	120.2
1537	119.8
1537	119.5
1537	119
1538	119.1
1538	119.1
1538	119.1
1538	119.1
1538	118.7
1538	118.7
1538	118.7
1538	118.6
1539	118.6
1539	118.3
1539	118.1
1539	118.1
1539	118.1
1539	118.1
1539	118.3
1539	118.6
1540	118.7
1540	118.6
1540	118.8
1540	119.1

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1540	119.1
1540	119.4
1540	119.6
1540	119.6
1541	119.6
1541	119.9
1541	120.2
1541	120.2
1541	119.6
1541	119.9
1541	120.3
1541	120.7
1542	120.2
1542	120.2
1542	120.2
1542	120.2
1542	120.6
1542	120.4
1542	120
1542	119.6
1543	119.6
1543	119.6
1543	119.6
1543	119.6
1543	119.6
1543	119.6
1543	119.6
1543	119.6
1544	119.6
1544	120
1544	120.2
1544	120.2
1544	120.2
1544	120.5
1544	120.8
1544	121.1
1545	120.7
1545	120.7
1545	120.7
1545	120.7
1545	120.7
1545	120.7
1545	120.7
1545	120.7
1546	120.2
1546	120.2
1546	120.2
1546	120.2
1546	120.2

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1546	120.2
1546	120.2
1546	120.2
1547	120.2
1547	120.2
1547	120.2
1547	120.2
1547	120.2
1547	120.5
1547	120.8
1547	121.1
1548	121.2
1548	121.1
1548	121.3
1548	121.6
1548	122.1
1548	122.5
1548	122.8
1548	123.1
1549	123.1
1549	123.1
1549	123.3
1549	123.6
1549	124.2
1549	124.2
1549	124.4
1549	124.7
1550	124.7
1550	125
1550	125.2
1550	125.1
1550	124.7
1550	125
1550	125.1
1550	125.1
1551	125.1
1551	124.8
1551	124.7
1551	124.7
1551	124.7
1551	124.3
1551	124.2
1552	124.2
1552	124.2
1552	124.2
1552	124.2
1552	124.2
1552	124.2
1552	124.2

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1552	124
1553	123.6
1553	123.6
1553	123.6
1553	123.6
1553	123.6
1553	123.6
1553	123.6
1553	123.8
1554	124.2
1554	124.2
1554	124.2
1554	124.2
1554	124.2
1554	124.2
1554	124.2
1554	123.9
1555	123.6
1555	123.6
1555	123.2
1555	123.1
1555	123.2
1555	123.6
1555	123.6
1555	123.6
1556	123.6
1556	123.6
1556	124.1
1556	124
1556	123.6
1556	123.6
1556	123.6
1556	123.6
1557	123.5
1557	123.1
1557	123.1
1557	123.1
1557	123.1
1557	123.1
1557	123.1
1557	123.1
1558	123.1
1558	123.1
1558	123.1
1558	123.1
1558	123.1
1558	123.1
1558	123.1
1558	123.1

Oakwood Hospital Boiler 3, Test 1
11/02/93 from 15:04-16:04

1559	123.1
1559	123.1
1559	123.5
1559	123.4
1559	123.1
1559	123.1
1559	123.5
1559	123.9
1600	124.2
1600	124.2
1600	124.2
1600	124.2
1600	124.2
1600	124.7
1600	124.7
1600	124.5
1601	124.2
1601	124.2
1601	124.2
1601	124.2
1601	124.2
1601	124.2
1601	124.2
1601	124.2
1602	124.2
1602	124.2
1602	124.2
1602	123.9
1602	123.6
1602	123.6
1602	123.6
1602	123.9
1603	124.1
1603	123.6
1603	123.6
1603	123.6
1603	123.7
1603	124.2
1603	123.7
1603	123.6
Average	**119.96**

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

Average: 123.19

24 Hour	NOx ppm
1612	91.8
1612	92.6
1612	93.2
1612	108.7
1612	119.3
1612	124.7
1612	124.7
1612	124.8
1613	125.1
1613	125.5
1613	126.1
1613	125.2
1613	124.5
1613	124.2
1613	124.2
1613	124.2
1614	124.2
1614	124.2
1614	124.2
1614	124.2
1614	124.6
1614	124.7
1614	124.7
1614	124.2
1615	124.6
1615	124.9
1615	125.1
1615	124.7
1615	124.4
1615	124.4
1615	124.7
1615	124.7
1616	124.4
1616	124.2
1616	124.2
1616	124.2
1616	124.2
1616	124.2
1616	124.2
1616	124.2
1617	124.2
1617	124.2
1617	124.2
1617	124.2
1617	124.5
1617	124.5

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1617	124.2
1617	124.2
1618	124.6
1618	124.7
1618	124.7
1618	124.7
1618	124.3
1618	124.2
1618	124.2
1618	123.6
1619	123.6
1619	123.6
1619	123.6
1619	123.6
1619	123.6
1619	123.6
1619	123.6
1619	123.6
1620	123.6
1620	123.6
1620	123.6
1620	123.6
1620	124.1
1620	124
1620	123.6
1620	123.6
1621	123.6
1621	123.6
1621	123.6
1621	123.6
1621	123.2
1621	123.1
1621	123.1
1621	123.1
1622	123.1
1622	123.1
1622	123.1
1622	123.1
1622	123.1
1622	123.1
1622	123.1
1622	123.1
1623	123.1
1623	123.1
1623	123.1
1623	123.1
1623	123.5
1623	123.3
1623	123.1

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1623	123.1
1624	123.1
1624	123
1624	123.1
1624	123.1
1624	122.7
1624	122.6
1624	122.6
1624	122.6
1625	122.6
1625	122.8
1625	123.1
1625	123.1
1625	123.1
1625	123.1
1625	123.1
1625	123.1
1626	123.1
1626	123.1
1626	123.1
1626	123.1
1626	123.5
1626	123.6
1626	123.5
1626	123.1
1627	123.1
1627	123.1
1627	123.1
1627	123
1627	123.1
1627	123.1
1627	123.1
1627	123.1
1628	123.1
1628	123.1
1628	123.1
1628	123.1
1628	123.1
1628	123.1
1628	123.2
1628	123.6
1629	123.6
1629	123.3
1629	123.1
1629	123.1
1629	123.5
1629	123.3
1629	123.1
1629	123.1

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1630	122.7
1630	122.6
1630	122.6
1630	122.6
1630	122.6
1630	122.6
1630	122.6
1630	122.6
1631	122.6
1631	122.9
1631	123.1
1631	123.1
1631	123.1
1631	123.4
1631	123.7
1631	124.2
1632	124.2
1632	123.9
1632	123.6
1632	123.6
1632	123.6
1632	123.3
1632	123.1
1632	123.1
1633	123.1
1633	123.1
1633	123.1
1633	123.1
1633	123.1
1633	122.8
1633	122.6
1633	122.6
1634	123.1
1634	123.1
1634	123.1
1634	123.1
1634	122.7
1634	122.7
1634	122.6
1634	122.6
1635	122.7
1635	122.6
1635	122.6
1635	122.6
1635	122.2
1635	122.1
1635	122.1
1635	122.1
1636	122.1

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1636	122.1
1636	122.2
1636	122.2
1636	122.2
1636	122.2
1636	122.1
1636	122.1
1637	122.2
1637	122.3
1637	122.4
1637	122.1
1637	122.6
1637	122.7
1637	122.7
1638	122.7
1638	122.7
1638	123
1638	123.1
1638	123.1
1638	123.1
1638	123.1
1638	123.2
1639	123.1
1639	123.6
1639	123.6
1639	123.5
1639	123.1
1639	123.1
1639	123.1
1639	123.1
1640	123.1
1640	123.1
1640	123.1
1640	123.3
1640	123.6
1640	123.6
1640	123.7
1640	123.6
1641	123.6
1641	123.6
1641	123.3
1641	123.1
1641	123.1
1641	123.1
1641	123.1
1641	123.1
1642	123.1
1642	123.1
1642	123.1

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1642	123.1
1642	123.1
1642	123.1
1642	123.1
1642	123.1
1643	123.1
1643	123.1
1643	123.1
1643	123.1
1643	123.1
1643	122.6
1643	122.6
1643	122.7
1644	122.7
1644	122.7
1644	122.7
1644	122.7
1644	122.7
1644	122.7
1644	122.7
1644	122.8
1645	123.1
1645	123.1
1645	123.1
1645	123.1
1645	123.1
1645	123.1
1645	123.1
1645	123.1
1646	123.1
1646	123.1
1646	123.1
1646	122.9
1646	122.7
1646	122.6
1646	122.3
1646	122.2
1647	122.1
1647	122.1
1647	122.1
1647	122.2
1647	122.2
1647	122.2
1647	122.5
1647	122.7
1648	122.6
1648	122.7
1648	122.6
1648	122.7

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1648	122.7
1648	122.7
1648	122.7
1648	122.6
1649	122.6
1649	122.7
1649	122.6
1649	122.7
1649	122.6
1649	122.6
1649	122.6
1649	122.7
1650	122.6
1650	122.7
1650	122.6
1650	122.8
1650	123.1
1650	123.1
1650	123.1
1650	123.1
1651	123.1
1651	123.1
1651	123.1
1651	123.1
1651	123.1
1651	123.1
1651	123.1
1651	123.1
1652	123.1
1652	123.1
1652	123.1
1652	123.1
1652	123.1
1652	123.1
1652	123.1
1652	123.1
1653	123.1
1653	123.1
1653	123.5
1653	123.4
1653	123.1
1653	123.1
1653	123.1
1653	123.1
1654	123.1
1654	123.1
1654	123.1
1654	123.3
1654	123.6

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1654	123.6
1654	123.2
1654	122.9
1655	122.6
1655	122.7
1655	122.6
1655	122.8
1655	123.1
1655	123.1
1655	123.1
1655	123.3
1656	123.6
1656	123.6
1656	123.6
1656	123.6
1656	123.6
1656	123.6
1656	123.6
1656	123.6
1657	123.6
1657	123.6
1657	123.6
1657	123.6
1657	123.6
1657	123.6
1657	124.1
1657	124.2
1658	124.2
1658	124.2
1658	123.7
1658	123.6
1658	123.5
1658	123.1
1658	123.5
1658	123.6
1659	123.6
1659	123.6
1659	123.2
1659	123.1
1659	123.1
1659	123.1
1659	123.1
1659	123.4
1700	123.6
1700	123.6
1700	124.1
1700	123.9
1700	123.6
1700	123.6

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1700	123.6
1700	123.6
1701	123.6
1701	123.6
1701	123.1
1701	123.4
1701	123.6
1701	123.6
1701	123.6
1701	123.6
1702	123.6
1702	123.6
1702	123.6
1702	124
1702	124.2
1702	124.2
1702	124.2
1702	123.9
1703	123.7
1703	124.2
1703	124.6
1703	124.4
1703	124.2
1703	124.2
1703	124.2
1703	124.5
1704	124.6
1704	124.2
1704	124.2
1704	124.2
1704	124.3
1704	124.7
1704	124.3
1704	124.2
1705	124.2
1705	124.2
1705	124.2
1705	124.2
1705	124.2
1705	124.2
1705	124.2
1705	124.2
1706	124.2
1706	124.2
1706	124.6
1706	124.4
1706	124.2
1706	124.2
1706	124.2

Oakwood Hospital Boiler 3, Test 2
11/02/93 from 16:12-17:12

1706	124.2
1707	124.2
1707	124.2
1707	124.2
1707	124.2
1707	124.2
1707	124.2
1707	124.2
1707	124.3
1708	124.4
1708	124.8
1708	124.7
1708	124.7
1708	124.6
1708	124.2
1708	124.7
1708	124.7
1709	124.6
1709	124.2
1709	124.2
1709	124.2
1709	124.2
1709	124.2
1709	124.2
1709	124.2
1710	124.2
1710	124.2
1710	124.2
1710	124.2
1710	124
1710	123.6
1710	123.6
1710	123.6
1711	123.7
1711	123.7
1711	123.6
1711	123.7
1711	123.7
1711	123.7
1711	124.2
1711	124.2
Average	**123.19**

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

Average: 122.99

24 Hour	NOx ppm
1722	123.6
1722	123.6
1722	123.6
1722	123.6
1722	123.6
1722	123.6
1722	123.6
1722	123.6
1723	123.6
1723	123.5
1723	123.1
1723	123.5
1723	123.6
1723	123.6
1723	123.6
1723	123.6
1724	123.6
1724	123.6
1724	123.6
1724	123.6
1724	123.3
1724	123.2
1724	123.6
1724	123.6
1725	123.6
1725	123.6
1725	123.6
1725	123.6
1725	123.6
1725	123.6
1725	123.6
1725	123.6
1726	123.6
1726	123.6
1726	123.6
1726	123.6
1726	123.6
1726	123.6
1726	123.7
1726	124.1
1727	123.8
1727	123.6
1727	123.6
1727	123.6
1727	124
1727	124.2

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1727	124.2
1727	124.4
1728	123.9
1728	123.6
1728	123.6
1728	123.6
1728	123.6
1728	123.6
1728	123.6
1729	123.6
1729	123.6
1729	123.7
1729	123.7
1729	123.7
1729	123.9
1729	124.2
1729	124.2
1730	124.2
1730	124
1730	123.6
1730	124.2
1730	124.2
1730	124
1730	123.6
1730	123.6
1731	123.6
1731	123.6
1731	123.6
1731	123.6
1731	123.6
1731	123.6
1731	123.6
1731	123.1
1732	123.1
1732	123.1
1732	123.1
1732	123.1
1732	123.1
1732	123.1
1732	123.1
1732	123.6
1733	123.3
1733	123.1
1733	123.1
1733	123.1
1733	123.1
1733	123.1
1733	123.2

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1733	123.2
1734	123.2
1734	123.1
1734	123.1
1734	123.1
1734	123.1
1734	123.1
1734	123.1
1734	123.1
1735	123.1
1735	123.1
1735	123.1
1735	123.1
1735	123.1
1735	123.1
1735	123.1
1735	123.1
1736	123.5
1736	123.8
1736	124.2
1736	123.6
1736	123.3
1736	123.3
1736	123.6
1736	123.6
1737	123.6
1737	123.6
1737	123.6
1737	123.1
1737	123.1
1737	123.1
1737	123.1
1737	123.1
1738	123.1
1738	123.3
1738	123.6
1738	124.2
1738	124.6
1738	124.5
1738	124.2
1738	123.6
1739	123.6
1739	123.8
1739	124.2
1739	123.6
1739	123.6
1739	123.6
1739	123.6
1739	123.1

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1740	123.5
1740	123.6
1740	123.6
1740	123.6
1740	123.2
1740	123.1
1740	123.1
1740	123.1
1741	123.5
1741	123.6
1741	123.6
1741	123.6
1741	123.2
1741	123
1741	123.1
1741	123.6
1742	123.2
1742	123
1742	123.1
1742	123.1
1742	123.1
1742	123.1
1742	123.1
1742	123
1743	123.1
1743	123
1743	123.1
1743	123.1
1743	123.1
1743	123.1
1743	123.1
1743	123
1744	123.1
1744	123.3
1744	123.6
1744	123.6
1744	123.6
1744	123.6
1744	123.5
1745	123.1
1745	123.1
1745	123.1
1745	123.1
1745	123.1
1745	123.1
1745	123.1
1745	123.1
1746	123
1746	123.1

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1746	123.1
1746	123.1
1746	123.6
1746	123.6
1746	123.6
1746	123.5
1747	123.1
1747	123.5
1747	123.6
1747	123.5
1747	123.1
1747	123.1
1747	123.1
1747	123.1
1748	123
1748	123.1
1748	123.1
1748	123
1748	122.6
1748	122.6
1748	122.6
1748	122.6
1749	122.6
1749	122.6
1749	122.6
1749	122.6
1749	122.6
1749	122.6
1749	122.6
1749	122.7
1750	122.6
1750	123
1750	123
1750	123.1
1750	123.1
1750	122.7
1750	122.6
1750	122.6
1751	122.6
1751	123
1751	123.1
1751	123.1
1751	123.1
1751	123.1
1751	123
1751	123.2
1752	123.6
1752	123.6
1752	123.9

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1752	124.1
1752	123.6
1752	123.1
1752	123.3
1752	123.6
1753	123.6
1753	123.1
1753	123
1753	123
1753	122.6
1753	122.6
1753	122.6
1753	122.6
1754	122.6
1754	122.6
1754	122.6
1754	122.6
1754	122.6
1754	122.2
1754	122.4
1754	122.6
1755	122.6
1755	122.6
1755	122.9
1755	123.1
1755	123.1
1755	123.1
1755	123.1
1755	123.1
1756	123
1756	123.1
1756	123.1
1756	123
1756	122.6
1756	122.6
1756	122.6
1756	122.6
1757	122.6
1757	122.6
1757	122.6
1757	122.6
1757	122.6
1757	122.6
1757	122.6
1757	122.6
1758	122.6
1758	122.6
1758	122.9
1758	122.9

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1758	122.6
1758	122.6
1758	122.6
1758	122.7
1759	122.6
1759	122.6
1759	122.3
1759	122.1
1759	122.1
1759	122.1
1759	122.1
1759	122.1
1800	122.1
1800	122.1
1800	122.1
1800	122.1
1800	122.1
1800	122.1
1800	122.1
1800	122.1
1801	122.1
1801	122.6
1801	122.6
1801	122.6
1801	122.6
1801	122.6
1801	122.6
1801	122.8
1802	123.1
1802	122.7
1802	122.6
1802	122.6
1802	122.6
1802	122.6
1802	122.6
1802	122.6
1803	122.6
1803	122.6
1803	122.6
1803	122.6
1803	122.6
1803	122.6
1803	122.6
1803	122.6
1804	122.6
1804	122.6
1804	122.6
1804	122.6
1804	122.6

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1804	122.6
1804	122.3
1804	122.1
1805	122.1
1805	122.1
1805	122.1
1805	122.3
1805	122.6
1805	122.6
1805	122.6
1805	122.6
1806	122.6
1806	122.6
1806	122.6
1806	122.6
1806	122.6
1806	122.6
1806	122.3
1806	122.1
1807	122.1
1807	122.6
1807	122.6
1807	122.8
1807	123.1
1807	123.1
1807	123.1
1807	123.1
1808	123.1
1808	123.1
1808	123
1808	123.1
1808	123.1
1808	122.6
1808	122.9
1808	123.1
1809	123
1809	122.6
1809	122.6
1809	122.6
1809	122.6
1809	123.1
1809	123.1
1809	122.9
1810	122.6
1810	122.6
1810	122.9
1810	122.9
1810	122.6
1810	122.6

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1810	122.6
1810	122.8
1811	123
1811	122.7
1811	122.6
1811	122.6
1811	122.6
1811	123.1
1811	122.7
1811	122.6
1812	122.6
1812	122.6
1812	123
1812	122.9
1812	122.6
1812	122.6
1812	122.6
1812	122.8
1813	123
1813	122.6
1813	122.6
1813	122.6
1813	122.6
1813	122.6
1813	122.6
1813	122.6
1814	122.6
1814	122.6
1814	123
1814	122.9
1814	122.6
1814	122.6
1814	122.6
1814	122.8
1815	123
1815	122.6
1815	122.2
1815	122.3
1815	122.6
1815	122.6
1815	122.6
1815	122.4
1816	122.1
1816	122.1
1816	122.5
1816	122.6
1816	122.6
1816	122.6
1816	122.6

Oakwood Hospital Boiler 3, Test 3
11/02/93 from 17:22-18:22

1816	122.6
1817	122.6
1817	122.6
1817	122.6
1817	122.6
1817	122.5
1817	122.1
1817	122.1
1817	122.1
1818	122.1
1818	122.1
1818	122.1
1818	122.1
1818	122.1
1818	122.1
1818	122.1
1818	122.1
1819	122.1
1819	122.1
1819	122.5
1819	122.6
1819	122.6
1819	122.6
1819	122.6
1819	122.6
1820	122.5
1820	122.1
1820	122.1
1820	122.4
1820	122.6
1820	122.6
1820	122.2
1820	122.1
1821	122.1
1821	122.1
1821	122.5
1821	122.4
1821	122.1
1821	122.1
1821	122.1
1821	122.1
Average	**122.99**

OAKWOOD HOSPITAL
INITIAL CALIBRATIONS
TEST 1, BOILER 1

TIME	NOx	TIME	NOx	TIME	NOx
747	450.9	753	91.8	736	0.362
747	450.9	753	91.8	736	0.414
747	450.9	753	91.8	736	-0.162
747	450.8	753	91.8	737	-0.198
747	450.4	753	91.8	737	-0.185
748	450.4	753	91.8	737	-0.177
748	450.4	753	91.8	737	-0.144
748	450.3	753	91.8	737	-0.181
748	450.4	754	91.8	737	-0.19
748	450.3	754	91.8	737	-0.171
748	450.4	754	91.8	737	-0.161
748	450.4	754	91.8	738	-0.162
748	450.4	754	91.8	738	-0.191
749	450.4	754	91.8	738	-0.18
749	450.4	754	91.6	738	-0.165
749	450.4	754	91.3	738	-0.15
749	450.4			738	-0.166
749	450.3			738	-0.179
749	450.4			738	-0.196
749	450.4			739	-0.132
749	450.3			739	-0.135
750	450.4			739	-0.169
750	450.4				
750	450.4				
750	450.4				
750	450.4				
750	450.4				
750	450.4				
751	450.4				
751	450.4				

OAKWOOD HOSPITAL
CALIBRATIONS
BETWEEN TESTS 1&2
TEST 2, BOILER 1

TIME	NOx	TIME	NOx
954	0.208	957	90.7
954	0.356	957	91.3
954	0.368	957	92.3
954	0.357	957	92.3
954	0.379	957	92.5
954	0.125	957	92.8
954	-0.222	958	92.8
955	-0.142	958	92.8
955	-0.201	958	92.8
955	-0.206	958	92.8
		958	92.8
		958	92.8
		958	92.8

OAKWOOD HOSPITAL
CALIBRATIONS
BETWEEN TESTS 2&3
TEST 3, BOILER 1

TIME	NOx	TIME	NOx
1104	-0.183	1107	90.1
1104	-0.201	1107	91.5
1104	-0.204	1108	92.3
1104	-0.194	1108	92.3
1104	-0.218	1108	92.8
1105	-0.223	1108	92.8
1105	-0.228	1108	92.8
1105	0.286	1108	92.8
1105	0.346	1108	92.8
1105	0.329	1108	92.8
1105	0.337	1109	92.8
		1109	92.8
		1109	92.8
		1109	92.8
		1109	92.8
		1109	92.8

OAKWOOD HOSPITAL
INITIAL CALIBRATIONS
TEST 1, BOILER 2

TIME	NOx	TIME	NOx	TIME	NOx
1218	453.7	1222	94.8	1214	0.357
1218	454.7	1223	94.8	1214	0.357
1218	455.4	1223	94.8	1214	0.344
1218	455.8	1223	94.4	1214	0.354
1218	455.8			1214	0.355
1218	455.8				
1219	455.7				
1219	455.6				
1219	455.2				
1219	455.3				

OAKWOOD HOSPITAL
CALIBRATIONS
BETWEEN TESTS 1&2
TEST 2, BOILER 2

TIME	NOx	TIME	NOx
1549	0.365	1551	97.7
1549	0.379	1551	98.2
1549	-0.11	1551	98.7
1550	-0.205	1551	99.2
1550	-0.186	1551	99.2
1550	-0.208	1551	99.2
1550	-0.192	1552	99.2
1550	-0.209	1552	99.2
		1552	99.2

OAKWOOD HOSPITAL
CALIBRATION
BETWEEN TESTS 2&3
TEST3, BOILER 2

TIME	NOx	TIME	NOx
1700	0.388	1708	92.3
1700	0.379	1708	92.3
1700	0.395	1708	92
1700	0.364	1708	91.7
1700	0.765	1708	91.7

OAKWOOD HOSPITAL
POST CALIBRATIONS
TEST 3, BOILER 2

TIME	NOx	TIME	NOx
1811	-0.048	1818	91.8
1811	-0.139	1818	91.3
1811	-0.128	1818	91.2
1811	-0.132	1818	91.3
1811	-0.149	1818	91.3
1811	-0.138	1818	91.3
1811	-0.133	1818	91
1812	-0.157		
1812	-0.151		

OAKWOOD HOSPITAL
INITIAL CALIBRATIONS
TEST 1, BOILER 3

TIME	NOx	TIME	NOx
1312	0.179	1309	92.9
1312	0.208	1309	92.9
1312	0.191	1310	92.9
1312	0.202	1310	92.7
1312	0.178	1310	92.9
1312	0.223	1310	92.9
1313	0.177	1310	92.9
1313	0.185	1310	92.9
1313	0.174		
1313	0.183		

OAKWOOD HOSPITAL
CALIBRATIONS
BETWEEN TESTS 1&2
TEST 2, BOILER 3

TIME	NOx	TIME	NOx
1609	-0.194	1611	90.1
1609	-0.197	1611	90.8
1609	-0.237	1611	90.8
1609	-0.205	1611	90.8

OAKWOOD HOSPITAL
CALIBRATIONS
BETWEEN TESTS 2&3
TEST 3, BOILER 3

TIME	NOx	TIME	NOx
1715	-0.161	1719	90.8
1715	-0.211	1719	90.8
1715	-0.196	1720	90.8
1715	-0.168	1720	90.8
1715	-0.185	1720	90.8
1715	-0.124	1720	90.8
		1720	91
		1720	91.2
		1720	91.2
		1720	91.3

OAKWOOD HOSPITAL
POST CALIBRATIONS
TEST 3, BOILER 3

TIME	NOx	TIME	NOx	TIME	NOx
1825	-0.163	1830	446.7	1832	92.8
1825	-0.16	1830	446.7	1832	92.8
1825	-0.184	1830	446.7	1832	92.5
1826	-0.202	1830	446.7	1832	92.3
1826	-0.176	1830	446.7	1832	92.3
1826	-0.214	1830	446.6	1832	92.3
1826	-0.188	1830	446.7	1832	92.3
1826	-0.185	1830	446.4	1833	92.3
1826	-0.144	1831	446.4	1833	92.3
		1831	446.7		
		1831	446.7		

'cott Specialty Gases

1290 COMBERMERE STREET, TROY, MICHIGAN 48084 (313) 589-2950

Shipped From : [illegible]

Our Project # : 540084

Your P.O. # : 518

Expiration Date : 2-13-94

Cylinder Number : BLM002774

Cylinder Pressure 1900 psig

1 of 1 Component(s)

Customer :
WW ENGINEERING & SCIENCE
5730 EAGLE DRIVE
GRAND RAPIDS MI 49508

* * * * CERTIFICATE OF ANALYSIS - EPA PROTOCOL GASES * * * *
PERFORMED ACCORDING TO SECTION 3.0.4

Certified Per Traceability Procedure # G1
Protocol # 1

File # PO-4382

Certified Accuracy 1 % NBS Traceable

ANALYZED CYLINDER		REFERENCE STD			INSTRUMENTATION		
COMPONENT	CERTIFIED CONC.	SRM # (CRM #)	CYLINDER NUMBER	CONC.	INSTR/MODEL/SERIAL #	LAST CALIBRATION DATE	ANALYTICAL PRINCIPLE
NITRIC OXIDE	91.36 PPM	1684	ALM-013312	95.26 PPM	HORIBA	6-25-92	CHEMILUMINESCENCE
		2629A	FF-28612	19.40 PPM	OPE-235		
					483814		

BALANCE GAS : NITROGEN

NITROGEN DIOXIDE 0.30 PPM (FROM SECOND ANALYSIS)

FIRST ANALYSIS DATE : 8-8-92

ZERO GAS (mV)	TEST GAS (mV)	RESULTS PPM	REFERENCE GAS CONC.	REFERENCE GAS (mV)	RESULTS PPM
0.00	91.30	91.31	95.26 PPM	95.30	95.31
0.00	91.30	91.31		95.30	95.31
0.00	91.30	91.31		95.30	95.31

CALCULATED RESULTS 91.26
91.26
91.26

AVERAGE : 91.26 PPM

SECOND ANALYSIS DATE : 8-13-92

ZERO GAS (mV)	TEST GAS (mV)	RESULTS PPM	REFERENCE GAS CONC.	REFERENCE GAS (mV)	RESULTS PPM
0.00	91.50	91.51	95.26 PPM	95.30	95.31
0.00	91.50	91.51		95.30	95.31
0.00	91.50	91.51		95.30	95.31
0.00	91.80 NOX	91.81			

CALCULATED RESULTS 91.46
91.46
91.46 91.76 PPM NOX

AVERAGE : 91.46 PPM

CALIBRATION CURVE 1 st DEGREE

SRM # (CRM #)	CONC. PPM	SPLIT PT (%)	DVM (mV)	FITTED VALUE	PERCENT ERROR
1684	95.26	100	95.30	95.31	0.05
2629A	19.40	20	19.40	19.40	0.01
	0.00	0	0.00	0.00	0.00
		0		0.00	0.00
		0		0.00	0.00
		0		0.0000	0.00
		0		0.00	0.00
2629A	19.40	LOW	19.40	19.40	0.01
1684	95.26	HIGH	95.25	95.26	-0.00

* GMIS - GAS MANUFACTURER'S INTERNAL STANDARD

Analyst [signature] Approved By [signature]

The only liability of this Company for gas which fails to comply with this analysis shall be replacement thereof by the Company without extra cost.

Matheson
World Leader in Specialty Gases & Equipment

CERTIFICATE OF ANALYSIS-EPA PROTOCOL MIXTURES

CUSTOMER: MATHESON GAS PRODUCTS
PURITY GAS CYLINDERS PO #1130

REFERENCE #: 109-22940

CYLINDER #: SD-12558

PROTOCOL: 1

CYLINDER PRESSURE: 2000

LAST ANALYSIS DATE: 08/24/93

EXPIRATION DATE: 08/24/95

REPLICATE CONCENTRATIONS

COMPONENT : NITRIC OXIDE	DATE: 08/17/93	DATE: 08/24/93
MEAN CONC : 452 PPM	451 PPM	451 PPM
	452 PPM	451 PPM
	453 PPM	453 PPM
COMPONENT : NITROGEN DIOXIDE	DATE: / /	DATE: / /
MEAN CONC : 2.5 PPM		
COMPONENT :	DATE: / /	DATE: / /
MEAN CONC :		

BALANCE GAS: NITROGEN

REFERENCE STANDARDS

SRM # : 1686B

CYLINDER # : CLM-4883

CONCENTRATION: 492 PPM

ERTIFICATION INSTRUMENTS

COMPONENT NITRIC OXIDE

MAKE/MODEL TECO 14A

SERIAL NUMBER 14A-13108-134

MEASUREMENT PRINC. CHEMILUMINESCENCE

LAST CALIBRATION 08-02-93

REPLICATE DATA COMPONENT: NITRIC OXIDE

DATE 08/17/93

1. Z =0	C =423	R =461
2. C =422	R =459	Z =0
3. R =457	Z =0	C =421

DATE 08/24/93

Z = 0	C =419	R =457
C = 418	R =456	Z =0
R = 457	Z =0	C =421

REPLICATE DATA COMPONENT:

DATE / /

1. Z =	C =	R =
2. C =	R =	Z =
3. R =	Z =	C =

DATE / /

Z =	C =	R =
C =	R =	Z =
R =	Z =	C =

REPLICATE DATA COMPONENT:

DATE / /

1. Z =	C =	R =
2. C =	R =	Z =
3. R =	Z =	C =

DATE / /

Z =	C =	R =
C =	R =	Z =
R =	Z =	C =

R = Reference Gas, C = Candidate Gas, Z = Zero Gas

This certification was performed according to EPA Protocol method (s) described in section 3.0.4.G1 and/or section 3.0.4.G2.

ANALYST _____ DATE 8-27-93

WW ENGINEERING & SCIENCE
METER POST TEST CALIBRATION
Oakwood Hosp.

Gas Fired Boiler Date: 20-Dec-93 Calibration Meter I.D.: Wet Test Yds.: 1.01544 Barometric: 29.18

DeltaH@ 1.61871 Meter Box Identification: M-5 Calibrators Initials: CM Approved By:
Vacuum @ 1 Hg

	Orifice Reading (H) In H20	Calibration Meter Gas Volume (Vds) ft3	Meter Box Meter Gas Volume (Vd) ft3	Temperature: Calibration Meter Average (tds) F	Temperature: Meter Box Meter Average (td) F	Calibration Meter Pressure (p) In H2O	Time (O) min	Orifice Pressure Differential (H@)	Meter Box Meter Coefficient (Yd)	Kd
Stop	1.6	4.960	689.692	72	90	-0.9	7	1.75588	0.97489	0.13307
Start	1.6	0	684.382	72	88	-0.9				
Average:	1.6	4.960	5.310	72	89	-0.9				
Stop	1.6	5.654	695.754	72	92	-0.9	8	1.76174	0.97521	0.13273
Start	1.6	0	689.692	72	88	-0.9				
Average:	1.6	5.654	6.062	72	90	-0.9				
Stop	1.6	4.94	701.058	72	96	-0.9	6.8	1.65834	0.97914	0.13643
Start	1.6	0	695.754	72	90	-0.9				
Average:	1.6	4.940	5.304	72	93	-0.9				
							Average:	1.72532	0.97641	0.13407
									Kiso=	1524.271