BK058

SOURCE TEST REPORT
FOUR 75 MEGAWATT GAS TURBINES
SYCAMORE COGENERATION COMPANY, BAKERSFIELD, CALIFORNIA

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Submitted to:

San Joaquin Valley Unified Air Pollution Control District
2700 M Street, Suite 275
Bakersfield, California 93301

Test Dates:

February 11,12, and 16, 1993

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March 12, 1993

Prepared by:

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SECTION 1

INTRODUCTION

SOURCE TEST REPORT
FOUR 75 MEGAWATT GAS TURBINES
SYCAMORE COGENERATION COMPANY,
BAKERSFIELD, CALIFORNIA

SECTION 1

INTRODUCTION

Engineering-Science, Inc. (ES), Bakersfield, California conducted source testing of four 75 Megawatt (MW) gas turbines located at Sycamore Cogeneration Company (Sycamore), Bakersfield, California. Testing was conducted to demonstrate compliance with annual testing requirements in Permit to Operate numbers S-0511-0001-01 (turbine Unit 1), S-0511-0002-01 (turbine Unit 2), S-0511-0003-01 (turbine Unit 3), and S-0511-0004-01 (turbine Unit 4) issued by the San Joaquin Valley Unified Air Pollution Control District (District). The EPA Permit No. for the facility is NSR-4-4-8SJ8509.

All testing procedures were conducted in accordance with the guidelines published in 40 CFR, Part 60, Appendix A and Appendix B, dated July 1990 and CARB Method 100. Testing consisted of Continuous Emission Monitoring (CEM) for Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Carbon Dioxide (CO_2), and Oxygen (O_2). The turbines were operated at 100% load condition and fueled by natural gas. The test program is summarized in Table 1-1.

Testing was performed on February 11, 12, and 16, 1993. Three tests of 45 minute duration were performed on each of the four turbines while operating on natural gas for a total of 12 runs. The first run on Unit 2 (see Table 2-2) is disregarded due to an instrumentation problem the unit was experiencing this run which resulted in inaccurate fuel flow rate readings. Unit #2 was retested on February 16, 1993 to confirm compliance. Three 45-minute runs were performed for the Unit #2 retest.

In addition to the CEM testing, a sample of natural gas was collected and analyzed for Carbon (C), Hydrogen (H), Oxygen (O), Nitrogen (N), Sulfur (S), and

TABLE 1-1
SUMMARY OF COMPLIANCE SOURCE TESTING
SYCAMORE COGENERATION COMPANY [1]
BAKERSFIELD, CALIFORNIA
FEBRUARY 11, 12, AND 16, 1993

Source Test Parameters and Methodology				
Natural Gas				
Nitrogen Oxides NO_x	Carbon Monoxide CO	Carbon Dioxide CO_2	Oxygen O_2	Exhaust Gas Flow Rate
Triplicate 45-minute runs per turbine for compliance. CARB Method 100	Triplicate 45-minute runs per turbine for compliance. CARB Method 100	Triplicate 45-minute runs per turbine. CARB Method 100	Triplicate 45-minute runs per turbine. CARB Method 100	Single fuel Sample Analyzed by ASTM Method D-3588 F-Factor calculations in accordance with 40 CFR, Part 60, Appendix A

[1] Facility EPA Permit # NSR-4-4-8SJ8509
District Permit # S-0511-0001-01 (Unit 1)
District Permit # S-0511-0002-01 (Unit 2)
District Permit # S-0511-0003-01 (Unit 3)
District Permit # S-0511-0004-01 (Unit 4)

heating value (Btu). Fuel consumption data was supplied by Sycamore plant personnel. This data was used to determine exhaust gas pollutant mass emission rates (lb/hr) in accordance with F-Factor calculation methods specified in 40 CFR, Part 60, Appendix A.

The test program was observed by Mssrs. Harvey Lopez, Glen Slider, and Greg LeFore of the District. Ms. Karen White-Fallon of Sycamore coordinated plant activities. The ES team was comprised of Mssrs. Troy Delfino and Jim Polhamus.

SECTION 2

SUMMARY OF RESULTS

SECTION 2

SUMMARY OF RESULTS

The following Tables present the parameters and emission data measured by Engineering-Science, Inc. at Sycamore Cogeneration Company on February 11, 12, and 16, 1993. Emission measurements were made of the exhaust gases of the four natural gas fired turbines, District Permit No.'s S-0511-0001-01 (Unit 1), S-0511-0002-01 (Unit 2), S-0511-0003-01 (Unit 3) and S-0511-0004-01 (Unit 4). The EPA Permit No. for the facility is NSR-4-4-8SJ8509.

Five Summary Tables (two for Unit 2 which was tested on both February 11 and 16, 1993) are provided for EPA reporting requirements. Each of the EPA Summary Tables reports the unit tested, test method, test date, NO_x emissions (lbs/hr and ppm @ 15% O_2), CO emissions (lbs/hr and ppm @ 15% O_2), fuel usage, water injection, and water to fuel ratio.

Following the EPA Summary Tables are tables summarizing the NO_x and CO emissions from turbines 1, 2, 2 (retest), 3, and 4 (Tables 2-1 through 2-5, respectively). NO_x and CO emissions are reported in parts per million (ppm), ppm @ 15% O_2, pounds per hour (lb/hr), and pounds per million British Thermal units (lb/MMBtu).

SUMMARY OF SOURCE TEST RESULTS FOR EPA

Company : SYCAMORE COGENERATION COMPANY Permit Number : NSR-4-4-8SJ8509

Unit Number or Name : UNIT 1, GAS Location HRSG

Pollutant/Other	Test Method	Test Date	Emissions / Other
Particulates			
SO2			
NOx as NO2	CARB METHOD 100	February 11, 1993	131.57 lbs/hr 38.51 ppm @ 15% O2
CO	CARB METHOD 100	February 11, 1993	4.08 lbs/hr 1.96 ppm @ 15% O2
Fuel Usage Water Injection Water to Fuel Ratio		February 11, 1993	11.997 lbs/sec 7.782 lbs/sec 0.649
Fuel Usage			
Excess Oxygen			
Other			

* Emissions/Other should be at standard conditions (68dF and 29.92 inches of Hg) and in units of EPA's Authority to Construct/Modify.

Prepared by : Gary W. McRae

Title : Environmental Scientist

Date : March 8, 1993

SUMMARY OF SOURCE TEST RESULTS FOR EPA

Company : SYCAMORE COGENERATION COMPANY Permit Number : NSR-4-4-8SJ8509

Unit Number or Name : UNIT 2, GAS Location HRSG

Pollutant/Other	Test Method	Test Date	Emissions / Other
Particulates			
SO2			
NOx as NO2	CARB METHOD 100	February 11, 1993	141.7 lbs/hr 42.66 ppm @ 15% O2
CO	CARB METHOD 100	February 11, 1993	1.95 lbs/hr 0.97 ppm @ 15% O2
Fuel Usage Water Injection Water to Fuel Ratio		February 11, 1993	11.660 lbs/sec 7.392 lbs/sec 0.634
Fuel Usage			
Excess Oxygen			
Other			

* Emissions/Other should be at standard conditions (68dF and 29.92 inches of Hg) and in units of EPA's Authority to Construct/Modify.

Prepared by : Gary W. McRae

Title : Environmental Scientist

Date : March 8, 1993

SUMMARY OF SOURCE TEST RESULTS FOR EPA

Company : SYCAMORE COGENERATION COMPANY Permit Number : NSR-4-4-8SJ8509

Unit Number or Name : UNIT 2 (RETEST) , GAS Location HRSG

Pollutant/Other	Test Method	Test Date	Emissions / Other
Particulates			
SO2			
NOx as NO2	CARB METHOD 100	February 16, 1993	118.96 lbs/hr 35.19 ppm @ 15% O2
CO •	CARB METHOD 100	February 16, 1993	2.72 lbs/hr 1.32 ppm @ 15% O2
Fuel Usage Water Injection Water to Fuel Ratio		February 16, 1993	11.867 lbs/sec 8.629 lbs/sec 0.727
Fuel Usage			
Excess Oxygen			
Other			

* Emissions/Other should be at standard conditions (68dF and 29.92 inches of Hg) and in units of EPA's Authority to Construct/Modify.

Prepared by : Gary W. McRae

Title : Environmental Scientist

Date : March 8, 1993

SUMMARY OF SOURCE TEST RESULTS FOR EPA

Company : SYCAMORE COGENERATION COMPANY Permit Number : NSR-4-4-8SJ8509

Unit Number or Name : UNIT 3, GAS Location HRSG

Pollutant/Other	Test Method	Test Date	Emissions / Other
Particulates			
SO2			
NOx as NO2	CARB METHOD 100	February 12, 1993	125.87 lbs/hr 40.93 ppm @ 15% O2
CO	CARB METHOD 100	February 12, 1993	1.97 lbs/hr 1.05 ppm @ 15% O2
Fuel Usage Water Injection Water to Fuel Ratio		February 12, 1993	10.802 lbs/sec 7.417 lbs/sec 0.687
Fuel Usage			
Excess Oxygen			
Other			

* Emissions/Other should be at standard conditions (68dF and 29.92 inches of Hg) and in units of EPA's Authority to Construct/Modify.

Prepared by : Gary W. McRae

Title : Environmental Scientist

Date : March 8, 1993

SUMMARY OF SOURCE TEST RESULTS FOR EPA

Company : SYCAMORE COGENERATION COMPANY Permit Number : NSR-4-4-8SJ8509

Unit Number or Name : UNIT 4, GAS Location HRSG

Pollutant/Other	Test Method	Test Date	Emissions / Other
Particulates			
SO2			
NOx as NO2	CARB METHOD 100	February 11, 1993	120.81 lbs/hr 35.54 ppm @ 15% O2
CO	CARB METHOD 100	February 11, 1993	2.74 lbs/hr 1.32 ppm @ 15% O2
Fuel Usage Water Injection Water to Fuel Ratio		February 11, 1993	11.933 lbs/sec 8.782 lbs/sec 0.736
Fuel Usage			
Excess Oxygen			
Other			

* Emissions/Other should be at standard conditions (68dF and 29.92 inches of Hg) and in units of EPA's Authority to Construct/Modify.

Prepared by : Gary W. McRae

Title : Environmental Scientist

Date : March 8, 1993

TABLE 2-1
NITROGEN OXIDE AND CARBON MONOXIDE DATA SUMMARY
UNIT 1, DISTRICT PERMIT # S-0511-0001-01
SYCAMORE COGENERATION COMPANY
BAKERSFIELD, CALIFORNIA
FEBRUARY 11, 1993

RUN	O_2	NITROGEN OXIDE (NOx)				CARBON MONOXIDE (CO)			
#	%	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu
1	14.78	38.26	36.90	126.22	0.1352	2.40	2.31	4.82	0.0052
2	14.67	40.29	38.14	130.44	0.1397	2.02	1.91	3.98	0.0043
3	14.86	41.43	40.50	138.06	0.1484	1.71	1.67	3.46	0.0037
AVG	14.77	39.99	38.51	131.57	0.1411	2.04	1.96	4.08	0.0044

TABLE 2-2
NITROGEN OXIDE AND CARBON MONOXIDE DATA SUMMARY
UNIT 2, DISTRICT PERMIT # S-0511-0002-01
SYCAMORE COGENERATION COMPANY
BAKERSFIELD, CALIFORNIA
FEBRUARY 11, 1993

RUN	O_2	NITROGEN OXIDE (NOx)				CARBON MONOXIDE (CO)			
#	%	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu
1	15.10	44.15	44.88	149.11	0.1644	1.04	1.05	2.13	0.0023
2	14.84	43.32	42.18	139.95	0.1545	0.96	0.93	1.89	0.0021
3	14.74	42.70	40.92	136.04	0.1499	0.95	0.91	1.84	0.0020
AVG	14.89	43.39	42.66	141.70	0.1563	0.98	0.97	1.95	0.0022

TABLE 2-3
NITROGEN OXIDE AND CARBON MONOXIDE DATA SUMMARY
UNIT 2 (RETEST), DISTRICT PERMIT # S-0511-0002-01
SYCAMORE COGENERATION COMPANY
BAKERSFIELD, CALIFORNIA
FEBRUARY 16, 1993

RUN	O_2	NITROGEN OXIDE (NOx)				CARBON MONOXIDE (CO)			
#	%	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu
1	14.68	38.13	36.17	121.91	0.1325	1.40	1.33	2.72	0.0030
2	14.66	36.92	34.90	118.40	0.1279	1.39	1.31	2.71	0.0029
3	14.67	36.42	34.51	116.56	0.1264	1.40	1.33	2.73	0.0030
AVG	14.67	37.16	35.19	118.96	0.1289	1.40	1.32	2.72	0.0029

TABLE 2-4
NITROGEN OXIDE AND CARBON MONOXIDE DATA SUMMARY
UNIT 3, DISTRICT PERMIT # S-0511-0003-01
SYCAMORE COGENERATION COMPANY
BAKERSFIELD, CALIFORNIA
FEBRUARY 12, 1993

RUN	O_2	NITROGEN OXIDE (NOx)				CARBON MONOXIDE (CO)			
#	%	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu
1	14.67	41.25	39.09	120.88	0.1432	1.31	1.24	2.34	0.0028
2	14.80	43.60	42.20	129.60	0.1546	0.96	0.93	1.74	0.0021
3	14.76	43.19	41.50	127.14	0.1521	1.03	0.99	1.84	0.0022
AVG	14.75	42.68	40.93	125.87	0.1500	1.10	1.05	1.97	0.0024

TABLE 2-5
NITROGEN OXIDE AND CARBON MONOXIDE DATA SUMMARY
UNIT 4, DISTRICT PERMIT # S-0511-0004-01
SYCAMORE COGENERATION COMPANY
BAKERSFIELD, CALIFORNIA
FEBRUARY 11, 1993

RUN	O_2	NITROGEN OXIDE (NOx)				CARBON MONOXIDE (CO)			
#	%	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu	ppm(v)	ppm(v) @ 15% O_2	lb/hr	lb/MMBtu
1	14.84	37.96	36.93	125.47	0.1353	1.32	1.28	2.66	0.0029
2	14.82	36.34	35.27	119.85	0.1292	1.26	1.22	2.53	0.0027
3	14.65	36.45	34.43	117.12	0.1261	1.55	1.46	3.02	0.0033
AVG	14.77	36.92	35.54	120.81	0.1302	1.38	1.32	2.74	0.0030

SECTION 3

SAMPLING AND ANALYSIS PROCEDURES

SECTION 3

SAMPLING AND ANALYSIS PROCEDURES

Continuous Emissions Monitoring

Sample Extraction and Conditioning

Sampling is performed using a system which delivers a conditioned, continuous gas sample to the gas analyzers. The gas sample is extracted through a stainless steel probe, then passes through a heated (250°F) Teflon sample line, a sample condenser (for moisture removal), an in-line filter (for particulate removal), and a stainless steel pump. The clean, dry sample is then transported via unheated Teflon line to the analyzer manifold (located within the mobile van) for sample distribution to the continuous emissions monitors.

Continuous Emissions Monitors (CEMS)

Table 3-1 describes the CEMS used in the mobile van to analyze the exhaust gases. Calibrations of the CEMS are performed using EPA Protocol 1 or NIST certified calibration gases. Copies of gas certifications are included in the Report appendix.

Prior to performing the emissions testing, a leak check of the sample system is performed. A check of sampling system bias is performed by injecting calibration gas (for each parameter) at the sample probe and then observing instrument response. A response within $\pm$ 5 percent of instrument range is considered acceptable. The leak check is repeated at the conclusion of the test day to verify the validity of the tests.

Before each test run, an initial calibration of the analyzers is performed by introducing zero and span gases and making appropriate adjustments. During each test run, analyzer response data is recorded for each instrument. At the conclusion of the test run, a calibration check is performed to verify acceptable zero and span drift limits.

TABLE 3–1
CEM INSTRUMENT SPECIFICATIONS
CEM VAN # 3

PARAMETER	MANUFACTURER	MODEL NO.	ANALYZER PRINCIPLE	SENSITIVITY / ACCURACY	LINEARITY	SPECIAL NOTES	RESPONSE TIME	NOISE	PRECISION
O_2	MSA Instruments	4000	Electroconductivity Detection	+– 0.01%	< 2%	Galvanic Fuel Cell	90% Full Scale in 20 sec.	+– 1%	
CO_2	Infrared Industries	732	Non–Dispersive Infrared		< 2%		90% Full Scale in 20 sec.		
NO_x	Thermo Environmental Instruments Inc.	10	Chemiluminescent	0.05 ppm	+– 1% from 0.05 to 10,000	High range has 0_2 feed.	Approx. 1.5 sec NO mode Approx. 1.7 sec NO_x mode	< 1% of Full Scale	
CO	Thermo Environmental Instruments Inc.	48	Gas Filter Correlation	0.1 ppm	< +– 1%		95% Full Scale in < 60 sec.	< 0.05 ppm	> +– 0.1ppm
Gas Dilution System	Environics, Inc.	Series 2000	Computerized Mass Flow Controllers	+–0.05% Full Scale	NA	Operated between 10% and 90% of flow controller full scale operating range.	+–2.0% of target flow in 30 seconds	NA	+–0.2% Full Scale
CO_2 / High CO	Fuji – Milton Roy	ZRH	Non–Dispersive Infrared	2% of Full Scale / week	1% of Full Scale	CO_2 Range : 0–20 % CO Range : 0–1 %	90% Full Scale in 3 sec.	< 0.5% of Full Scale	CO_2: .5% Full Scale CO: 1% Full Scale

SECTION 4

CALCULATIONS

NOMENCLATURE

A_s	= Cross-sectional area of stack (ft^2)
A_n	= Cross-sectional area of nozzle (ft^2)
B_{ws}	= Water vapor in the gas stream, proportion by volume (dimensionless)
C_p	= Pitot tube coefficient (dimensionless)
dH	= Average pressure differential across the orifice meter (inches of water)
Md	= Dry molecular weight of stack gas (lb/lb-mole)
Ms	= Wet molecular weight of stack gas (lb/lb-mole)
N	= Normality of titrant (milliequivalents/ml)
dP	= Velocity pressure of stack gas (inches of water)
Pb	= Barometric pressure at sampling site (in. Hg)
Ps	= Absolute stack gas pressure (in. Hg)
Pstd	= Standard absolute pressure (29.92 in. Hg)
Qs(std)	= Dry volumetric stack gas flow rate, standard conditions (dscfm)
Ts	= Stack temperature (^oF)
Vm	= Dry gas volume as measured by dry gas meter (dcf)
Vm(std)	= Dry gas volume as measured by dry gas meter, corrected to standard conditions (dscf)
Vw(std)	= Volume of water vapor in the gas stream, corrected to standard conditions (scf)
Vlc	= Volume of water vapor condensed in impingers and silica gel (ml)
T(std)	= Standard temperature (^oF)
Tm	= Meter temperature (^oF)
SQ.RT.dP	= Square root of velocity pressure (dimensionless)
y	= Dry gas meter calibration factor (dimensionless)
Pstatic	= Static pressure of stack (in. H_2O)
Pstack	= Static pressure of stack (in. Hg)
I	= Isokinetic sample rate (percent)
vs	= Average velocity of the stack gas (ft/sec)
Qs	= Actual stack gas flow rate at stack conditions (ft^3/min)
Θ	= Total sampling time (min)
% O_2	= Percent oxygen by volume (dry basis)
% CO_2	= Percent carbon dioxide by volume (dry basis)
% CO	= Percent carbon monoxide by volume (dry basis)
% N_2	= Percent nitrogen by volume (dry basis)
Zcf	= Zero drift correction factor
Scf	= Span drift correction factor
Cz	= Zero correction concentration
MW	= Molecular weight (lb/lb-mole)
ppm	= Parts per million by volume

lb/MMBtu	= Emission concentration, pounds per million British thermal units
dscf/MMBtu	= Fuel factor, dry standard cubic feet per million British thermal units
gr/scf	= Emission concentration, grains per standard cubic foot
lb/hr	= Emission rate, pounds per hour
FHW	= Front Half Wash of sampling train
MF	= Mass Filter of sampling train
BHW	= Back Half Wash of Sampling train
gr/dscf	= Emission concentration, grains per dry standard cubic foot
ng	= Mass unit, nanograms
mg	= Mass unit, milligrams
g	= Mass unit, grams
ml	= Unit of volume, milliliters
L	= Unit of volume, liters
ul	= Unit of volume, microliters
H_2SO_4	= Chemical formula, sulfuric acid
$BaCl_2$	= Chemical formula, barium chloride
NaOH	= Chemical formula, sodium hydroxide
H_2S	= Chemical formula, hydrogen sulfide
FHS	= Front Half Sulfate of sampling train
BHS	= Back Half Sulfate of sampling train
F-Factor	= Fuel factor, volume of generated gases per unit of heat content (dscf/MMBtu)
^oF	= Degrees Fahrenheit
^oR	= Degrees Rankine
^oC	= Degrees Celsius
98.076	= Molecular weight of sulfuric acid
64.062	= Molecular weight of sulfur dioxide
46.006	= Molecular weight of nitrogen dioxide
28.010	= Molecular weight of carbon monoxide
60	= Conversion factor, minutes per hour
460	= Conversion factor, ^oF to ^oR
15.432	= Conversion factor, grains per gram
0.000143	= Converson factor, pounds per grain
32/98.076	= Conversion factor, equivalent weight of SO_2 to MW of H_2SO_4
1.60982	= Ideal Gas Law (lb-mole x dscf/ dscf/ ^oR x mg)
0.00000137	= Ideal Gas Law (lb-mole x $^oR/ft^3$)
0.280	= Molecular weight of N_2 or CO, divided by 100
0.320	= Molecular weight of O_2, divided by 100
0.440	= Molecular weight of CO_2, divided by 100
18.0	= Molecular weight of H_2O
32.064	= Equivalent weight of SO_2
85.49	= Pitot tube constant, ft/sec x $[(lb/lb\text{-}mole) \times (in.Hg)/((^oR) \times (in.H_2O))]^{0.5}$
8.223E-05	= Ideal gas constant (1.37E-06 lb-mole $^oR/ft^3$) x (60 min/hr)

EMISSION CALCULATIONS
GAS COMPONENTS

SYCAMORE COGEN
UNIT 1

DATA :

	Run 1	Run 2	Run 3	Average
Date	11-Feb-93	11-Feb-93	11-Feb-93	
Oxygen (%)	14.78	14.67	14.86	14.77
Qs(std), dscfm	453,480	445,028	458,071	452,193
F-Factor, dscf/MMBtu	8,526.37	8,526.37	8,526.37	8,526.37
NOx, ppm	38.26	40.29	41.43	39.99
CO, ppm	2.40	2.02	1.71	2.04
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	126.22	130.44	138.06	131.57
NOx, ppm @ 15 %O2	36.90	38.14	40.50	38.51
NOx, lb/MMBtu	0.1352	0.1397	0.1484	0.1411
CO, lb/hr	4.82	3.98	3.46	4.08
CO, ppm @ 15 %O2	2.31	1.91	1.67	1.96
CO, lb/MMBtu	0.0052	0.0043	0.0037	0.0044
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 - 15 %O2) / (20.9 - %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 - O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 60 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS
GAS COMPONENTS

SYCAMORE COGEN
UNIT 2

DATA :

	Run 1	Run 2	Run 3	Average
Date	11-Feb-93	11-Feb-93	11-Feb-93	
Oxygen (%)	15.10	14.84	14.74	14.89
Qs(std), dscfm	464,200	444,055	437,934	448,730
F-Factor, dscf/MMBtu	8,526.37	8,526.37	8,526.37	8,526.37
NOx, ppm	44.15	43.32	42.70	43.39
CO, ppm	1.04	0.96	0.95	0.98
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	149.11	139.95	136.04	141.70
NOx, ppm @ 15 %O2	44.88	42.18	40.92	42.66
NOx, lb/MMBtu	0.1644	0.1545	0.1499	0.1563
CO, lb/hr	2.13	1.89	1.84	1.95
CO, ppm @ 15 %O2	1.05	0.93	0.91	0.97
CO, lb/MMBtu	0.0023	0.0021	0.0020	0.0022
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 - 15 %O2) / (20.9 - %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 - O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 60 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS
GAS COMPONENTS

SYCAMORE COGEN
UNIT 2 (Retest)

DATA :

	Run 1	Run 2	Run 3	Average
Date	16-Feb-93	16-Feb-93	16-Feb-93	
Oxygen (%)	14.68	14.66	14.67	14.67
Qs(std), dscfm	439,430	440,835	439,911	440,059
F-Factor, dscf/MMBtu	8,526.37	8,526.37	8,526.37	8,526.37
NOx, ppm	38.13	36.92	36.42	37.16
CO, ppm	1.40	1.39	1.40	1.40
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	121.91	118.40	116.56	118.96
NOx, ppm @ 15 %O2	36.17	34.90	34.51	35.19
NOx, lb/MMBtu	0.1325	0.1279	0.1264	0.1289
CO, lb/hr	2.72	2.71	2.73	2.72
CO, ppm @ 15 %O2	1.33	1.31	1.33	1.32
CO, lb/MMBtu	0.0030	0.0029	0.0030	0.0029
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 - 15 %O2) / (20.9 - %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 - O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 60 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS
GAS COMPONENTS

SYCAMORE COGEN
UNIT 3

DATA :

	Run 1	Run 2	Run 3	Average
Date	12-Feb-93	12-Feb-93	12-Feb-93	
Oxygen (%)	14.67	14.80	14.76	14.75
Qs(std), dscfm	402,754	408,611	404,669	405,345
F-Factor, dscf/MMBtu	8,526.37	8,526.37	8,526.37	8,526.37
NOx, ppm	41.25	43.60	43.19	42.68
CO, ppm	1.31	0.96	1.03	1.10
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	120.88	129.60	127.14	125.87
NOx, ppm @ 15 %O2	39.09	42.20	41.50	40.93
NOx, lb/MMBtu	0.1432	0.1546	0.1521	0.1500
CO, lb/hr	2.34	1.74	1.84	1.97
CO, ppm @ 15 %O2	1.24	0.93	0.99	1.05
CO, lb/MMBtu	0.0028	0.0021	0.0022	0.0024
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 - 15 %O2) / (20.9 - %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 - O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 60 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS
GAS COMPONENTS

SYCAMORE COGEN
UNIT 4

DATA :

	Run 1	Run 2	Run 3	Average
Date	11-Feb-93	11-Feb-93	11-Feb-93	
Oxygen (%)	14.84	14.82	14.65	14.77
Qs(std), dscfm	454,387	453,348	441,682	449,806
F-Factor, dscf/MMBtu	8,526.37	8,526.37	8,526.37	8,526.37
NOx, ppm	37.96	36.34	36.45	36.92
CO, ppm	1.32	1.26	1.55	1.38
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	125.47	119.85	117.12	120.81
NOx, ppm @ 15 %O2	36.93	35.27	34.43	35.54
NOx, lb/MMBtu	0.1353	0.1292	0.1261	0.1302
CO, lb/hr	2.66	2.53	3.02	2.74
CO, ppm @ 15 %O2	1.28	1.22	1.46	1.32
CO, lb/MMBtu	0.0029	0.0027	0.0033	0.0030
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 - 15 %O2) / (20.9 - %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 - O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 60 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS – EPA
GAS COMPONENTS

SYCAMORE COGEN
UNIT 1

DATA :

	Run 1	Run 2	Run 3	Average
Date	11–Feb–93	11–Feb–93	11–Feb–93	
Oxygen (%)	14.78	14.67	14.86	14.77
Qs(std), dscfm	460,457	451,875	465,119	459,150
F–Factor, dscf/MMBtu	8,657.55	8,657.55	8,657.55	8,657.55
NOx, ppm	38.26	40.29	41.43	39.99
CO, ppm	2.40	2.02	1.71	2.04
SO2, ppm				
HC (non–methane), ppm				

CALCULATIONS :

NOx, lb/hr	126.22	130.44	138.06	131.57
NOx, ppm @ 15 %O2	36.90	38.14	40.50	38.51
NOx, lb/MMBtu	0.1352	0.1397	0.1484	0.1411
CO, lb/hr	4.82	3.98	3.46	4.08
CO, ppm @ 15 %O2	2.31	1.91	1.67	1.96
CO, lb/MMBtu	0.0052	0.0043	0.0037	0.0044
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb–Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 – 15 %O2) / (20.9 – %O2 measured)]

lb/MMBtu = F–Factor x MW x [(1.3711E–6 Lb–Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 – O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 68 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb–mole
CO, MW = 28.010 lb/lb–mole
SO2, MW = 64.058 lb/lb–mole
HC, MW = 16.043 lb/lb–mole

EMISSION CALCULATIONS – EPA
GAS COMPONENTS

SYCAMORE COGEN
UNIT 2

DATA :

	Run 1	Run 2	Run 3	Average
Date	11-Feb-93	11-Feb-93	11-Feb-93	
Oxygen (%)	15.10	14.84	14.74	14.89
Qs(std), dscfm	471,342	450,887	444,672	455,634
F-Factor, dscf/MMBtu	8,657.55	8,657.55	8,657.55	8,657.55
NOx, ppm	44.15	43.32	42.70	43.39
CO, ppm	1.04	0.96	0.95	0.98
SO2, ppm				
HC (non-methane), ppm				

CALCULATIONS :

NOx, lb/hr	149.11	139.95	136.04	141.70
NOx, ppm @ 15 %O2	44.88	42.18	40.92	42.66
NOx, lb/MMBtu	0.1644	0.1545	0.1499	0.1563
CO, lb/hr	2.13	1.89	1.84	1.95
CO, ppm @ 15 %O2	1.05	0.93	0.91	0.97
CO, lb/MMBtu	0.0023	0.0021	0.0020	0.0022
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb-Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 – 15 %O2) / (20.9 – %O2 measured)]

lb/MMBtu = F-Factor x MW x [(1.3711E-6 Lb-Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 – O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 68 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb-mole
CO, MW = 28.010 lb/lb-mole
SO2, MW = 64.058 lb/lb-mole
HC, MW = 16.043 lb/lb-mole

EMISSION CALCULATIONS – EPA
GAS COMPONENTS

SYCAMORE COGEN
UNIT 2 (Retest)

DATA :

	Run 1	Run 2	Run 3	Average
Date	16–Feb–93	16–Feb–93	16–Feb–93	
Oxygen (%)	14.68	14.66	14.67	14.67
Qs(std), dscfm	446,190	447,617	446,679	446,829
F–Factor, dscf/MMBtu	8,657.55	8,657.55	8,657.55	8,657.55
NOx, ppm	38.13	36.92	36.42	37.16
CO, ppm	1.40	1.39	1.40	1.40
SO2, ppm				
HC (non–methane), ppm				

CALCULATIONS :

NOx, lb/hr	121.91	118.40	116.56	118.96
NOx, ppm @ 15 %O2	36.17	34.90	34.51	35.19
NOx, lb/MMBtu	0.1325	0.1279	0.1264	0.1289
CO, lb/hr	2.72	2.71	2.73	2.72
CO, ppm @ 15 %O2	1.33	1.31	1.33	1.32
CO, lb/MMBtu	0.0030	0.0029	0.0030	0.0029
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb–Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 – 15 %O2) / (20.9 – %O2 measured)]

lb/MMBtu = F–Factor x MW x [(1.3711E–6 Lb–Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 – O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 68 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb–mole
CO, MW = 28.010 lb/lb–mole
SO2, MW = 64.058 lb/lb–mole
HC, MW = 16.043 lb/lb–mole

EMISSION CALCULATIONS – EPA
GAS COMPONENTS

SYCAMORE COGEN
UNIT 3

DATA :

	Run 1	Run 2	Run 3	Average
Date	12–Feb–93	12–Feb–93	12–Feb–93	
Oxygen (%)	14.67	14.80	14.76	14.75
Qs(std), dscfm	408,950	414,897	410,895	411,581
F–Factor, dsct/MMBtu	8,657.55	8,657.55	8,657.55	8,657.55
NOx, ppm	41.25	43.60	43.19	42.68
CO, ppm	1.31	0.96	1.03	1.10
SO2, ppm				
HC (non–methane), ppm				

CALCULATIONS :

NOx, lb/hr	120.88	129.60	127.14	125.87
NOx, ppm @ 15 %O2	39.09	42.20	41.50	40.93
NOx, lb/MMBtu	0.1432	0.1546	0.1521	0.1500
CO, lb/hr	2.34	1.74	1.84	1.97
CO, ppm @ 15 %O2	1.24	0.93	0.99	1.05
CO, lb/MMBtu	0.0028	0.0021	0.0022	0.0024
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb–Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 – 15 %O2) / (20.9 – %O2 measured)]

lb/MMBtu = F–Factor x MW x [(1.3711E–6 Lb–Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 – O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 68 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb–mole
CO, MW = 28.010 lb/lb–mole
SO2, MW = 64.058 lb/lb–mole
HC, MW = 16.043 lb/lb–mole

EMISSION CALCULATIONS – EPA
GAS COMPONENTS

SYCAMORE COGEN
UNIT 4

DATA :

	Run 1	Run 2	Run 3	Average
Date	11–Feb–93	11–Feb–93	11–Feb–93	
Oxygen (%)	14.84	14.82	14.65	14.77
Qs(std), dscfm	461,377	460,322	448,477	456,725
F–Factor, dscf/MMBtu	8,657.55	8,657.55	8,657.55	8,657.55
NOx, ppm	37.96	36.34	36.45	36.92
CO, ppm	1.32	1.26	1.55	1.38
SO2, ppm				
HC (non–methane), ppm				

CALCULATIONS :

NOx, lb/hr	125.47	119.85	117.12	120.81
NOx, ppm @ 15 %O2	36.93	35.27	34.43	35.54
NOx, lb/MMBtu	0.1353	0.1292	0.1261	0.1302
CO, lb/hr	2.66	2.53	3.02	2.74
CO, ppm @ 15 %O2	1.28	1.22	1.46	1.32
CO, lb/MMBtu	0.0029	0.0027	0.0033	0.0030
SO2, lb/hr				
SO2, ppm @ 15 %O2				
SO2, lb/MMBtu				
HC, lb/hr				
HC, ppm @ 15 %O2				
HC, lb/MMBtu				

EQUATIONS :

lb/hr = (0.00000137 Lb–Mole °R / ft3) x 60 min/hr x Qs(std) x MW x ppm / [T(std) + 460]

ppm @ 15 %O2 = ppm measured x [(20.9 – 15 %O2) / (20.9 – %O2 measured)]

lb/MMBtu = F–Factor x MW x [(1.3711E–6 Lb–Mole °R / ft3) / (T(std) + 460)] x [20.9 / (20.9 – O2%)] x ppm

CONSTANTS :

Standard Temp. T(std): 68 °F
Oxygen Correction : 15 % O2

NOx, MW = 46.005 lb/lb–mole
CO, MW = 28.010 lb/lb–mole
SO2, MW = 64.058 lb/lb–mole
HC, MW = 16.043 lb/lb–mole

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 1

Date : 11-Feb-93
Run No. : 1

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.70	14.70	3.72	3.72	37.80	37.86	2.50	2.50		
2	14.70	14.70	3.72	3.72	38.00	38.18	2.60	2.60		
3	14.70	14.70	3.72	3.72	37.60	37.90	2.50	2.49		
4	14.70	14.70	3.72	3.72	37.50	37.93	2.40	2.39		
5	14.75	14.75	3.72	3.72	37.50	38.05	2.40	2.39		
6	14.85	14.85	3.72	3.72	37.60	38.28	2.40	2.38		
7	14.88	14.88	3.72	3.72	37.50	38.30	2.30	2.28		
8	14.88	14.88	3.72	3.72	38.00	38.95	2.30	2.28		
9	14.88	14.88	3.72	3.72	37.80	38.87	2.30	2.28		
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30										
MEAN :		14.78		3.72		38.26		2.40		

Zero Check	0.00	0.00	0.30	0.00
Span Check	15.14	16.21	78.20	18.40
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.0	0.0	−3.7	1.1
Zero Drift, Zcf	0.00000	0.00000	0.03333	0.00000
Span Drift, Scf	0.00000	0.00000	−0.00409	0.00122

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 1

Date : 11-Feb-93
Run No. : 2

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.65	14.65	3.73	3.73	40.00	39.96	2.20	2.20		
2	14.68	14.68	3.73	3.73	40.00	39.88	2.20	2.20		
3	14.68	14.68	3.73	3.73	40.70	40.50	2.10	2.10		
4	14.68	14.68	3.73	3.73	40.70	40.42	2.10	2.10		
5	14.68	14.68	3.73	3.73	40.70	40.35	2.05	2.05		
6	14.68	14.68	3.73	3.73	40.70	40.27	2.00	2.00		
7	14.65	14.65	3.73	3.73	41.00	40.49	1.90	1.90		
8	14.65	14.65	3.73	3.73	41.00	40.41	1.80	1.80		
9	14.65	14.65	3.73	3.73	41.00	40.33	1.80	1.80		
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30										
MEAN :		14.67		3.73		40.29		2.02		

Zero Check	0.00	0.00	0.00	0.00
Span Check	15.14	16.21	82.30	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.0	0.0	1.8	0.0
Zero Drift, Zcf	0.00000	0.00000	0.00000	0.00000
Span Drift, Scf	0.00000	0.00000	0.00195	0.00000

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 1

Date : 11-Feb-93
Run No. : 3

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.75	14.75	3.64	3.64	41.30	41.27	1.76	1.76		
2	14.78	14.78	3.68	3.67	41.50	41.41	1.70	1.70		
3	14.83	14.83	3.68	3.67	41.70	41.56	1.76	1.76		
4	14.85	14.85	3.68	3.67	41.50	41.30	1.80	1.79		
5	14.89	14.89	3.68	3.66	41.50	41.24	1.75	1.74		
6	14.89	14.89	3.65	3.63	41.70	41.38	1.70	1.69		
7	14.92	14.92	3.65	3.62	41.70	41.33	1.65	1.64		
8	14.92	14.92	3.65	3.62	42.00	41.57	1.65	1.64		
9	14.95	14.95	3.65	3.62	42.30	41.81	1.65	1.64		
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MEAN :		14.86		3.64		41.43		1.71		

Zero Check	0.00	0.00	0.20	0.00
Span Check	15.14	16.37	81.70	18.35
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.0	1.0	0.8	0.8
Zero Drift, Zcf	0.00000	0.00000	0.02222	0.00000
Span Drift, Scf	0.00000	0.00110	0.00085	0.00092

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2

Date : 11-Feb-93
Run No. : 1

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	15.30	15.28	3.54	3.54	44.00	44.03	1.00	1.00		
2	15.30	15.23	3.54	3.54	44.30	44.39	1.00	1.00		
3	15.30	15.19	3.54	3.55	44.10	44.24	1.00	1.00		
4	15.30	15.14	3.54	3.55	44.20	44.40	1.00	0.99		
5	15.30	15.10	3.58	3.59	44.00	44.25	1.00	0.99		
6	15.30	15.05	3.58	3.59	44.00	44.31	1.00	0.99		
7	15.30	15.01	3.58	3.60	43.70	44.07	1.10	1.09		
8	15.30	14.96	3.58	3.60	43.40	43.82	1.20	1.18		
9	15.30	14.92	3.58	3.60	43.40	43.87	1.10	1.08		
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MEAN :		15.10		3.57		44.15		1.04		

Zero Check	0.15	0.00	0.30	0.00
Span Check	15.55	16.11	79.70	18.50
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	1.7	−0.6	−1.8	1.6
Zero Drift, Zcf	0.01667	0.00000	0.03333	0.00000
Span Drift, Scf	0.00191	−0.00069	−0.00203	0.00183

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2

Date : 11-Feb-93
Run No. : 2

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.85	14.85	3.56	3.56	43.80	43.80	1.00	0.99		
2	14.85	14.85	3.56	3.56	43.80	43.80	1.00	0.98		
3	14.85	14.85	3.56	3.56	44.00	44.00	1.00	0.96		
4	14.85	14.85	3.56	3.57	44.00	44.00	0.95	0.89		
5	14.85	14.85	3.56	3.57	43.50	43.50	1.00	0.93		
6	14.85	14.85	3.56	3.57	42.70	42.70	1.05	0.96		
7	14.82	14.82	3.56	3.57	42.70	42.70	1.09	0.99		
8	14.82	14.82	3.56	3.57	42.70	42.70	1.09	0.97		
9	14.82	14.82	3.56	3.58	42.70	42.70	1.09	0.96		
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30										
MEAN :		14.84		3.57		43.32		0.96		

Zero Check	0.00	0.00	0.00	0.15
Span Check	15.14	16.13	80.88	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.0	−0.5	0.0	−0.8
Zero Drift, Zcf	0.00000	0.00000	0.00000	0.01667
Span Drift, Scf	0.00000	−0.00055	0.00000	−0.00092

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2

Date : 11-Feb-93
Run No. : 3

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.85	14.84	3.56	3.56	43.00	43.02	0.90	0.91		
2	14.85	14.83	3.56	3.57	43.20	43.27	0.90	0.92		
3	14.85	14.81	3.56	3.57	43.00	43.12	0.90	0.93		
4	14.85	14.80	3.56	3.57	42.70	42.86	0.90	0.94		
5	14.80	14.73	3.56	3.58	42.70	42.91	0.90	0.95		
6	14.80	14.72	3.56	3.58	42.40	42.66	0.90	0.96		
7	14.78	14.69	3.56	3.58	42.00	42.30	0.90	0.97		
8	14.75	14.64	3.56	3.59	41.70	42.05	0.90	0.98		
9	14.75	14.63	3.56	3.59	41.70	42.09	0.90	0.99		
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MEAN :		14.74		3.58		42.70		0.95		

Zero Check	-0.15	0.00	0.09	-0.10
Span Check	15.28	16.07	80.00	18.14
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	1.9	-0.9	-1.2	0.2
Zero Drift, Zcf	-0.01667	0.00000	0.01000	-0.01111
Span Drift, Scf	0.00213	-0.00096	-0.00133	0.00024

Drift, Percent = [(Span Check – Zero Check) – Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value – [Zcf x (Point # – 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # – 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 3

Date : 12-Feb-93
Run No. : 1

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.65	14.65	3.68	3.68	40.70	40.74	1.40	1.40		
2	14.65	14.66	3.68	3.67	40.70	40.82	1.40	1.40		
3	14.65	14.66	3.68	3.67	40.70	40.89	1.30	1.30		
4	14.65	14.67	3.68	3.67	40.70	40.97	1.30	1.30		
5	14.65	14.67	3.68	3.66	40.90	41.25	1.40	1.40		
6	14.65	14.68	3.68	3.66	40.50	40.93	1.30	1.30		
7	14.65	14.68	3.68	3.66	41.30	41.82	1.30	1.30		
8	14.65	14.69	3.68	3.65	41.30	41.90	1.20	1.20		
9	14.65	14.69	3.68	3.65	41.30	41.98	1.20	1.20		
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MEAN :		14.67		3.66		41.25		1.31		

Zero Check	0.05	0.00	0.00	0.00
Span Check	15.09	16.36	79.50	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	−0.7	0.9	−1.7	0.0
Zero Drift, Zcf	0.00556	0.00000	0.00000	0.00000
Span Drift, Scf	−0.00073	0.00103	−0.00190	0.00000

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 3

Date : 12-Feb-93
Run No. : 2

Point #	O2, % Instrument Reading	O2, % Drift Corrected Reading	CO2, % Instrument Reading	CO2, % Drift Corrected Reading	NOx, ppm Instrument Reading	NOx, ppm Drift Corrected Reading	CO, ppm Instrument Reading	CO, ppm Drift Corrected Reading	SO2, ppm Instrument Reading	SO2, ppm Drift Corrected Reading
1	14.78	14.78	3.71	3.71	42.50	42.54	1.00	1.00		
2	14.78	14.79	3.71	3.71	42.50	42.62	1.00	1.00		
3	14.78	14.79	3.71	3.71	42.70	42.90	1.00	1.00		
4	14.78	14.80	3.71	3.71	43.00	43.29	0.95	0.95		
5	14.78	14.80	3.71	3.71	44.00	44.38	0.90	0.90		
6	14.78	14.81	3.71	3.71	43.70	44.16	0.95	0.95		
7	14.78	14.82	3.71	3.71	43.70	44.25	0.97	0.97		
8	14.78	14.82	3.71	3.71	42.90	43.52	0.95	0.95		
9	14.78	14.83	3.71	3.71	44.00	44.72	0.95	0.95		
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MEAN :		14.80		3.71		43.60		0.96		
Zero Check		0.00		0.00		0.00		0.00		
Span Check		15.09		16.21		79.50		18.20		
Initial Span Value		15.14		16.21		80.88		18.20		
Drift, Percent		−0.3		0.0		−1.7		0.0		
Zero Drift, Zcf		0.00000		0.00000		0.00000		0.00000		
Span Drift, Scf		−0.00037		0.00000		−0.00190		0.00000		

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2 (RETEST)

Date : 16-Feb-93
Run No. : 1

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.68	14.68	3.66	3.66	38.60	38.60	1.26	1.27		
2	14.68	14.68	3.66	3.66	37.70	37.70	1.40	1.42		
3	14.68	14.68	3.66	3.66	37.70	37.70	1.33	1.37		
4	14.68	14.68	3.66	3.65	37.90	37.90	1.33	1.38		
5	14.68	14.68	3.66	3.65	38.00	38.00	1.33	1.40		
6	14.68	14.68	3.66	3.65	38.20	38.20	1.33	1.41		
7	14.68	14.68	3.66	3.65	38.30	38.30	1.33	1.43		
8	14.68	14.68	3.66	3.65	38.40	38.40	1.33	1.45		
9	14.68	14.68	3.66	3.65	38.40	38.40	1.33	1.46		
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MEAN :		14.68		3.65		38.13		1.40		

Zero Check	0.07	0.05	0.00	−0.15
Span Check	15.14	16.10	80.88	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	−0.5	−1.0	0.0	0.8
Zero Drift, Zcf	0.00778	0.00556	0.00000	−0.01667
Span Drift, Scf	−0.00051	−0.00110	0.00000	0.00092

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2 (RETEST)

Date : 16-Feb-93
Run No. : 2

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.66	14.66	3.67	3.67	37.00	36.95	1.40	1.40		
2	14.66	14.66	3.67	3.67	37.25	37.09	1.40	1.40		
3	14.66	14.66	3.67	3.67	37.25	36.98	1.40	1.40		
4	14.66	14.66	3.65	3.65	37.32	36.95	1.35	1.35		
5	14.66	14.66	3.65	3.65	37.40	36.92	1.35	1.35		
6	14.66	14.66	3.65	3.65	37.45	36.87	1.40	1.40		
7	14.66	14.66	3.65	3.65	37.56	36.87	1.40	1.40		
8	14.66	14.66	3.65	3.65	37.64	36.84	1.40	1.40		
9	14.66	14.66	3.65	3.65	37.70	36.80	1.40	1.40		
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MEAN :		14.66		3.66		36.92		1.39		
Zero Check		0.06		0.00		0.00		0.00		
Span Check		15.14		16.21		82.98		18.20		
Initial Span Value		15.14		16.21		80.88		18.20		
Drift, Percent		-0.4		0.0		2.6		0.0		
Zero Drift, Zcf		0.00667		0.00000		0.00000		0.00000		
Span Drift, Scf		-0.00044		0.00000		0.00288		0.00000		

Drift, Percent = [(Span Check – Zero Check) – Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value – [Zcf x (Point # – 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # – 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 2 (RETEST)

Date : 16-Feb-93
Run No. : 3

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.65	14.65	3.59	3.59	36.70	36.70	1.40	1.40		
2	14.65	14.65	3.59	3.59	36.70	36.70	1.40	1.40		
3	14.67	14.68	3.59	3.59	36.70	36.71	1.40	1.40		
4	14.67	14.68	3.59	3.59	36.80	36.81	1.40	1.40		
5	14.67	14.68	3.59	3.59	36.80	36.81	1.40	1.40		
6	14.67	14.69	3.59	3.59	37.00	37.01	1.40	1.40		
7	14.65	14.67	3.59	3.59	36.00	36.02	1.40	1.40		
8	14.65	14.67	3.59	3.59	35.50	35.52	1.40	1.40		
9	14.65	14.68	3.59	3.59	35.50	35.52	1.40	1.40		
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MEAN :		14.67		3.59		36.42		1.40		

Zero Check	0.07	0.00	0.00	0.00
Span Check	15.11	16.21	80.83	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	−0.7	0.0	−0.1	0.0
Zero Drift, Zcf	0.00778	0.00000	0.00000	0.00000
Span Drift, Scf	−0.00073	0.00000	−0.00007	0.00000

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 3

Date : 12-Feb-93
Run No. : 3

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.80	14.80	3.72	3.72	43.70	43.69	1.05	1.04		
2	14.80	14.79	3.72	3.72	43.70	43.68	1.05	1.02		
3	14.80	14.78	3.72	3.72	43.50	43.47	1.10	1.05		
4	14.80	14.77	3.72	3.72	43.20	43.16	1.10	1.03		
5	14.80	14.76	3.72	3.72	43.00	42.95	1.10	1.01		
6	14.80	14.75	3.72	3.72	43.00	42.94	1.15	1.04		
7	14.80	14.74	3.72	3.72	43.00	42.93	1.15	1.02		
8	14.80	14.73	3.72	3.72	43.00	42.92	1.18	1.03		
9	14.80	14.73	3.72	3.72	43.00	42.91	1.18	1.01		
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MEAN :		14.76		3.72		43.19		1.03		

Zero Check	0.03	0.00	0.20	0.18
Span Check	15.22	16.21	80.88	18.43
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.3	0.0	−0.2	0.3
Zero Drift, Zcf	0.00333	0.00000	0.02222	0.02000
Span Drift, Scf	0.00037	0.00000	−0.00027	0.00031

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 4

Date : 11-Feb-93
Run No. : 1

Point #	O2, % Instrument Reading	O2, % Drift Corrected Reading	CO2, % Instrument Reading	CO2, % Drift Corrected Reading	NOx, ppm Instrument Reading	NOx, ppm Drift Corrected Reading	CO, ppm Instrument Reading	CO, ppm Drift Corrected Reading	SO2, ppm Instrument Reading	SO2, ppm Drift Corrected Reading
1	14.90	14.90	3.66	3.66	39.00	39.02	1.20	1.21		
2	14.90	14.89	3.66	3.65	38.70	38.76	1.20	1.23		
3	14.87	14.85	3.66	3.65	38.50	38.60	1.20	1.24		
4	14.87	14.85	3.66	3.64	38.50	38.65	1.20	1.26		
5	14.85	14.82	3.68	3.66	38.30	38.49	1.20	1.28		
6	14.85	14.82	3.68	3.65	37.50	37.72	1.20	1.29		
7	14.85	14.81	3.68	3.65	37.50	37.76	1.20	1.31		
8	14.85	14.80	3.68	3.64	36.00	36.29	1.40	1.53		
9	14.83	14.78	3.68	3.63	36.00	36.33	1.40	1.54		
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MEAN :		14.84		3.65		37.96		1.32		
Zero Check		-0.15		0.05		0.09		-0.15		
Span Check		15.20		16.25		80.00		18.05		
Initial Span Value		15.14		16.21		80.88		18.20		
Drift, Percent		1.4		-0.1		-1.2		-0.0		
Zero Drift, Zcf		-0.01667		0.00556		0.01000		-0.01667		
Span Drift, Scf		0.00154		-0.00007		-0.00133		-0.00000		

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 4

Date : 11-Feb-93
Run No. : 2

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	15.07	15.07	3.66	3.66	36.00	36.00	1.10	1.10		
2	15.07	15.07	3.66	3.66	36.20	36.19	1.15	1.15		
3	14.75	14.75	3.66	3.66	36.20	36.19	1.20	1.20		
4	14.75	14.75	3.66	3.66	36.30	36.28	1.25	1.25		
5	14.75	14.75	3.66	3.66	36.50	36.47	1.25	1.25		
6	14.75	14.75	3.66	3.66	37.50	37.47	1.30	1.30		
7	14.75	14.75	3.66	3.66	36.20	36.16	1.30	1.30		
8	14.75	14.75	3.66	3.66	36.20	36.16	1.40	1.40		
9	14.75	14.75	3.66	3.66	36.20	36.15	1.40	1.40		
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
MEAN :		14.82		3.66		36.34		1.26		

Zero Check	0.00	0.00	0.00	0.00
Span Check	15.14	16.21	81.00	18.20
Initial Span Value	15.14	16.21	80.88	18.20
Drift, Percent	0.0	0.0	0.1	0.0
Zero Drift, Zcf	0.00000	0.00000	0.00000	0.00000
Span Drift, Scf	0.00000	0.00000	0.00016	0.00000

Drift, Percent = [(Span Check – Zero Check) – Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value – [Zcf x (Point # – 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # – 0.5))]

GAS ANALYZER DATA

SYCAMORE COGEN
UNIT 4

Date : 11-Feb-93
Run No. : 3

	O2, %		CO2, %		NOx, ppm		CO, ppm		SO2, ppm	
	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading	Instrument Reading	Drift Corrected Reading
Point #										
1	14.73	14.73	3.66	3.66	36.70	36.72	1.40	1.40		
2	14.73	14.73	3.66	3.66	36.70	36.75	1.45	1.45		
3	14.70	14.70	3.66	3.66	36.70	36.79	1.45	1.45		
4	14.70	14.70	3.66	3.66	36.50	36.63	1.55	1.55		
5	14.67	14.67	3.66	3.67	36.50	36.66	1.60	1.61		
6	14.63	14.63	3.66	3.67	36.50	36.70	1.60	1.61		
7	14.60	14.60	3.66	3.67	36.00	36.23	1.60	1.61		
8	14.58	14.58	3.66	3.67	35.70	35.96	1.60	1.61		
9	14.55	14.55	3.66	3.67	35.30	35.59	1.60	1.61		
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
MEAN :		14.65		3.67		36.45		1.55		
Zero Check		0.00		0.00		0.30		0.00		
Span Check		15.14		16.16		79.80		18.05		
Initial Span Value		15.14		16.21		80.88		18.20		
Drift, Percent		0.0		-0.3		-1.7		-0.8		
Zero Drift, Zcf		0.00000		0.00000		0.03333		0.00000		
Span Drift, Scf		0.00000		-0.00034		-0.00190		-0.00092		

Drift, Percent = [(Span Check − Zero Check) − Calib. Gas] / Calib. Gas x 100

Zero Drift Correction Factor, Zcf = Zero Check / # of Readings

Span Drift Correction Factor, Scf = (% Drift / 100) / # of Readings

Cz, Zero Corr. Concentration = measured value − [Zcf x (Point # − 0.5)]

Drift Corrected Reading = Cz / [1 + (Scf x (Point # − 0.5))]

FUEL BASED CALCULATIONS

SYCAMORE COGENERATION COMPANY
UNIT 1

11-Feb-93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	14.78	43,247					934.438	8,526.37	453,480
2	14.67	43,204					933.505	8,526.37	445,028
3	14.86	43,114					931.560	8,526.37	458,071

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) − (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 − %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 60 °F

FUEL BASED CALCULATIONS

SYCAMORE COGENERATION COMPANY
UNIT 2

11-Feb-93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	15.10	41,954					906.513	8,526.37	464,200
2	14.84	41,933					906.046	8,526.37	444,055
3	14.74	42,037					908.302	8,526.37	437,934

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) − (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 − %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 60 °F

FUEL BASED CALCULATIONS

16-Feb-93

SYCAMORE COGENERATION COMPANY
UNIT 2 (Retest)

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	14.68	42,592					920.281	8,526.37	439,430
2	14.66	42,865					926.193	8,526.37	440,835
3	14.67	42,707					922.770	8,526.37	439,911

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) − (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 − %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 60 °F

FUEL BASED CALCULATIONS

12-Feb-93

SYCAMORE COGENERATION COMPANY
UNIT 3

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	14.67	39,100					844.829	8,526.37	402,754
2	14.80	38,840					839.228	8,526.37	408,611
3	14.76	38,718					836.584	8,526.37	404,669

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) − (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 − %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 60 °F

FUEL BASED CALCULATIONS

11-Feb-93

SYCAMORE COGENERATION COMPANY
UNIT 4

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	14.84	42,908					927.126	8,526.37	454,387
2	14.82	42,952					928.060	8,526.37	453,348
3	14.65	43,016					929.460	8,526.37	441,682

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) - (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 - %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 60 °F

FUEL BASED CALCULATIONS – EPA

SYCAMORE COGENERATION COMPANY
UNIT 1

11-Feb-93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	14.78	43,247					934.438	8,657.55	460,457
2	14.67	43,204					933.505	8,657.55	451,875
3	14.86	43,114					931.560	8,657.55	465,119

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) – (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 – %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 68 °F

FUEL BASED CALCULATIONS – EPA

SYCAMORE COGENERATION COMPANY
UNIT 2

11-Feb-93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F-Factor dscf/MMBTU	Qs(std) dscfm
1	15.10	41,954					906.513	8,657.55	471,342
2	14.84	41,933					906.046	8,657.55	450,887
3	14.74	42,037					908.302	8,657.55	444,672

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F-Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) – (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F-Factor x (20.9 / (20.9 – %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 68 °F

FUEL BASED CALCULATIONS – EPA

SYCAMORE COGENERATION COMPANY
UNIT 2 (Retest)

16–Feb–93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F–Factor dscf/MMBTU	Qs(std) dscfm
1	14.68	42,592					920.281	8,657.55	446,190
2	14.66	42,865					926.193	8,657.55	447,617
3	14.67	42,707					922.770	8,657.55	446,679

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F–Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) – (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F–Factor x (20.9 / (20.9 – %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 68 °F

FUEL BASED CALCULATIONS – EPA

SYCAMORE COGENERATION COMPANY
UNIT 3

12–Feb–93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F–Factor dscf/MMBTU	Qs(std) dscfm
1	14.67	39,100					844.829	8,657.55	408,950
2	14.80	38,840					839.228	8,657.55	414,897
3	14.76	38,718					836.584	8,657.55	410,895

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F–Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) – (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F–Factor x (20.9 / (20.9 – %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 68 °F

FUEL BASED CALCULATIONS – EPA

SYCAMORE COGENERATION COMPANY
UNIT 4

11–Feb–93

FUEL ANALYSIS DATA

Run #	Fuel Value (%), Moisture & Ash Free: Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur	GCV BTU/lb,dry	ft3/lb	lb/gal
1	70.91	22.21	1.48	5.39	0.00	21,607		
2	70.91	22.21	1.48	5.39	0.00	21,607		
3	70.91	22.21	1.48	5.39	0.00	21,607		

CALCULATIONS

Run #	Stack Gas Oxygen %	Fuel Gas Flowrate lb/hr	Fuel Gas Flowrate ft3/hr	Fuel Oil Flowrate lb/hr	Fuel Oil Flowrate gal/hr	Solid Fuel lb/hr	Heat Input MMBTU/hr	F–Factor dscf/MMBTU	Qs(std) dscfm
1	14.84	42,908					927.126	8,657.55	461,377
2	14.82	42,952					928.060	8,657.55	460,322
3	14.65	43,016					929.460	8,657.55	448,477

Heat Input, MMBTU/hr = (lb/hr fuel gas) x BTU/lb x MM/1E+06

= (ft3/hr fuel gas) x BTU/lb / (ft3/lb fuel gas) x MM/1E+06

= (lb/hr fuel oil) x BTU/lb x MM/1E+06

= (gal/hr fuel oil) x lb/gal x BTU/lb x MM/1E+06

= (lb/hr solid fuel) x BTU/lb x MM/1E+06

F–Factor, dscf/MMBTU = 1E+06 [(3.64 scf/lb)/% x (% H) + (1.53 scf/lb)/% x (% C) + (0.57 scf/lb)/% x (% S) + (0.14 scf/lb)/% x (% N) – (0.46 scf/lb)/% x (% O2)] / (BTU/lb) x [(Tstd + 460) / 528]

Qs(std), dscfm = MMBTU/hr x [F–Factor x (20.9 / (20.9 – %O2)) x (hr / 60 min)]

GCV = Gross Calorific Value of fuel, Btu/lb, dry

Standard Temperature = 68 °F

SECTION 5

QUALITY ASSURANCE

SECTION 5

QUALITY ASSURANCE

The report is reviewed for technical and editorial quality and for compliance with project requirements. Calculations are performed by computer programs designed for source testing. At least one set of calculations are performed manually to check results.

All equipment used in testing has been checked for proper maintenance and calibrated prior to testing. Test equipment calibrations are included in the Report appendix. The dry gas meter accuracy is expressed as gamma and is determined as the difference between the meter box dry gas meter and the wet test meter used for calibration. The results of the orifice calibration are expressed as the delta H@ (dH@) at various pressure drops (inches of water), as specified in EPA publication APTD-0576. EPA Quality Assurance Branch annual audits are performed with an orifice check of each of the dry gas meters used for volumetric sampling.

The analyzers employed for continuous monitoring of NO_x, CO, SO_2, CO_2, O_2, and HC are California Air Resources Board (CARB) approved instruments. Sampling system bias checks of the continuous monitor sampling system are performed using either EPA protocol 1 or NIST certified calibration gases. Calibration certificates are included in the report. All other required checks of the continuous monitor system are also performed.

All field samples are labeled and logged in on a chain-of-custody sheet. Chain-of-custody sheets remain with samples and document sample movement.

SAMPLE SYSTEM BIAS CHECK

COMPANY SYCAMORE COGEN DATE 2/12/93

TEST LOCATION UNIT-3 HRSG OUTLET OPERATOR T. DELFINO

COMMENTS :

Parameter	Instrument Full Scale	Span Gas Value	Scale	Internal Response	System Response	Percent Difference
O2 (%)	(0-25%)	0.00	Zero			
		15.14	Upscale	15.22	15.04	-0.72
CO2 (%)	(0-20%)	0.00	Zero			
		16.21	Upscale	16.20	16.21	1.05
NOx (ppm)	(0-100ppm)	0.00	Zero			
		80.88	Upscale	80.08	79.00	-1.88
CO (ppm)	(0-20ppm)	0.00	Zero			
		18.20	Upscale	18.43	18.49	0.30
SO2 (ppm)		0.00	Zero			
			Upscale			
HC (ppm)		0.00	Zero			
			Upscale			
		0.00	Zero			
			Upscale			

Percent Difference = [(System Response – Internal Response) / Instrument Full Scale] x 100

SAMPLE SYSTEM BIAS CHECK

COMPANY Sycamore cogen DATE 2/11/93

TEST LOCATION UNIT-4 OPERATOR T. Delfino

COMMENTS:

Parameter	Instrument Full Scale	Span Gas Value	Scale	Internal Response	System Response	Percent Difference
O2	(0-25%)	0.00	Zero	0.0		
(%)		15.14	Upscale	15.14	14.95	-0.76
CO2	(0-20%)	0.00	Zero	0.00		
(%)		16.21	Upscale	16.16	16.21	0.25
NOx	(0-100ppm)	0.00	Zero	0.3		
(ppm)		80.88	Upscale	79.8	79.4	-0.40
CO	(0-20ppm)	0.00	Zero	0.00		
(ppm)		18.20	Upscale	18.05	18.20	0.75
SO2		0.00	Zero			
(ppm)			Upscale			
HC		0.00	Zero			
(ppm)			Upscale			
		0.00	Zero			
			Upscale			

Percent Difference = [(System Response – Internal Response) / Instrument Full Scale] x 100

SAMPLE SYSTEM BIAS CHECK

COMPANY SYCAMORE COGENERATION DATE 2/16/93

TEST LOCATION UNIT 2 HRSG OUTLET STACK OPERATOR Troy Delfino

COMMENTS: UNIT - B

Parameter	Instrument Full Scale	Span Gas Value	Scale	Internal Response	System Response	Percent Difference
O2 (%)	0-25%	0.00	Zero	0.00		
			Upscale	15.11	15.05	-0.24
CO2 (%)	0-20%	0.00	Zero	0.00		
			Upscale	16.21	16.05	-0.80
NOx (ppm)	0-100 ppm	0.00	Zero	0.00		
			Upscale	80.83	79.91	-0.92
CO (ppm)	0-20	0.00	Zero	-0.07		
			Upscale	18.30	18.20	-0.50
SO2 (ppm)		0.00	Zero			
			Upscale			
HC (ppm)		0.00	Zero			
			Upscale			
		0.00	Zero			
			Upscale			

Percent Difference = [(System Response – Internal Response) / Instrument Full Scale] x 100

Scott Specialty Gases, Inc.

2600 CAJON BOULEVARD, SAN BERNARDINO, CA 92411 (909) 887-2571 FAX: (909) 887-0549

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENGINEERING SCIENCE
2520 PEGASUS
BAKERSFIELD, CA 93308-2200

Assay Laboratory
Scott Specialty Gases
2600 Cajon Boulevard
San Bernardino, CA 92411

Purchase Order BK034
Scott Project # 23659.003

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol 1 Procedure #G1, Section Number 3.0.4

Cylinder Number ALM022850 **Certification Date** 02-03-93 **Expiration Date** 08-93
Cylinder Pressure 1900psig **Previous Certification Dates** NONE

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Carbon Monoxide	8.352 ppm	± 1 % NIST Traceable
Nitric Oxide	8.338 ppm	± 2 % NIST Traceable
Balance Gas: Nitrogen		
NOX	8.46 ppm	

*Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
SRM1677	10-93	CAL5078	9.900 ppm
GMIS	03-93	ALM6975	22.52 ppm

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
Horiba / OPE-135D / 56565502	06-03-92	NDIR
TECO / 10AR / 14853-150	10-29-92	Chemi-Luminescent

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components — **First Triad Analysis** — **Second Triad Analysis** — **Calibration Curve**

Carbon Monoxide

First Triad Analysis — Date: 01-27-93 Response Units: MV

Z1=	0.00	R1=	19.5	T1=	16.5
R2=	19.5	Z2=	0.04	T2=	16.5
Z3=	00.7	T3=	16.5	R3=	19.5

Avg. Conc. of Cust Cyl. 8.352 ppm

Second Triad Analysis — Date: 02-03-93 Response Units: MV

Z1=	0.00	R1=	19.5	T1=	16.5
R2=	19.5	Z2=	0.00	T2=	16.5
Z3=	0.00	T3=	16.5	R3=	19.5

Avg. Conc. of Cust Cyl. 8.352 ppm

Calibration Curve — Concentration= Ax^2+Bx+C
A =0.00005011
B =0.5059
C =-0.01002

Nitric Oxide

First Triad Analysis — Date: 01-22-93 Response Units: MV

Z1=	0.02	R1=	89.87	T1=	33.46
R2=	90.41	Z2=	0.18	T2=	33.57
Z3=	0.20	T3=	33.57	R3=	90.45

Avg. Conc. of Cust Cyl. 8.347 ppm

Second Triad Analysis — Date: 02-02-93 Response Units: MV

Z1=	0.00	R1=	90.40	T1=	33.49
R2=	90.42	Z2=	0.00	T2=	33.42
Z3=	0.00	T3=	33.39	R3=	90.40

Avg. Conc. of Cust Cyl. 8.328 ppm

Calibration Curve — Concentration= Ax^2+Bx+C
A =-0.000504296
B =1.0489880
C =-0.292506

Date: Response Units:

Z1=	R1=	T1=
R2=	Z2=	T2=
Z3=	T3=	R3=

Avg. Conc. of Cust Cyl.

Date: Response Units:

Z1=	R1=	T1=
R2=	Z2=	T2=
Z3=	T3=	R3=

Avg. Conc. of Cust Cyl.

Concentration=

Special Notes

Analyst Joseph De La Torre

Scott Specialty Gases, Inc.

FAX . . .-887-0549
PHONE: 714-887-2571

2600 CAJON BLVD., SAN BERNARDINO, CA 92411

Shipped From: Scott SAN BERNARDINO,
Date Shipped 09/25/92
Our Project No: 21550
Your P.O. No: BFI008
Page 1 of 1
Expiration Date: 3/93

ENGINEERING SCIENCE
ATTN: JIM POLHAMUS
2520 PEGASUS
BAKERSFIELD CA 93308

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. AAL14590 Cylinder Pressure 1950 PSIG Certified Accuracy ±1% % NIST Traceable

COMPONENTS	CERTIFIED CONC	REFERENCE STD SRM/CRM NO.	CYL. NO.	CONC.	GAS ANALYZER MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
NITRIC OXIDE	23.00 PPM	GMIS TRACEABLE TO SRM2629A	ALM001512	21.83 PPM	THERMO-ELECTRON 10AR 14853-150	07/03/92	CHEMI-LUMINESCENT
NOX	23.78 PPM						
CARBON MONOXIDE	18.20 PPM	CRM1678	AAL5970	47.20 PPM	HORIBA AIA-24 4564403	06/03/92	INFRA-RED

BALANCE GAS NITROGEN

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component NITRIC OXIDE
First Analysis Date 09/14/92 Units mv

0.00	R	86.90	T	91.25	
86.85	Z	0.02	T	91.13	
0.00	T	91.05	R	86.63	

Mean Test Assay 22.92 PPM

Second Analysis Date 09/22/92 Units mv

0.00	R	86.93	T	91.90	
86.82	Z	0.02	T	91.79	
0.05	T	91.65	R	86.85	

Mean Test Assay 23.07 PPM

Component CARBON MONOXIDE
Date 09/15/92 Units mv

Z	00.00	R	92.5	T	35.8
R	92.5	Z	00.04	T	35.8
Z	00.02	T	35.8	R	92.5

Mean Test Assay 18.17 PPM

Date 09/21/92 Units mv

Z	00.00	R	92.5	T	35.9
R	95.0	Z	00.01	T	35.9
Z	00.02	T	35.9	R	95.0

Mean Test Assay 18.22 PPM

Component _____
Date _____ Units mv

Z		R		T	
R		Z		T	
Z		T		R	

Mean Test Assay _____

Date _____ Units mv

Z		R		T	
R		Z		T	
Z		T		R	

Mean Test Assay _____

Chronology: Date _____
Assay _____

Analyst M. JOHNSON/G. KING/L. OLDHAM

Approved By: _____
A.F. LANGE, Ph.D., MANAGER, QA

Scott Specialty Gases, Inc.

2600 CAJON BOULEVARD, SAN BERNARDINO, CA 92411 (909) 887-2571 FAX: (909) 887-0549

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS

Customer
ENGINEERING SCIENCE
P.O. BOX 2007
IRWINDALE, CA 91706

Assay Laboratory
Scott Specialty Gases
2600 Cajon Boulevard
San Bernardino, CA 92411

Purchase Order BK042
Scott Project # 0223658

ANALYTICAL INFORMATION

Certified to exceed the minimum specifications of EPA Protocol 1 Procedure #G1, Section Number 3.0.4

Cylinder Number ALM011324 **Certification Date** 2/2/93 **Expiration Date** 8/2/93
Cylinder Pressure 1900 psig **Previous Certification Dates**

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Uncertainty*
Nitric Oxide	12.50 ppm	± 1 % NIST Traceable
Carbon Monoxide	12.54 ppm	
Balance Gas: Nitrogen		
NOX	12.7 ppm	

*Analytical uncertainty is inclusive of usual known error sources which at least includes reference standard error & precision of the measurement processes.

REFERENCE STANDARD

Type	Expiration Date	Cylinder Number	Concentration
GMIS	3/93	ALM006975	22.52 ppm Nitric Oxide
GMIS	3/93	ALM026614	96.23 ppm Carbon Monoxide

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Principle
TECO / 10AR / 38644-258	11/12/92	Chemi-Luminescent
Horiba / OPE-135D / 56565502	11/20/92	NDIR

ANALYZER READINGS (Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

Components — **First Triad Analysis** — **Second Triad Analysis** — **Calibration Curve**

Nitric Oxide

First Triad Analysis — Date: 1/22/93 Response Units: mv
Z1= 0.06 R1= 89.87 T1= 49.98
R2= 90.06 Z2= 0.18 T2= 50.02
Z3= 0.20 T3= 50.02 R3= 90.05
Avg. Conc. of Cust Cyl. 12.50 ppm

Second Triad Analysis — Date: 2/2/93 Response Units: mv
Z1= 0.00 R1= 89.99 T1= 50.08
R2= 90.23 Z2= 0.06 T2= 50.14
Z3= 0.10 T3= 50.12 R3= 90.61
Avg. Conc. of Cust Cyl. 12.50 ppm

Calibration Curve — Concentration= Ax^2+Bx+C
A =-0.000050429
B =1.04899
C =-0.29251

Carbon Monoxide

First Triad Analysis — Date: 1/26/93 Response Units: mv
Z1= 0.00 R1= 97.0 T1= 13.2
R2= 97.0 Z2= 0.00 T2= 13.2
Z3= 0.00 T3= 13.2 R3= 97.0
Avg. Conc. of Cust Cyl. 12.52 ppm

Second Triad Analysis — Date: 2/2/93 Response Units: mv
Z1= 0.00 R1= 97.0 T1= 13.3
R2= 97.0 Z2= 0.00 T2= 13.2
Z3= 0.00 T3= 13.2 R3= 97.0
Avg. Conc. of Cust Cyl. 12.55 ppm

Calibration Curve — Concentration= $Ax^4+Bx^3+Cx^2+DX+E$
A =0.00000000689
B =-0.0000002034
C =0.0006717
D =0.93937
E =0.004755

Date: Response Units:
Z1= R1= T1=
R2= Z2= T2=
Z3= T3= R3=
Avg. Conc. of Cust Cyl.

Date: Response Units:
Z1= R1= T1=
R2= Z2= T2=
Z3= T3= R3=
Avg. Conc. of Cust Cyl.

Concentration=

Special Notes

Analyst Joseph De La Torre

SCOTT-MARRIN, INC.
2001 THIRD ST. • UNIT H • RIVERSIDE, CA 92507
TELEPHONE (714) 784-1240

REPORT OF ANALYSIS
EPA PROTOCOL GAS MIXTURES

ENSI01

TO:

D.J. WYMAN
ENGINEERING SCIENCES, INC.
P.O. BOX 2007
IRWINDALE, CA 91706

DATE : 12/23/91

CUSTOMER ORDER NUMBER: FI1234-24

PAGE 1

COMPONENT	CONCENTRATION(v/v)	REFERENCE STANDARD	ANALYZER MAKE,MODEL,S/N,DETECTION	EXPIRATION DATE	REPLICATE ANALYSIS DATA	
CYLINDER NO.:	CC12978					
			Monitor Labs Model 8440		12/12/91	12/19/91
[redacted]		GMIS	S/N 136	06/19/93	44.1 ppm	44.3 ppm
		Cylinder #	Continuous		44.1 ppm	44.2 ppm
Nitrogen,O2-Free Balance		CC99513	Chemiluminescence		44.0 ppm	44.1 ppm
Cylinder Pressure: 2000 psig		@ 49.1 ppm	Last Cal Date: 11/25/91		Mean: 44.1 ppm	44.2 ppm

ppm = umole/mole % = mole-%

The above analyses were performed in accordance with EPA-1987 Traceability Protocol # 1, Section 3.0.4, Procedure G1.

Analyst: B.E. Gross

Approved: J.T. Marrin

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

Scott Specialty Gases, Inc.

FAX 714-887-0549
PHONE: 714-887-2571

2600 CAJON BLVD., SAN BERNARDINO, CA 92405

Shipped From: Scott SAN BERNARDINO, CA
Date Shipped 12/3/92
Our Project No: 22596
Your P.O. No: BKG0002
Page 1 of 1
Expiration Date: 5/93

ENGINEERING SCIENCE
ATTN: JIM POLHAMUS
2520 PEGASUS
BAKERSFIELD CA 93308

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. ALM033868 Cylinder Pressure 1950 PSIG Certified Accuracy ±1% % NBS Traceable

COMPONENTS	CERTIFIED CONC	REFERENCE STD SRM/CRM NO.	REFERENCE STD CYL. NO.	REFERENCE STD CONC.	GAS ANALYZER MAKE/MODEL/SERIAL NO.	GAS ANALYZER LAST CAL. DATE	GAS ANALYZER ANALYTICAL PRINCIPLE
NITRIC OXIDE	78.71 PPM	GMIS TRACEABLE TO CRM1684B	ALM003667	95.55 PPM	THERMO-ELECTRON 10AR 14853-150	10/29/92	CHEMI-LUMINESC
NOX	80.88 PPM						
CARBON MONOXIDE	83.21 PPM	CRM1679	ALM010524	96.67 PPM	HORIBA AIA-24 4564403	10/17/92	INFRA-RED

BALANCE GAS NITROGEN

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component NITRIC OXIDE
First Analysis Date 11/19/92 Units mv
Z 0.00 R 95.25 T 77.30
R 95.49 Z -0.05 T 78.15
Z -0.03 T 78.00 R 95.26
Mean Test Assay 78.69 PPM
Second Analysis Date 12/1/92 Units mv
Z 0.00 R 96.92 T 79.13
R 96.93 Z -0.05 T 79.05
Z -0.02 T 79.03 R 96.91
Mean Test Assay 78.73 PPM

Component CARBON MONOXIDE
Date 11/20/92 Units mv
Z 00.00 R 39.4 T 34.0
R 39.4 Z 00.00 T 34.0
Z 00.01 T 34.0 R 39.4
Mean Test Assay 83.08 PPM
Date 11/30/92 Units mv
Z 00.00 R 39.4 T 34.1
R 39.4 Z 00.02 T 34.1
Z 00.01 T 34.1 R 39.4
Mean Test Assay 83.33 PPM

Component
Date Units mv
Z R T
R Z T
Z T R
Mean Test Assay
Date Units mv
Z R T
R Z T
Z T R
Mean Test Assay

Chronology: Date
Assay

Analyst G. KING/J. DE LA TORRE

Approved By: A.F. LANGE, Ph.D., MANAGER,

Scott Specialty Gases, Inc.

FAX 714-887-0549
PHONE: 714-887-2571

2600 CAJON BLVD., SAN BERNARDINO, CA 92411

Shipped From: Scott SAN BERNARDINO, CA
Date Shipped 10/5/92
Our Project No: 0221822
Your P.O. No: BKG0001
Page 1 of 1
Expiration Date: 4/94

ENGINEERING SCIENCE
2520 PEGASUS
BAKERSFIELD, CA 93308-5003

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. AIM027283 Cylinder Pressure 1800 PSIG Certified Accuracy ±1% % NIST Trac

COMPONENTS	CERTIFIED CONC	REFERENCE STD SRM/CRM NO.	CYL. NO.	CONC.	GAS ANALYZER MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
CARBON DIOXIDE	16.21 %	CRM1675	AIM001136	14.08%	HORIBA PRI2000 406004	6/3/92	INFRA RED
OXYGEN	7.087%	CRM2658	AIM017513	9.560%	BECKMAN 755 100410	6/3/92	PARAMAGNETIC

BALANCE GAS NITROGEN

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component CARBON DIOXIDE
First Analysis Date 10/5/92 Units mv

Z 00.0	R 72.7	T 78.6
R 72.7	Z 00.0	T 78.6
Z 00.0	T 78.6	R 72.7

Mean Test Assay 16.21 %

Second Analysis Date ____ Units mv

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component OXYGEN
Date 10/5/92 Units mv

Z 00.0	R 92.2	T 68.5
R 92.2	Z 00.0	T 68.5
Z 00.0	T 68.5	R 92.2

Mean Test Assay 7.087%

Date ____ Units mv

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Component ____
Date ____ Units mv

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Date ____ Units mv

Z	R	T
R	Z	T
Z	T	R

Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst F. VILLAMAS

Approved By: [signature]
A.F. LANGE, Ph.D., MANAGER, QA

Scott Specialty Gases, Inc.

FAX 714-887-0549
PHONE: 714-887-2571

2600 CAJON BLVD., SAN BERNARDINO, CA 92411

Shipped From: Scott SAN BERNARDINO, CA
Date Shipped 10/14/92
Our Project No: 22021
Your P.O. No: BK033
Page 1 of 1
Expiration Date: 4/94

ENGINEERING SCIENCE
ATTN: GARY MCRAE
2520 PEGASUS
BAKERSFIELD CA 93308

CERTIFICATE OF ANALYSIS – EPA PROTOCOL GASES

Certified Per Traceability Protocol No. 1 Procedure No. G1 Cylinder No. ALM011705 Cylinder Pressure 2000 PSIG Certified Accuracy ±1% % NIST Traceable

COMPONENTS	CERTIFIED CONC	REFERENCE STD SRM/CRM NO.	CYL. NO.	CONC.	GAS ANALYZER MAKE/MODEL/SERIAL NO.	LAST CAL. DATE	ANALYTICAL PRINCIPLE
CARBON DIOXIDE	8.002%	CRM1675	ALM001136	14.08%	OPE-135C	9/17/92	INFRA-RED
OXYGEN	15.14%	CRM2659	ALM017573	20.63%	OPE335	8/27/92	PARAMAGNETIC

BALANCE GAS NITROGEN

ANALYZER READINGS: Z = Zero Gas T = Test Gas R = Reference Gas

Component CARBON DIOXIDE
First Analysis Date 10/6/92 Units mv
Z 0.00 R 95.5 T 67.3
R 95.5 Z 0.00 T 67.2
Z 0.00 T 67.3 R 95.5
Mean Test Assay 8.002%

Second Analysis Date ____ Units mv
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Component OXYGEN
Date 10/6/92 Units mv
Z 0.00 R 83.7 T 61.3
R 83.7 Z 0.00 T 61.3
Z 0.01 T 61.2 R 83.7
Mean Test Assay 15.14%

Date ____ Units mv
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Component ____
Date ____ Units mv
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Date ____ Units mv
Z ____ R ____ T ____
R ____ Z ____ T ____
Z ____ T ____ R ____
Mean Test Assay ____

Chronology: Date ____
Assay ____

Analyst J. DE LA TORRE

Approved By: [signature]
A.F. LANGE, Ph.D., MANAGER, O

ENGINEERIN SCIENCE, INC.
2520 Pegasus Drive
Bakersfield, CA 93308
(805) 393-0272

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Project Manager	Samples Sent To:	Analysis Required				
WA 346	Sycamore Cogen	T. Delfino	Zalco Lab	CHONS	GCV			
Samples Collected By: T. Delfino	Regulatory Agency (EPA, CARB, SCAQMD, etc.): SJVAPCD		By: T. Delfino					

ES Lab Control No.	Test Date	Field Sample ID (Method-Run#-Sample Source)	Sample Amount	Sample Medium	Comments					
BK9302004	2/12/93	Fuel gas - ALL - UNIT#4				Compliance				
BK9302005	"	Back-up sample					"			

Relinquished By: (Sign & Print)	Date/Time	Received By: (Sign & Print)	Comments:
Troy Delfino Phone: (805) 393-0272	2-17-93 1600 hrs	Of: Zalco	
Relinquished By: (Sign & Print) Phone:	Date/Time	Received By: (Sign & Print) Of:	Comments:
Relinquished By: (Sign & Print) Phone:	Date/Time	Received By: (Sign & Print) Of:	Comments:

APPENDIX A

FIELD DATA

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT SYCAMORE COGEN. CEM VAN NO. 3 DATE 2/11/93
TEST LOCATION UNIT - 1 OUTLET STACK OPERATOR T. Delfino

O2, % (0-25%) f/s
Calibration Gases :
High 20.90 Cyl. # CC67257
Mid 15.14 Cyl. # 011705
Low 7.187 Cyl. # 027283

CO2, % (0-20%) f/s
Calibration Gases :
High 16.21 Cyl. # 027283
Mid Cyl. #
Low Cyl. #

NOx, ppm (0-100 ppm) f/s
Calibration Gases :
High 80.88 Cyl. # 033868
Mid 44.20 Cyl. # 12978
Low 23.78 Cyl. # 14590

CO, ppm 0-20ppm
Calibration Gases :
High 18.20 Cyl. # 14590
Mid 12.54 Cyl. # 011324
Low 8.352 Cyl. # 022850

SO2, ppm
Calibration Gases :
High Cyl. #
Mid Cyl. #
Low Cyl. #

Calibration Gases :
High Cyl. #
Mid Cyl. #
Low Cyl. #

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	16.21			Span gas values used for test.
0730 - 0735		14.70	3.72	37.8	2.50			RUN - 1 / UNIT - 1
0735 - 0740		14.70	3.72	38.0	2.60			
0740 - 0745		14.70	3.72	37.6	2.50			
0745 - 0750		14.70	3.72	37.5	2.40			
0750 - 0755		14.75	3.72	37.5	2.40			
0755 - 0800		14.85	3.72	37.6	2.40			
0800 - 0805		14.88	3.72	37.5	2.30			
0805 0810		14.88	3.72	38.0	2.30			
0810 - 0815		14.88	3.72	37.8	2.30			
CALIBRATE		0.00	0.00	0.30	0.00			zero check
		15.14	16.21	78.20	18.40			SPAN check

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT: SYCAMORE COGEN
TEST LOCATION: UNIT - 1 / Outlet Stack
CEM VAN NO.: 3
DATE: 2/11/93
OPERATOR: T. DELFINO

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	16.21			Span gas values used for test.
0835-0840		~~14.65~~ 14.65	3.73	40.0	2.20			RUN-2 / UNIT-1
0840-0845		14.68	3.73	40.0	2.20			
0845-0850		14.68	3.73	40.7	2.10			
0850-0855		14.68	3.73	40.7	2.10			
0855-0900		14.68	3.73	40.7	2.05			
0900-0905		14.68	3.73	40.7	2.00			
0905-0910		14.65	3.73	41.0	1.90			
0910-0915		14.65	3.73	41.0	1.80			
0915-0920		14.65	3.73	41.0	1.80			
CALIBrate		0.00	0.00	0.00	0.0			ZERO CHECK
		15.14	16.21	82.3	18.20			SPAN CHECK
0930-0935		14.75	3.64	41.3	1.76			RUN-3 / UNIT-1
0935-0940		14.78	3.68	41.5	1.70			
0940-0945		14.83	3.68	41.7	1.76			
0945-0950		14.85	3.68	41.5	1.80			
0950-0955		14.89	3.68	41.5	1.75			
0955-1000		14.89	3.65	41.7	1.70			
1000-1005		14.92	3.65	41.7	1.68			
1005-1010		14.92	3.65	42.0	1.65			
1010-1015		14.95	3.65	42.3	1.65			
CALIBrate		0.00	0.00	0.2	0.00			zero check
		15.14	16.37	81.7	18.35			SPAN check

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT: Sycamore Cogen
TEST LOCATION: UNIT - 2 Outlet Stack
CEM VAN NO.: 3
DATE: 2/11/93
OPERATOR: T. DeHart

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20	—		Span gas values used for test.
1100 - 1105		15.30	3.54	44.0	1.00			RUN - 1 / Unit -2
1105 - 1110		15.30	3.54	44.3	1.00			
1110 - 1115		15.30	3.54	44.1	1.00			Fuel Rate 11.672
1115 - 1120		15.30	3.54	44.2	1.00			
1120 - 1125		15.30	3.58	44.0	1.00			
1125 - 1130		15.30	3.58	44.0	1.00			
1130 - 1135		15.30	3.58	43.7	1.10			
1135 - 1140		15.30	3.58	43.4	1.20			
1140 - 1145		15.30	3.58	43.4	1.10			
~~1150~~		x̄ = 15.30		x̄ = 43.9				
Calibrate		0.15	0.00	0.30	0.00			Zero Check
		15.55	16.11	79.7	18.50			SPAN Check
1220 - 1225		14.85	3.56	43.8	1.00			RUN - 2 / UNIT - 2
1225 - 1230		14.85	3.56	43.8	1.00			
1230 - 1235		14.85	3.56	44.0	1.00			
1235 - 1240		14.85	3.56	44.0	0.95			
1240 - 1245		14.85	3.56	43.5	1.00			
1245 - 1250		14.85	3.56	42.7	1.05			
1250 - 1255		14.82	3.56	42.7	1.09			
1255 - 1300		14.82	3.56	42.7	1.09			
1300 - 1305		14.82	3.56	42.7	1.09			
				x̄ = 43.32				
Calibrate		0.00	0.00	0.0	0.15			Zero Check
		15.14	16.13	80.88	18.20			SPAN Check

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT: SYCAMORE COGEN
TEST LOCATION: UNIT - B outlet Stack
CEM VAN NO. 3
DATE: 2/11/93
OPERATOR: T. DECFINO

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20	—		Span gas values used for test.
1325-1330		14.85	3.56	43.0	0.90			RUN-3 UNIT-2
1330-1335		14.85	3.56	43.2	0.90			
1335-1340		14.85	3.56	43.0	0.90			
1340-1345		14.85	3.56	42.7	0.90			
1345-1350		14.80	3.56	42.7	0.90			
1350-1355		14.80	3.56	42.9	0.90			
1355-1400		14.78	3.56	42.0	0.90			
1400-1405		14.75	3.56	41.7	0.90			
1405-1410		14.75	3.56	41.7	0.90			
CALIBRATE		-0.15	0.00	0.09	-0.10			zero check
		15.28	16.07	80.00	18.14			SPAN check
1530-1535		14.90	3.66	39.0	1.20			RUN-1 / UNIT-4
1535-1540		14.90	3.66	38.7	1.20			
1540-1545		14.87	3.66	38.5	1.20			
1545-1550		14.87	3.66	38.5	1.20			
1550-1555		14.85	3.68	38.3	1.20			
1555-1600		14.85	3.68	37.5	1.20			
1600-1605		14.85	3.68	37.5	1.20			
1605-1610		14.86	3.68	36.0	1.40			
1610-1615		14.83	3.68	36.0	1.40			
CALIBRATE		-0.15	0.05	0.09	-0.15			zero check
		15.20	16.25	80.00	18.05			SPAN check

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT: SYCAMORE
TEST LOCATION: UNIT-4 ARSG OUTLET STACK
CEM VAN NO. 3
DATE: 2/11/93
OPERATOR: 1

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20			Span gas values used for test.
1635 - 1640		15.07	3.66	36.0	1.10			RUN - 2 / UNIT - 4
1640 - 1645		15.07	3.66	36.2	1.15			
1645 - 1650		14.75	3.66	36.2	1.20			
1650 - 1655		14.75	3.66	36.3	1.25			
1655 - 1700		14.75	3.66	36.5	1.25			
1700 - 1705		14.75	3.66	37.5	1.30			
1705 - 1710		14.75	3.66	36.2	1.30			
1710 - 1715		14.75	3.66	36.2	~~1.40~~ 1.40			
1715 - 1720		14.76	3.66	36.2	1.40			
CALIBRATE		0.0	0.00	0.0	0.00			zero check
		15.14	16.21	81.0	18.20			SPAN check
1730 - 1735		14.73	3.66	36.7	1.40			RUN-3 / UNIT-4
1735 - 1740		14.73	3.66	36.7	1.45			
1740 - 1745		14.70	3.66	36.7	1.45			
1745 - 1750		14.70	3.66	36.5	1.55			
1750 - 1755		14.67	3.66	36.5	1.60			
1755 - 1800		14.63	3.66	36.5	1.60			
1800 - 1805		14.60	3.66	36.0	1.60			
1805 - 1810		14.58	3.66	35.7	1.60			
1810 - 1815		14.55	3.66	35.3	1.60			
CALIBRATE		0.0	0.00	0.3	0.00			zero check
		15.14	16.16	79.8	18.05			SPAN check
		14.95	16.21	79.4	18.20			SAMPLE BIAS check

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ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT SYCAMORE
TEST LOCATION UNIT - 3
CEM VAN NO. 3
DATE 2/12/93
OPERATOR T. DELFINO

O2, % (0-25%)			
Calibration Gases :			
High		Cyl. #	
Mid	15.14	Cyl. #	011705
Low		Cyl. #	

CO2, % (0-20%)			
Calibration Gases :			
High	16.21	Cyl. #	027283
Mid		Cyl. #	
Low		Cyl. #	

NOx, ppm (0-100ppm)			
Calibration Gases :			
High	80.88	Cyl. #	033868
Mid		Cyl. #	
Low		Cyl. #	

CO, ppm (0-20 ppm)			
Calibration Gases :			
High	18.20	Cyl. #	14590
Mid		Cyl. #	
Low		Cyl. #	

SO2, ppm			
Calibration Gases :			
High		Cyl. #	
Mid		Cyl. #	
Low		Cyl. #	

Calibration Gases :			
High		Cyl. #	
Mid		Cyl. #	
Low		Cyl. #	

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20			Span gas values used for test.
0900 - 0905		14.65	3.68	40.7	1.40			RUN - 1 / UNIT - 3
0905 - 0910		14.65	3.68	40.7	1.40			
0910 - 0915		14.65	3.68	40.7	1.30			
0915 - 0920		14.65	3.68	40.7	1.30			
0920 - 0925		14.65	3.68	40.9	1.40			
0925 - 0930		14.65	3.68	40.5	1.30			
0930 - 0935		14.65	3.68	41.3	1.30			
0935 - 0940		14.65	3.68	41.3	1.20			
0940 - 0945		14.65	3.68	41.3	1.20			
CALIBRATE		0.05	0.00	0.00	0.00			zero check
		15.09	16.36	79.50	18.20			span check

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT Sycamore
TEST LOCATION Unit -3
CEM VAN NO. 3
DATE 2/12/93
OPERATOR [illegible] T. DeHino

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20			Span gas values used for test.
1000-1005		14.78	3.71	42.5	1.10			Run-2 / unit-3
1005-1010		14.78	3.71	42.5	1.00			
1010-1015		14.78	3.71	42.7	1.00			
1015-1020		14.78	3.71	43.0	0.95			
1020-1025		14.78	3.71	44.0	0.90			
1025-1030		14.78	3.71	43.7	0.95			
1030-1036		14.78	3.71	43.7	0.97			
1035-1040		14.78	3.71	42.9	0.95			
1040-1045		14.78	3.71	44.0	0.95			
Calibrate		0.00	0.00	0.00	0.00			zero check
		15.09	16.21	79.5	18.20			Span check
1055-1100		14.80	3.72	43.7	1.05			Run-3 / unit-3
1100-1105		14.80	3.72	43.7	1.05			
1105-1110		14.80	3.72	43.5	1.10			
1110-1115		14.80	3.72	43.2	1.10			
1115-1120		14.80	3.72	43.0	1.10			
1120-1125		14.80	3.72	43.0	1.15			
1125-1130		14.80	3.72	43.0	1.15			
1130-1135		14.80	3.72	43.0	1.18			
1135-1140		14.80	3.72	43.0	1.18			
Calibrate		0.03	0.00	0.20	0.18			zero check
		15.22	16.21	80.88	18.43			Span check
		15.04	16.00	79.00	18.49			Sample Bias check

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ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT: SYCAMORE COGEN.
CEM VAN NO.: 3
DATE: 2/16/93
TEST LOCATION: UNIT-2 Outlet Stack
OPERATOR: T. DeLfino

O2, %
Calibration Gases :
High 15.14 Cyl. # 011705
Mid 7.087 Cyl. # 027283
Low Cyl. #

CO2, %
Calibration Gases :
High 16.21 Cyl. # 027283
Mid Cyl. #
Low Cyl. #

NOx, ppm
Calibration Gases :
High 80.88 Cyl. # 033868
Mid 44.20 Cyl. # 12978
Low 23.78 Cyl. # 14590

CO, ppm
Calibration Gases :
High 18.20 Cyl. # 14590
Mid Cyl. #
Low Cyl. #

SO2, ppm
Calibration Gases :
High Cyl. #
Mid Cyl. #
Low Cyl. #

Calibration Gases :
High Cyl. #
Mid Cyl. #
Low Cyl. #

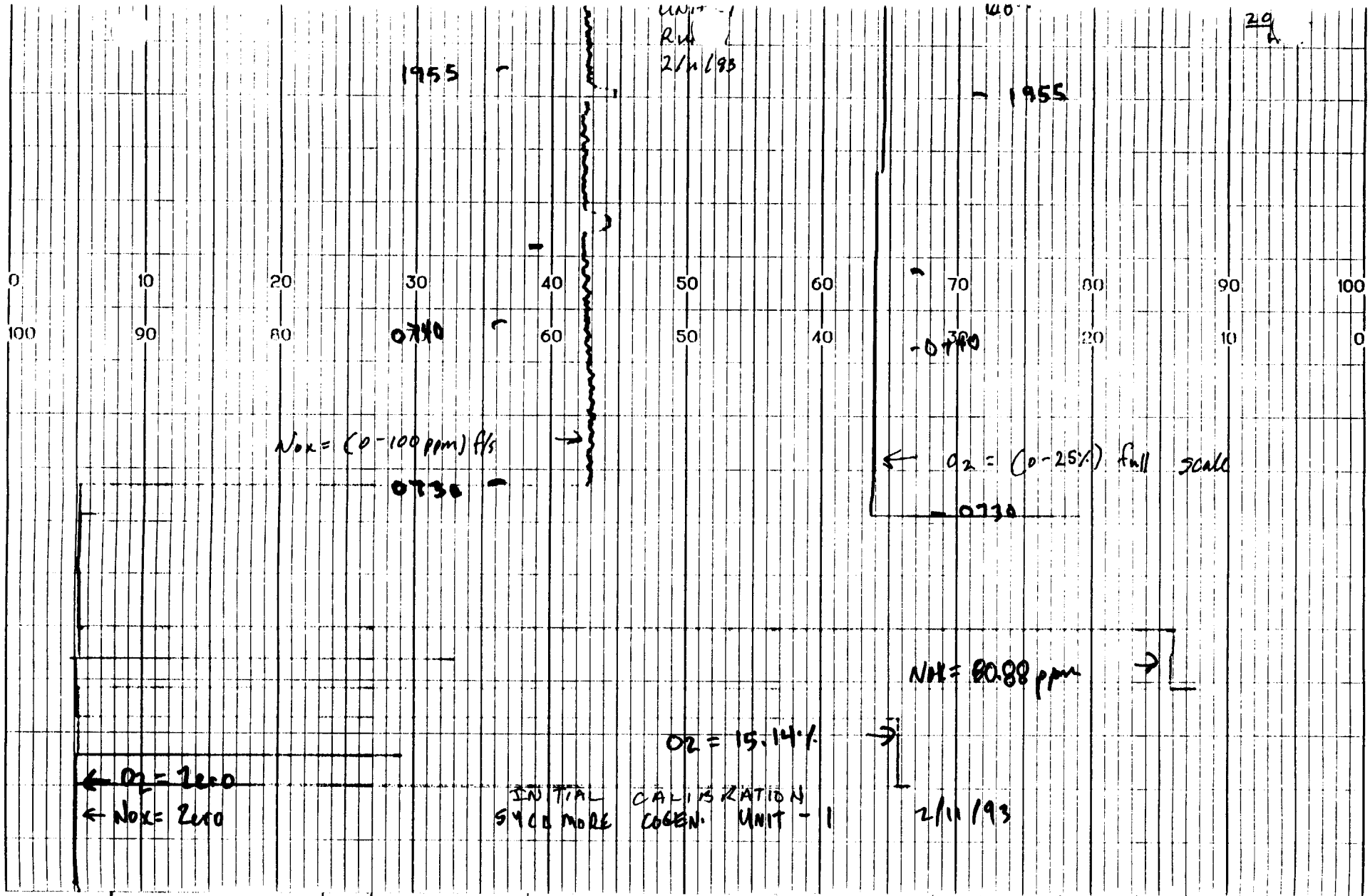
TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20	—		Span gas values used for test.
		15.14	16.21	80.88	18.20			HIGH LINEARITY Check
		7.20	8.24	44.30	12.54			MID
		0.00	0.03	23.34	8.42			LOW
				0.20	0.00			Zero
1100-1105		14.68	3.66	38.6	1.26			RUN-1 UNit-2
1105-1110		14.68	3.66	37.7	1.40			
1110-1115		14.68	3.66	37.7	1.33			
1115-1120		14.68	3.66	37.9	1.33			
1120-1125		14.68	3.66	38.0	1.33			
1125-1130		14.68	3.66	38.2	1.33			
1130-1135		14.68	3.66	38.3	1.33			
1135-1140		14.68	3.66	38.40	1.33			
1140-1145		14.68	3.66	38.90	1.33			
		0.07	0.05	0.0	-0.15			Zero Check
		15.14	16.10	80.88	18.20			SPAN Check

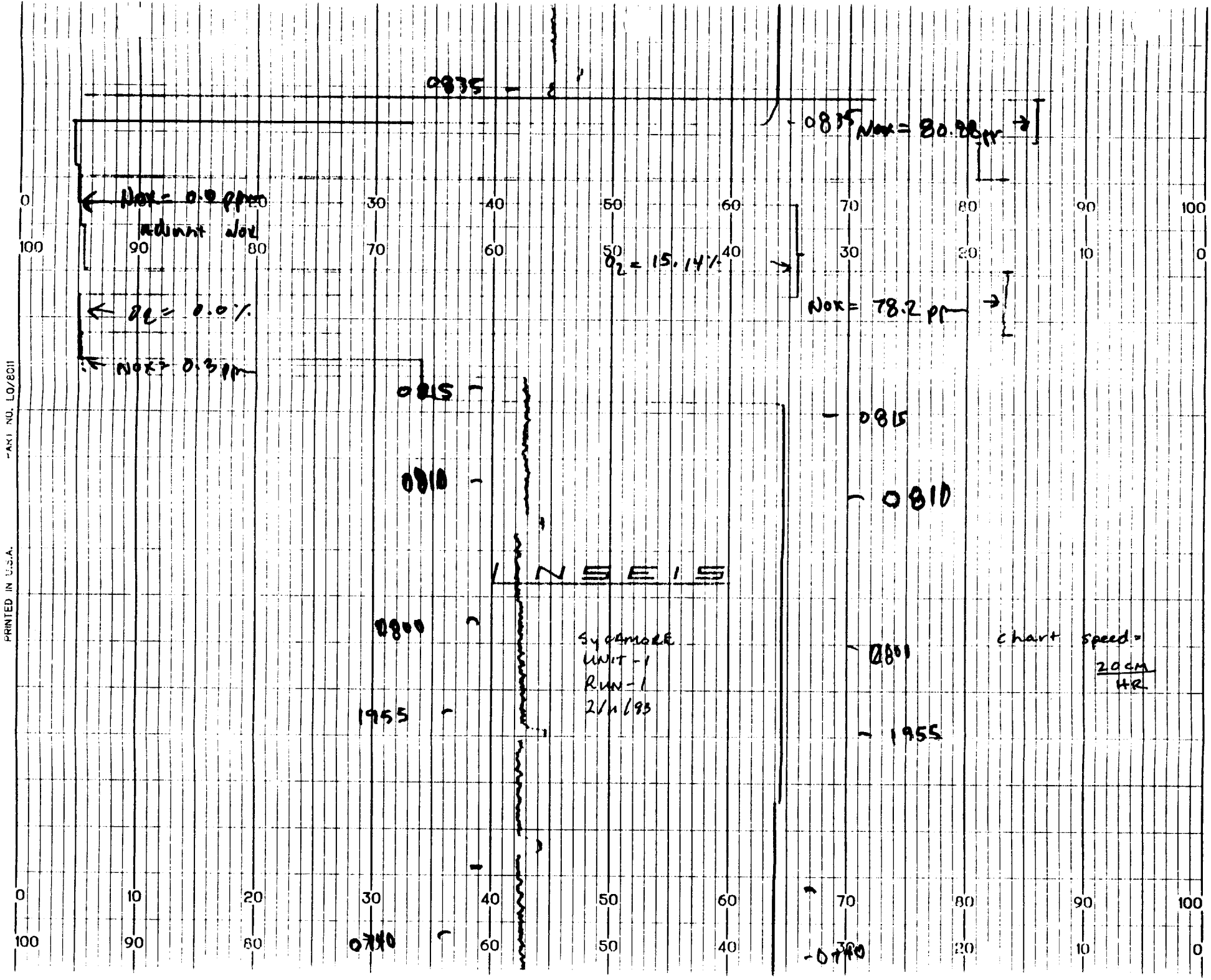
T.D.

ENGINEERING–SCIENCE, INC.
CEM FIELD DATA SHEET

PLANT SYCAMORE COGEN. CEM VAN NO. 3 DATE 2/16/93
TEST LOCATION OPERATOR T. DELFINO

TIME	SAMPLE POINT	O2 (%)	CO2 (%)	NOx (ppm)	CO (ppm)	SO2 (ppm)		COMMENTS / RUN #
		15.14	16.21	80.88	18.20	—		Span gas values used for test.
1205 - 1210		14.66	3.67	37.06	1.40			RUN-2, UNIT-2
1210 - 1215		14.66	3.67	37.25	1.40			
1215 - 1220		14.66	3.67	37.25	1.40			
1220 - 1225		14.66	3.65	37.32	1.35			
1225 - 1230		14.66	3.65	37.40	1.35			
1230 - 1235		14.66	3.65	37.45	1.40			
1235 - 1240		14.66	3.65	37.56	1.40			
1240 - 1245		14.66	3.65	37.64	1.40			
1245 - 1250		14.66	3.65	37.70	1.40			
CALIBRATE		0.06	0.0	0.00	0.0			ZERO Check
		15.14	16.21	82.98	18.20			SPAN Check
1300 - 1305		14.65	3.59	36.7	1.40			RUN-3, UNIT-2
1305 - 1310		14.65	3.59	36.7	1.40			
1310 - 1315		14.67	3.59	36.7	1.40			
1315 - 1320		14.67	3.59	36.8	1.40			
1320 - 1325		14.67	3.59	36.8	1.40			
1325 - 1330		14.67	3.59	37.0	1.40			
1330 - 1335								-momentary Plant upset, grid upset, Lost Nox H2O Inj
1335 - 1340								-Run extra 15 mins
1340 - 1345								
1345 - 1350		14.65	3.59	36	1.40			
		~~14.65~~ TD	~~3.59~~ TD	~~35.5~~ TD	~~1.40~~ TD			
1350 - 1355		14.65	3.59	35.5	1.40			
1355 - 1400		14.65	3.59	35.5	1.40			
		0.07	0.0	0.00	0.00			zero check
		15.11	16.21	80.83	18.20			SPAN Check
		15.05	16.05	79.91	18.30			SAMPLE BIAS Check


UNIT - 1
RUN 1
2/11/93
1955
0740
0730
NOx = (0-100 ppm) f/s
O2 = (0-25%) full scale
NH3 = 80.88 ppm
O2 = 15.14%
O2 = Zero
NOx = Zero
INITIAL CALIBRATION
SYCAMORE COGEN. UNIT - 1
2/11/93



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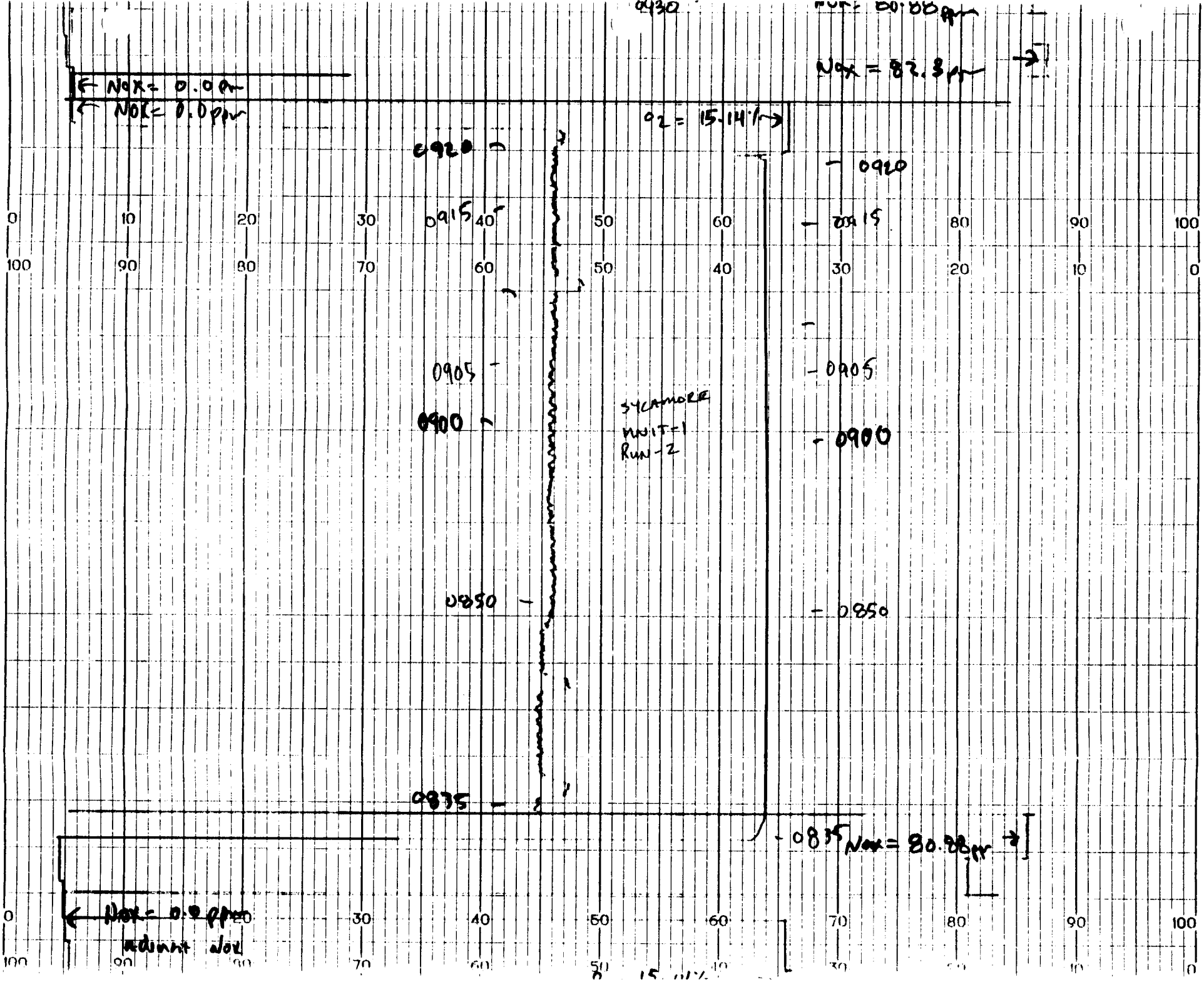
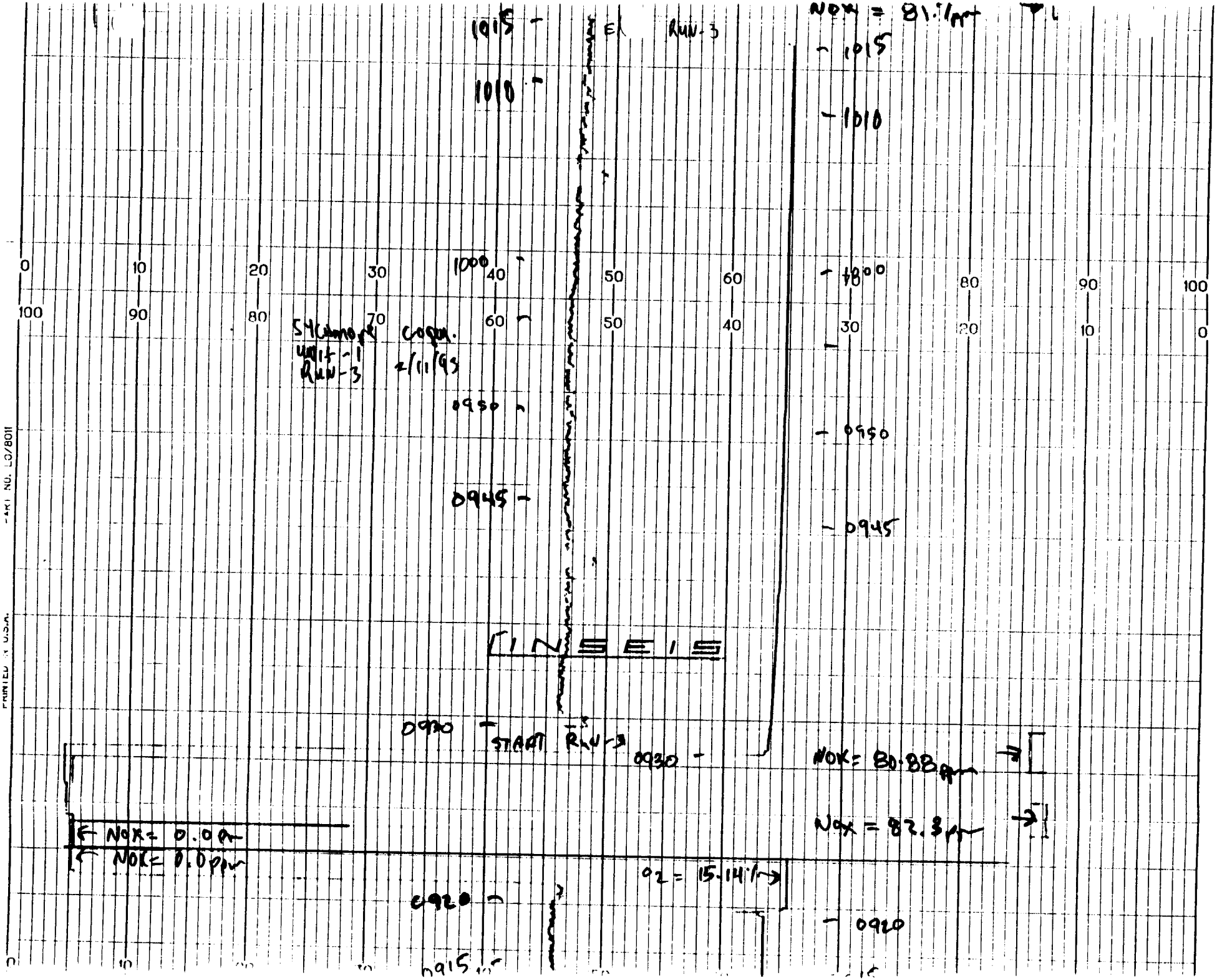
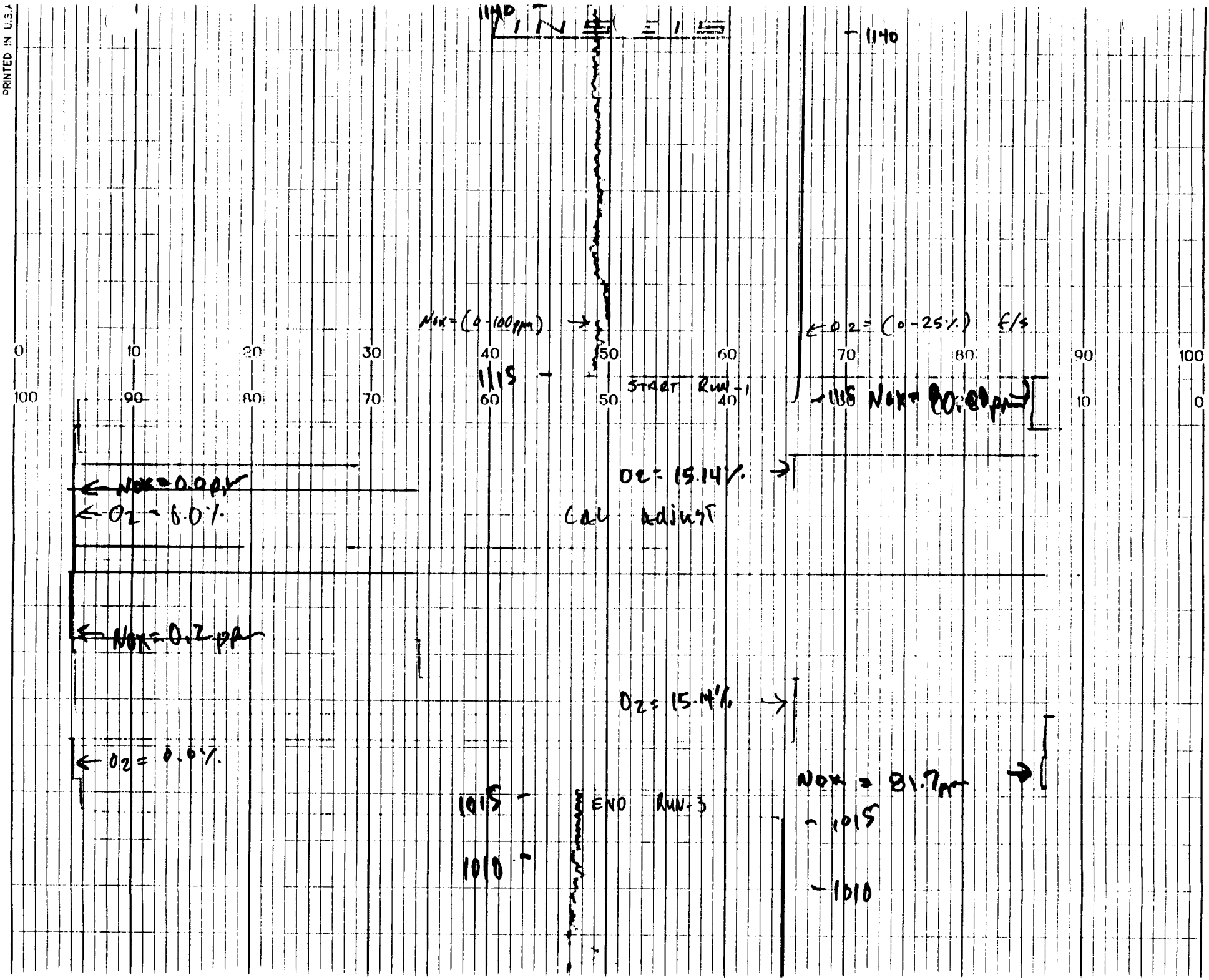


0930
NOX = 80.88 ppm
Nox = 82.3 ppm
← NOX = 0.0 ppm
← NOX = 0.0 ppm
O2 = 15.14%
0920
0915
0905
0900
0850
0835
SYCAMORE
UNIT-1
RUN-2
0920
0915
0905
0900
0850
0835 Nox = 80.88 ppm
← Nox = 0.0 ppm
adjust Nox
0
10
20
30
40
50
60
70
80
90
100



NOX = 81.7 ppm
1015
1010
1000
0950
0945
0930
0920
0915
RUN-3
Sycamore Unit-1 Run-3
Cogen. 2/11/93
INSEIS
START RUN-3
NOX = 80.88 ppm
NOX = 82.3 ppm
NOX = 0.0 ppm
NOX = 0.0 ppm
O2 = 15.14%
0
10
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0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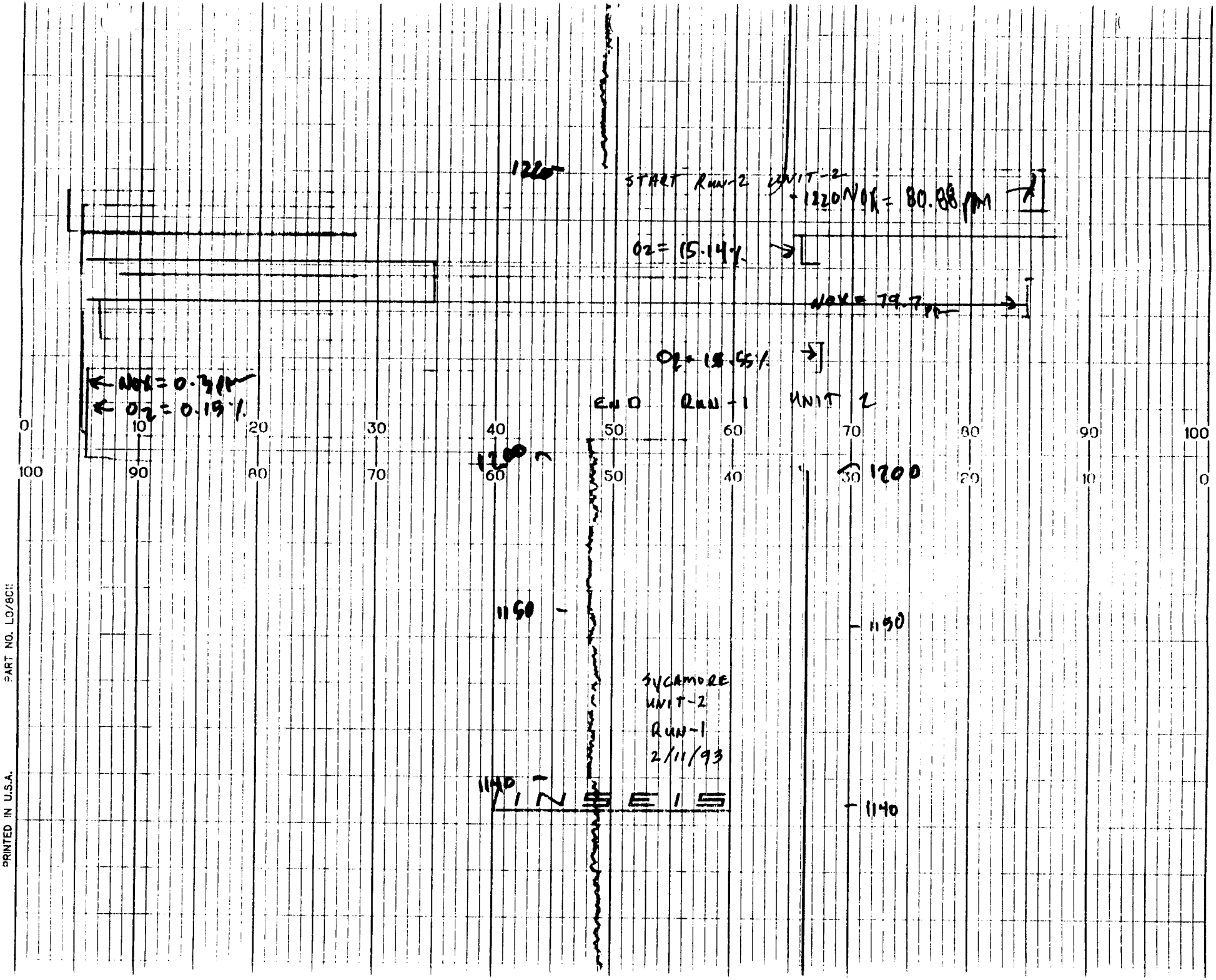
1140
1140
NOx = (0-100ppm)
O2 = (0-25%) f/s
0 10 20 30 40 50 60 70 80 90 100
1115
START RUN-1
1115
NOx = 80.8ppm
100 90 80 70 60 50 40 10 0
O2 = 15.14%
NOx = 0.0ppm
O2 = 8.0%
CAL adjust
NOx = 0.2ppm
O2 = 15.14%
O2 = 8.0%
NOx = 81.7ppm
1015
END RUN-3
1015
1010
1010



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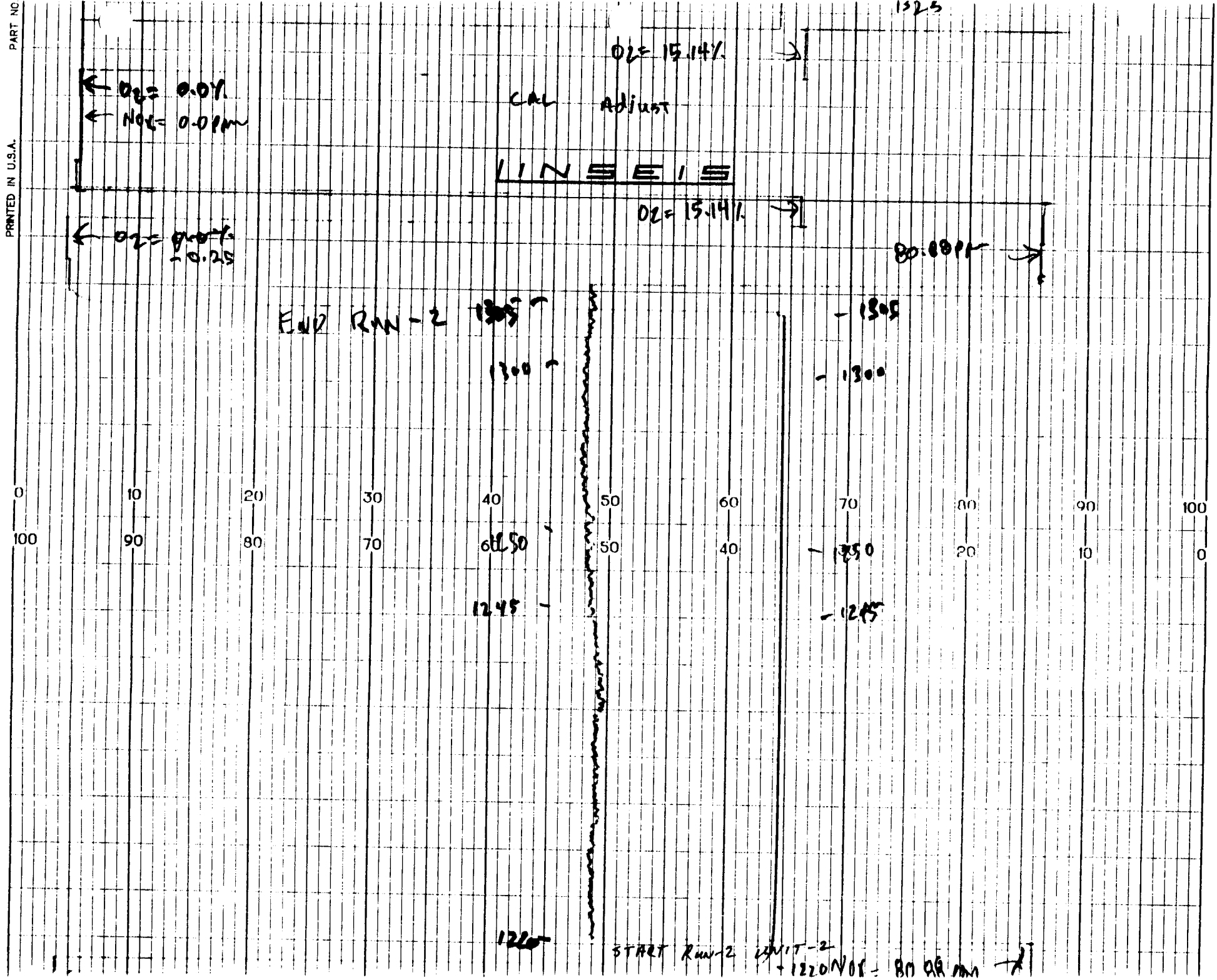
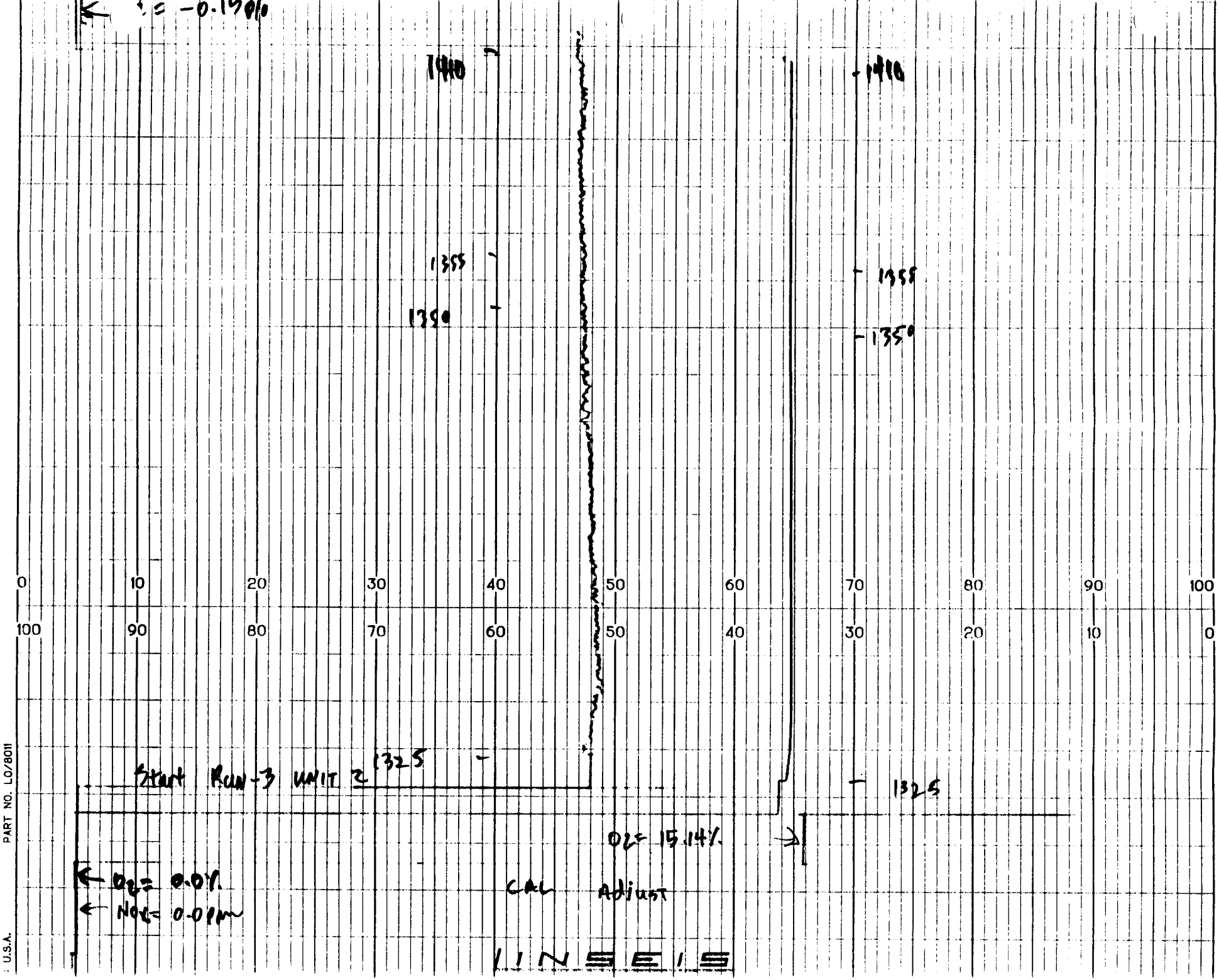
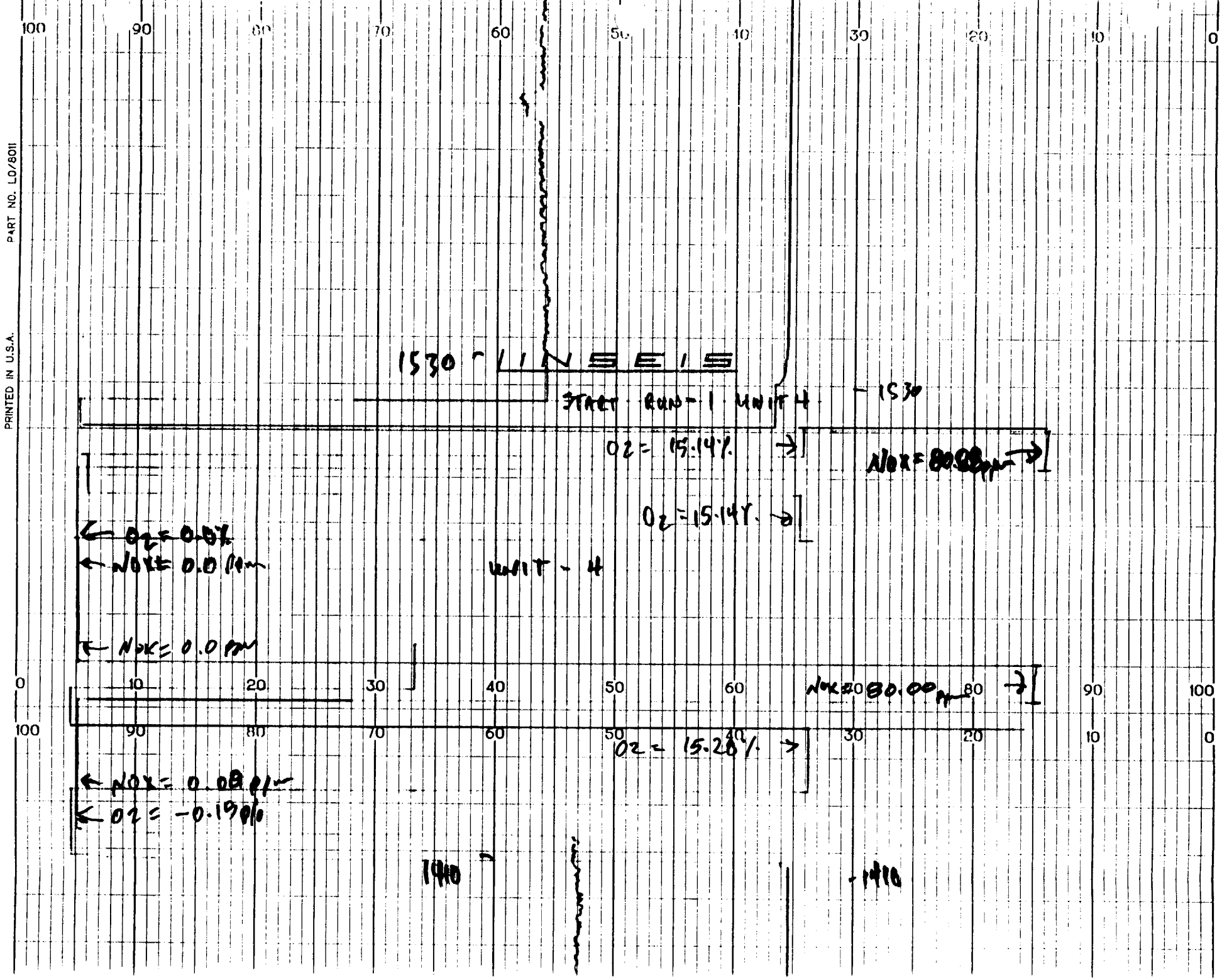

PART NO
PRINTED IN U.S.A.
1325
O2= 15.14%
CAL Adjust
LINSEIS
O2= 0.0%
NOx= 0.0 ppm
O2= 15.14%
O2= 0.0%
-0.25
80.88 ppm
END RUN-2
1305
1300
1250
1245
1220
START RUN-2 UNIT-2
1220 NOx = 80.88 ppm
0
10
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0

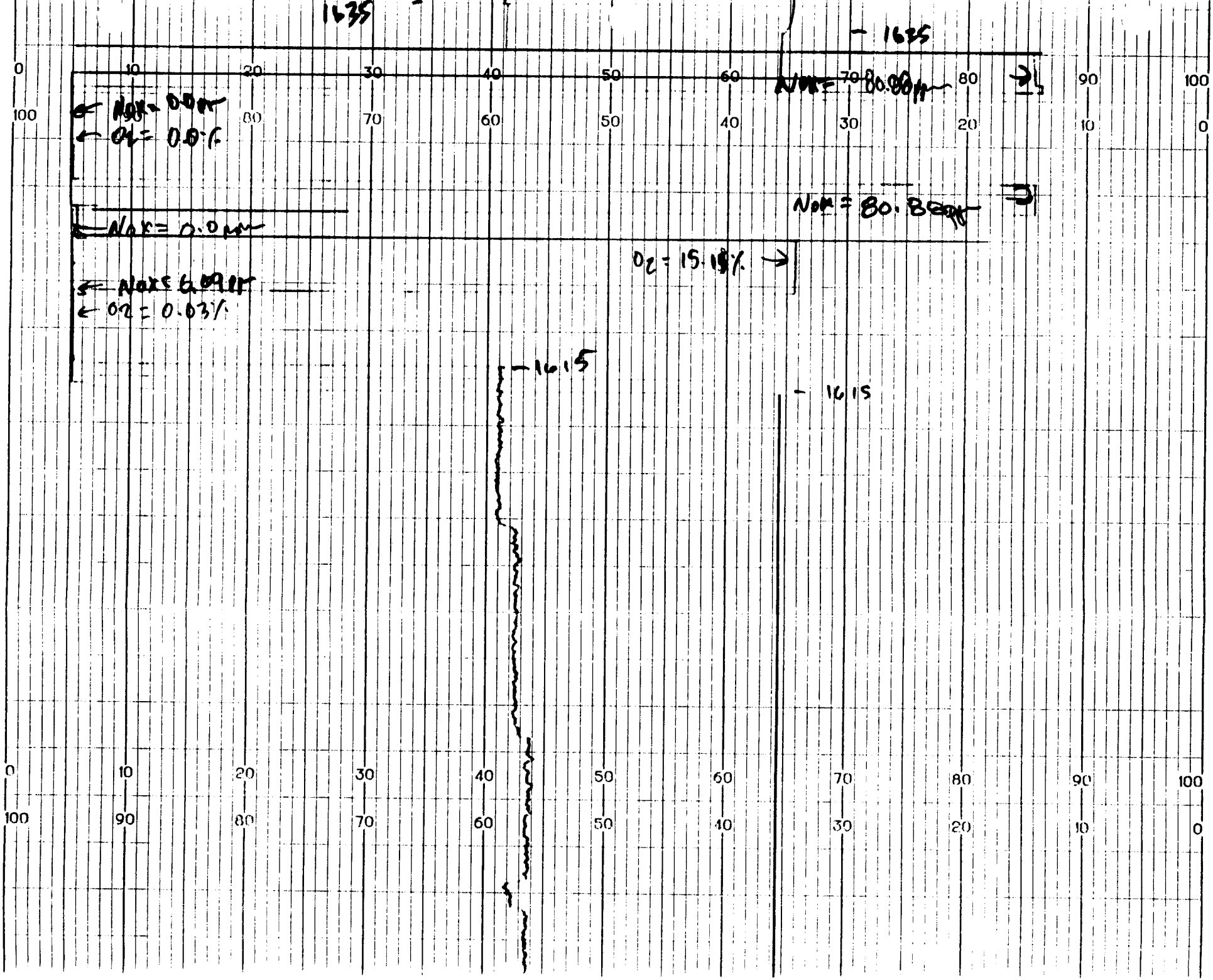


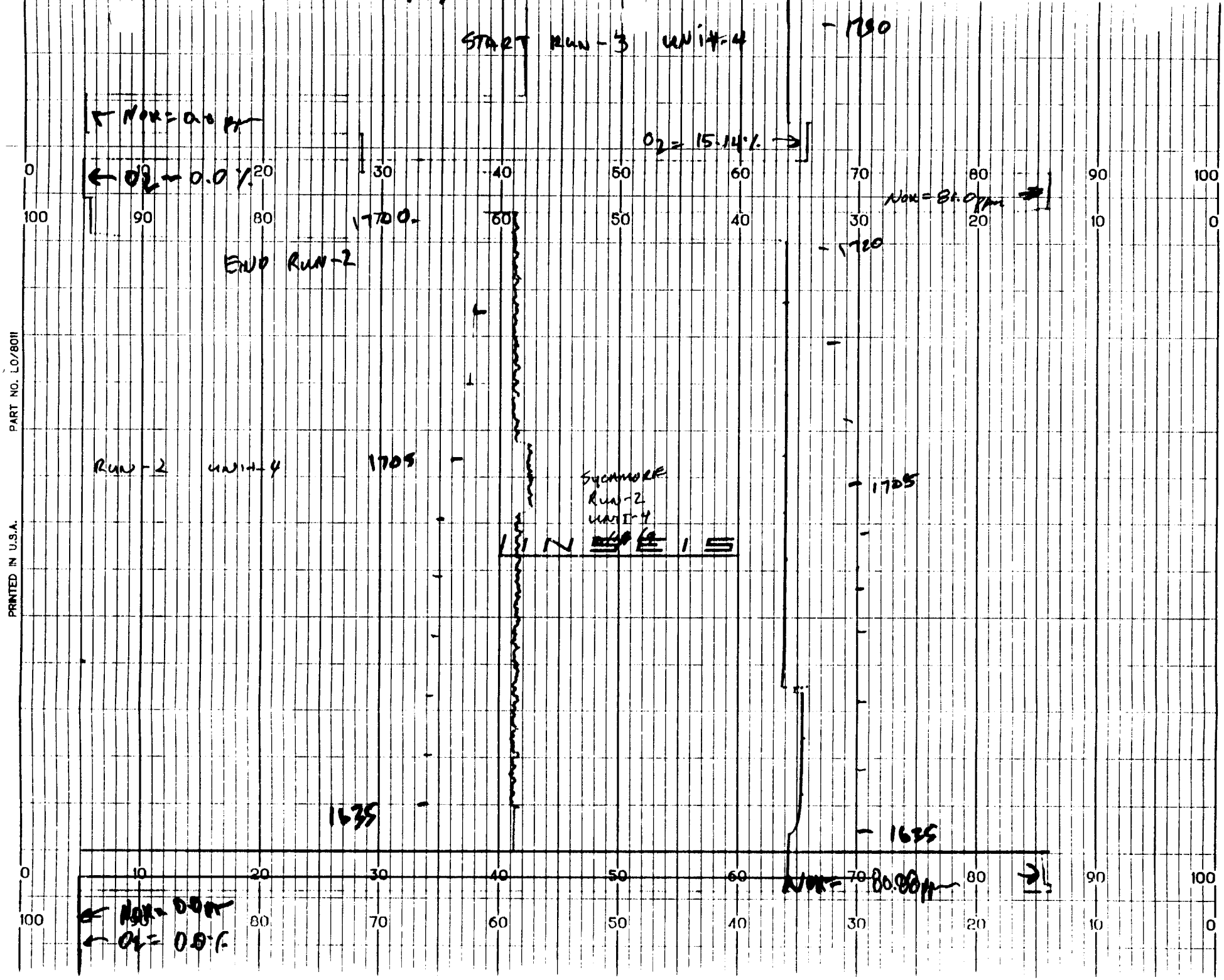
PART NO. LO/8011

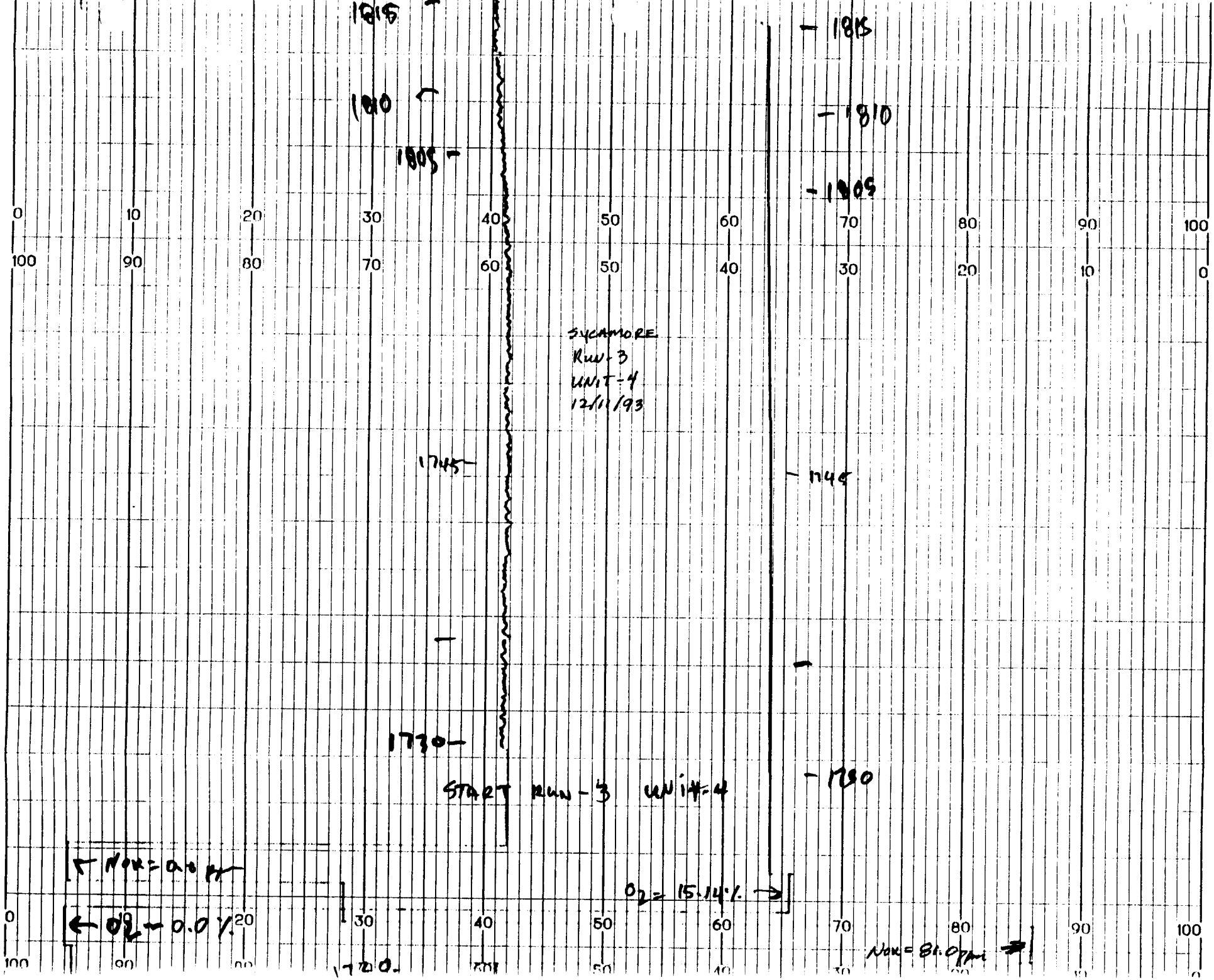
U.S.A.

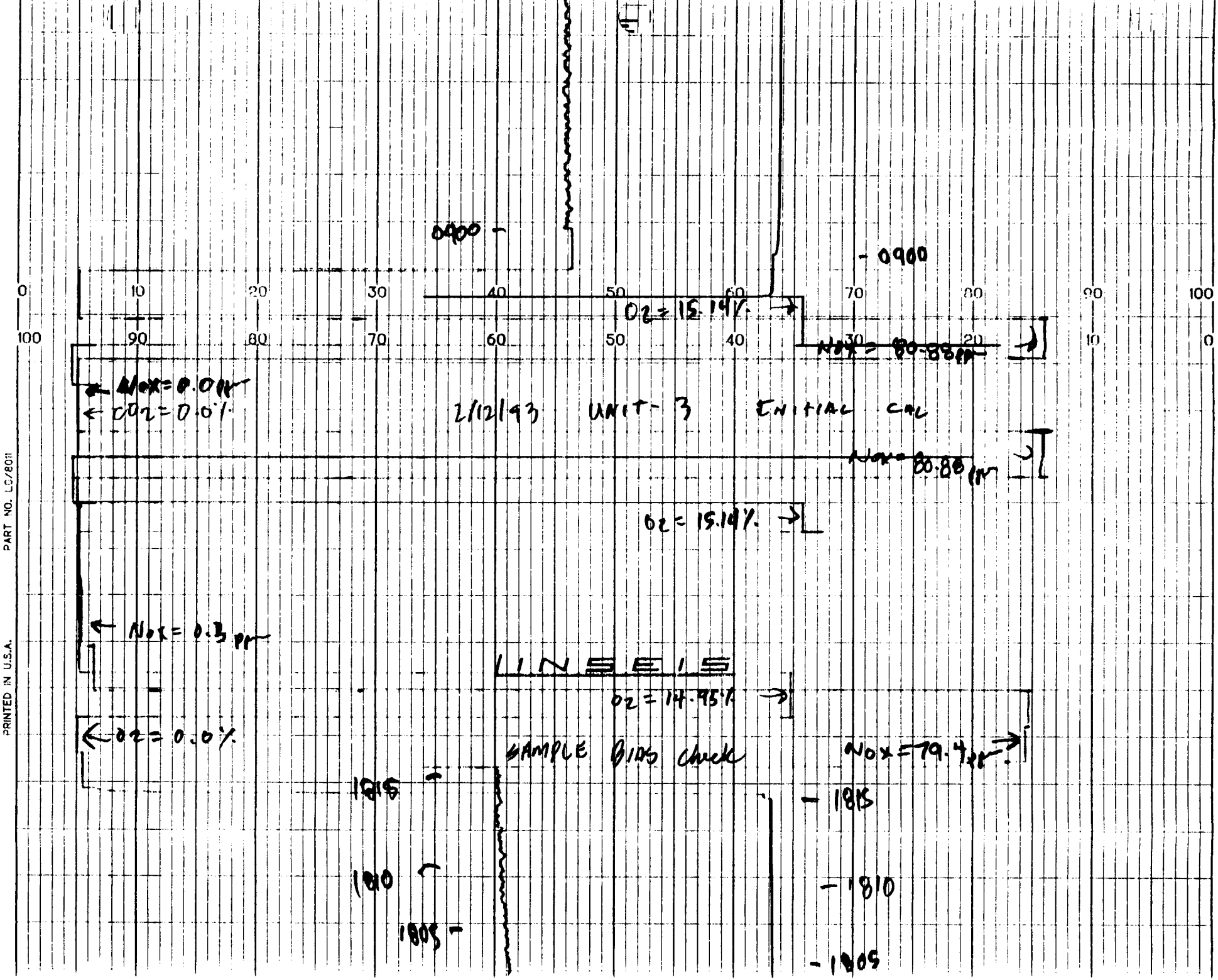


PRINTED IN U.S.A. PART NO. LD/8011

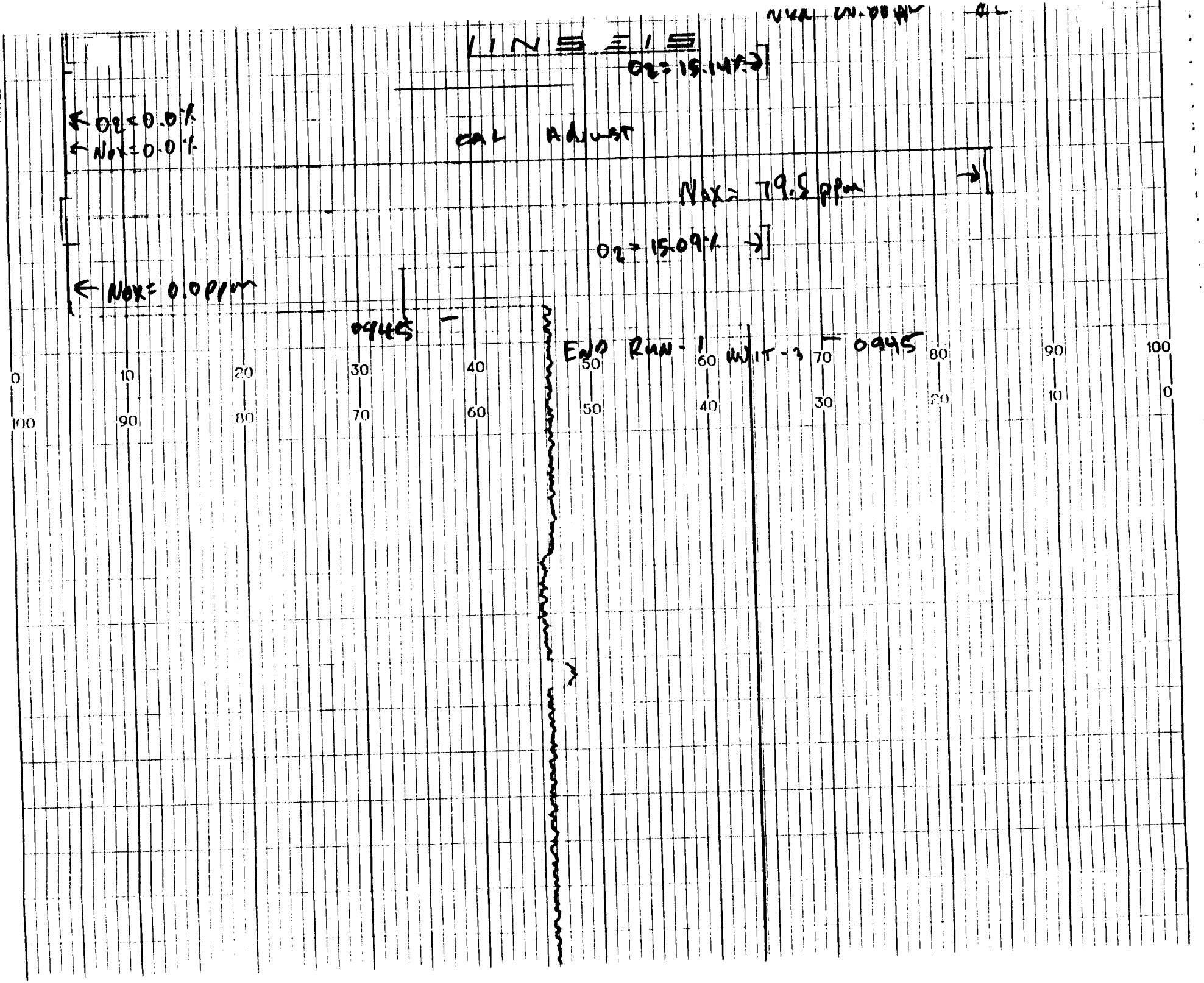

1635
1635
NOx = 80.8 ppm
NOx = 0.0 ppm
O2 = 0.0%
NOx = 80.8 ppm
NOx = 0.0 ppm
O2 = 15.1%
NOx = 6.09 ppm
O2 = 0.03%
1615
1615
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0


START RUN-3 UNIT-4
1790
NOx = 0.0 ppm
O2 = 15.14%
O2 = 0.0%
NOx = 81.0 ppm
1700
END RUN-2
1720
RUN-2 UNIT-4
1705
Sycamore
Run-2
Unit-4
1635
NOx = 0.0 ppm
O2 = 0.0%
PART NO. LO/8011
PRINTED IN U.S.A.

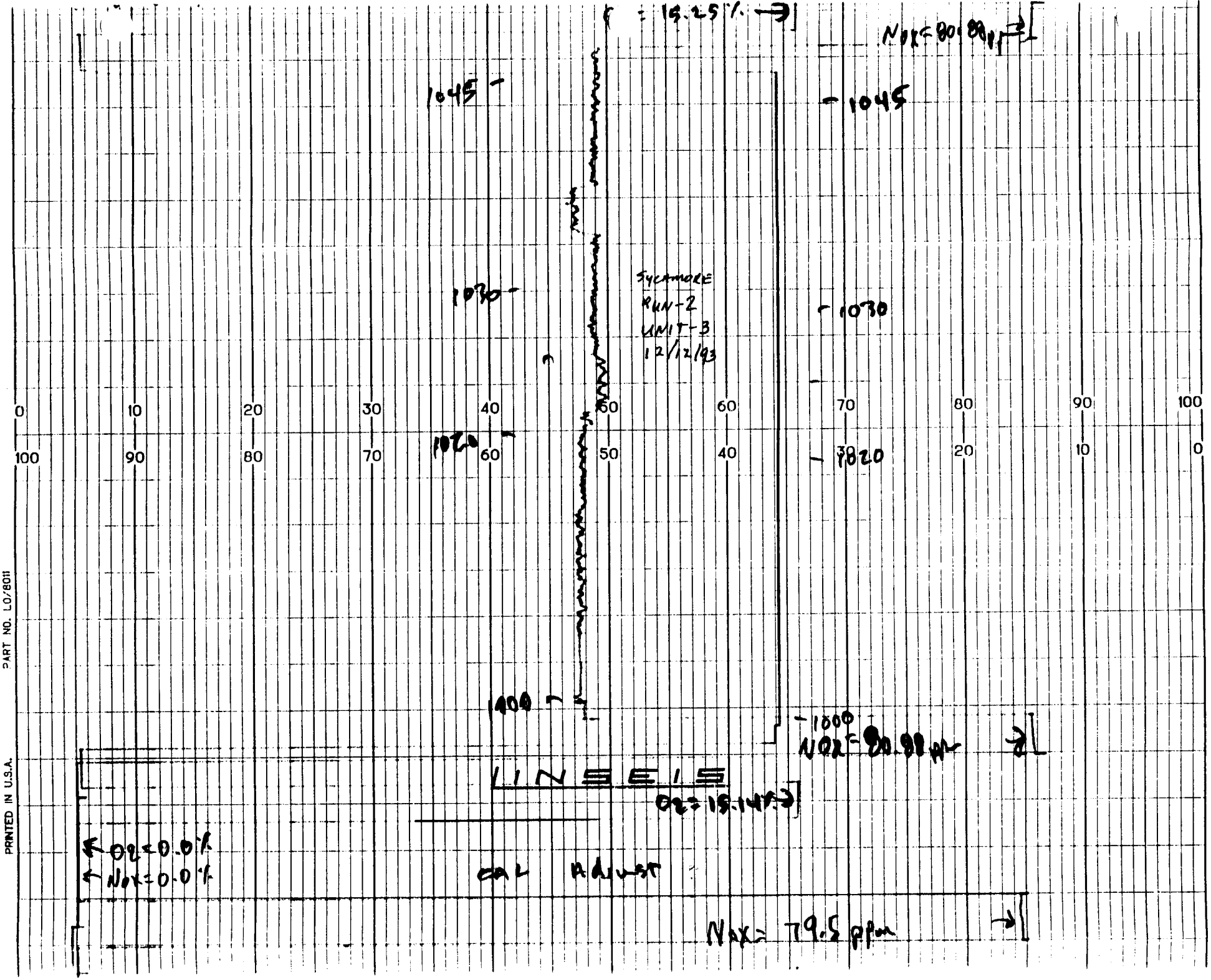

1815
1810
1805
1745
1730
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
SYCAMORE
RUN-3
UNIT-4
12/11/93
START RUN-3 UNIT-4
NOx = 0.0 ppm
O2 = 0.0 %
O2 = 15.14 %
NOx = 81.0 ppm



PRINTED IN U.S.A. PART NO. LC/8011

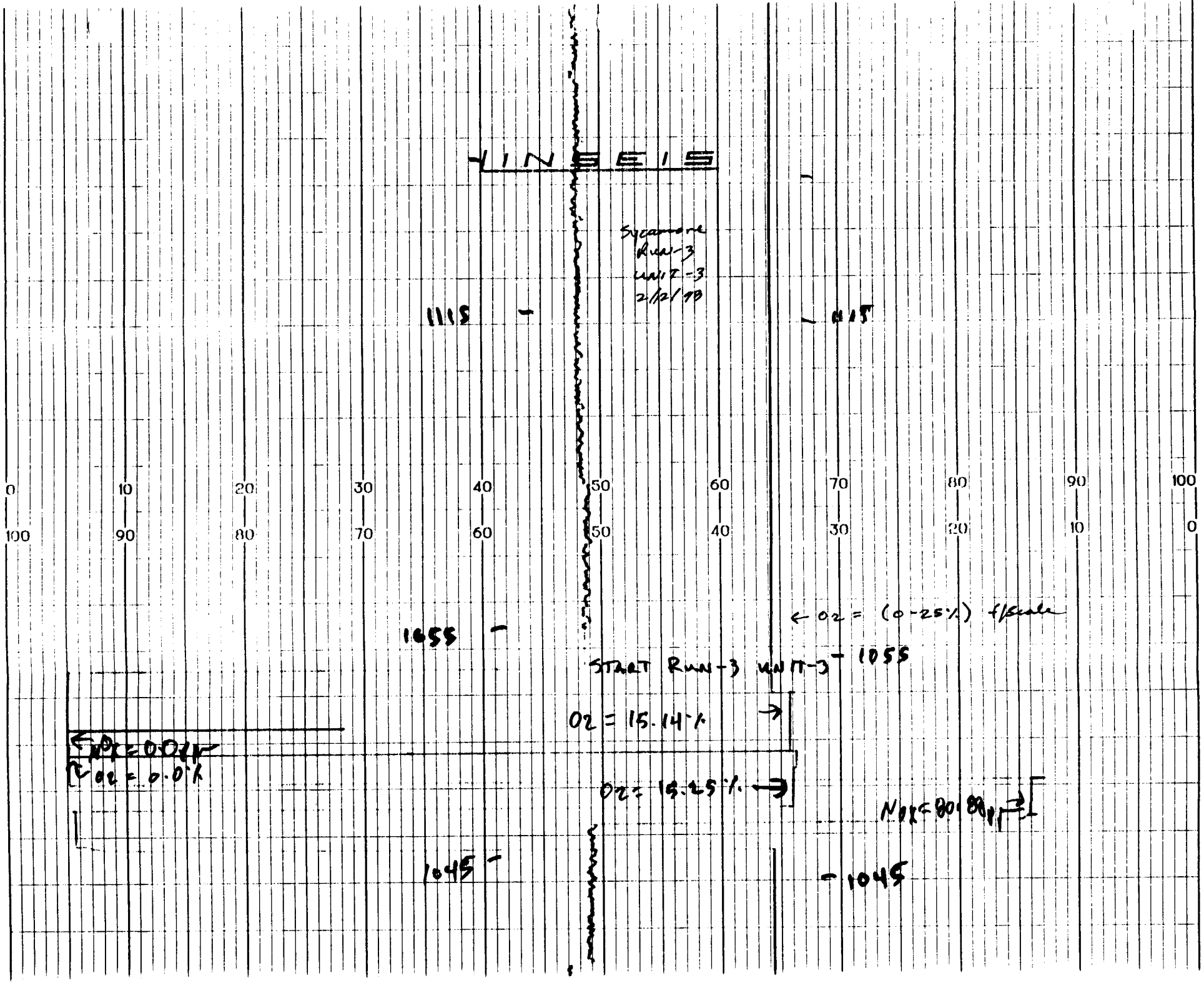


PRINTED IN U.S.A.



PART NO. LO/8011

PRINTED IN U.S.A.



PRINTED IN U.S.A.

← NOX = 0.3 ppm

← O2 = 0.05%

O2 = 15.04% →

EXT NOX = 79.0 ppm →

O2 Linearity check

← 7.20% w/ no adjustments to zero or span

← NOXE 0.2 ppm

O2 = 15.20% →

NOX = 80.88 ppm →

← O2 = 0.03

0 10 20 30 40 50 60 70 80 90 100

100 90 80 70 60 50 40 30 20 10 0

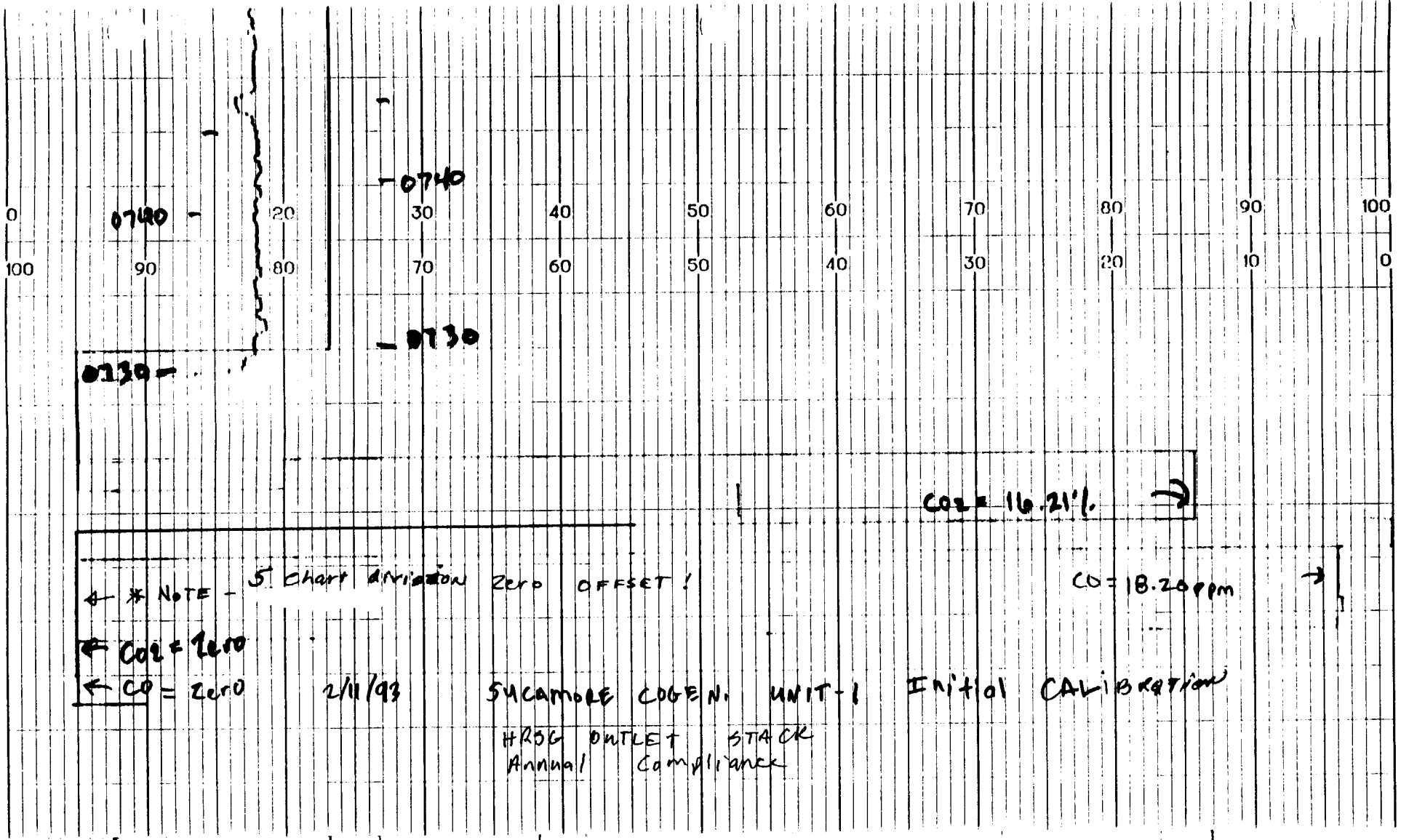
1140 —

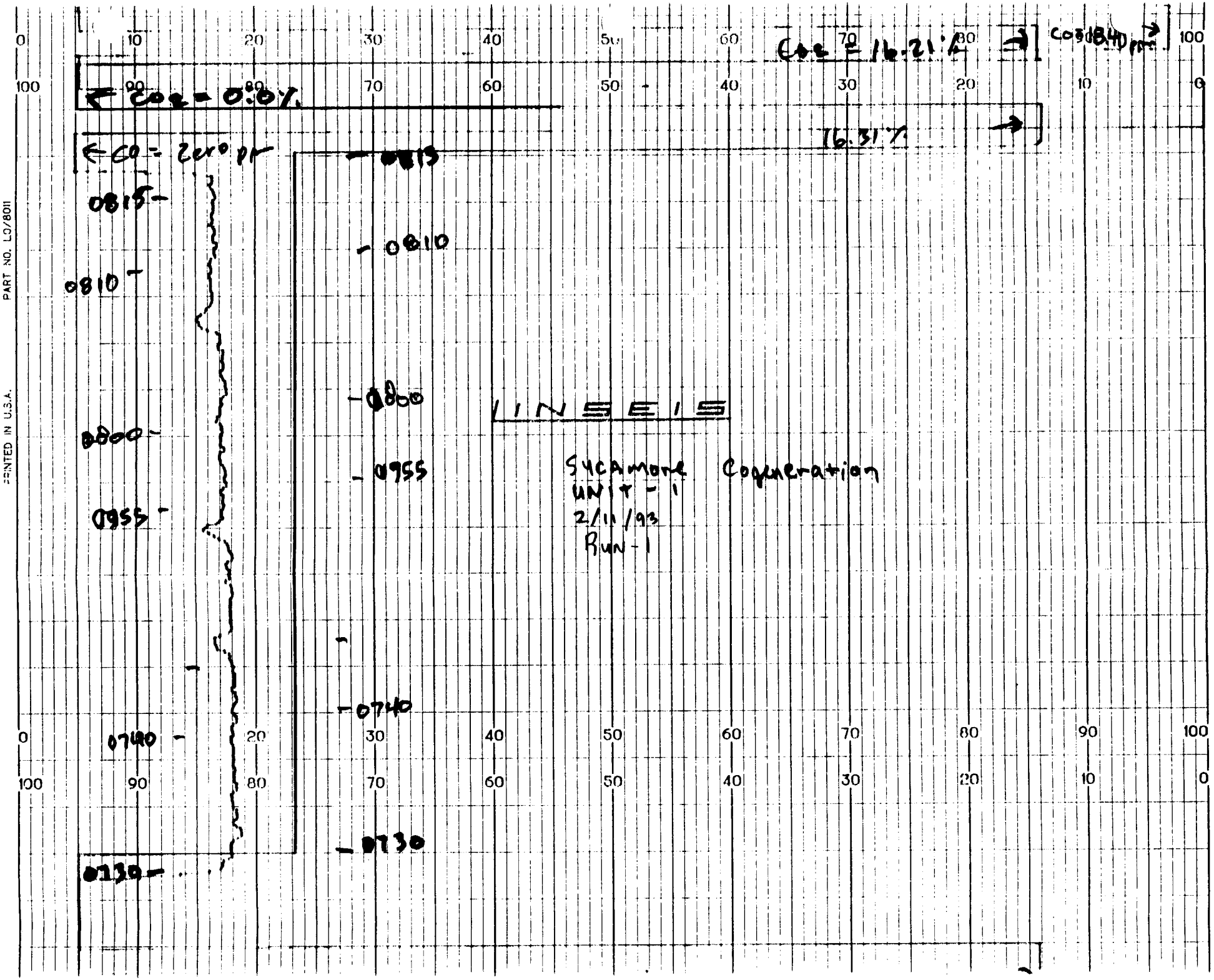
END RUN-3 UNIT-3

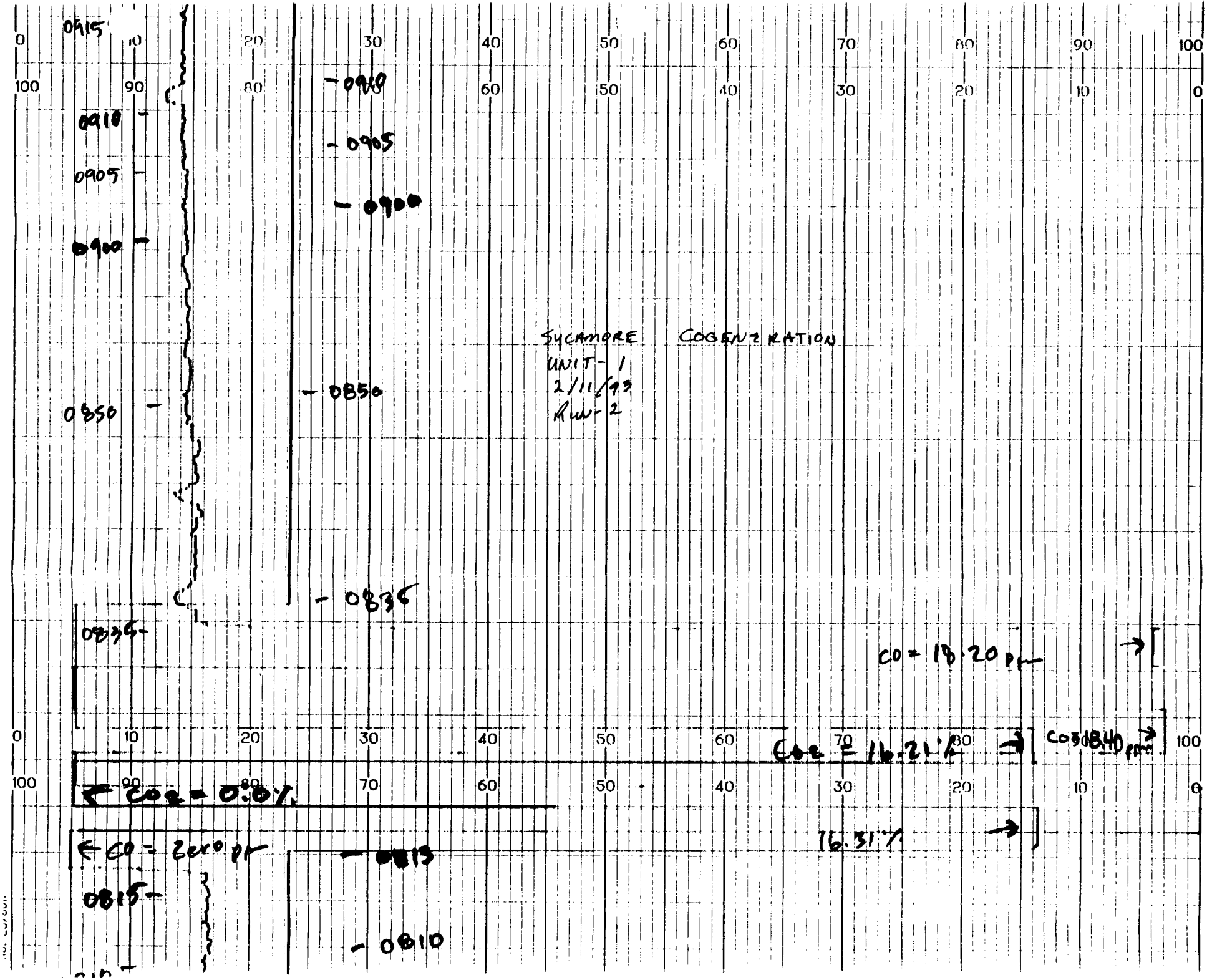
— 1140

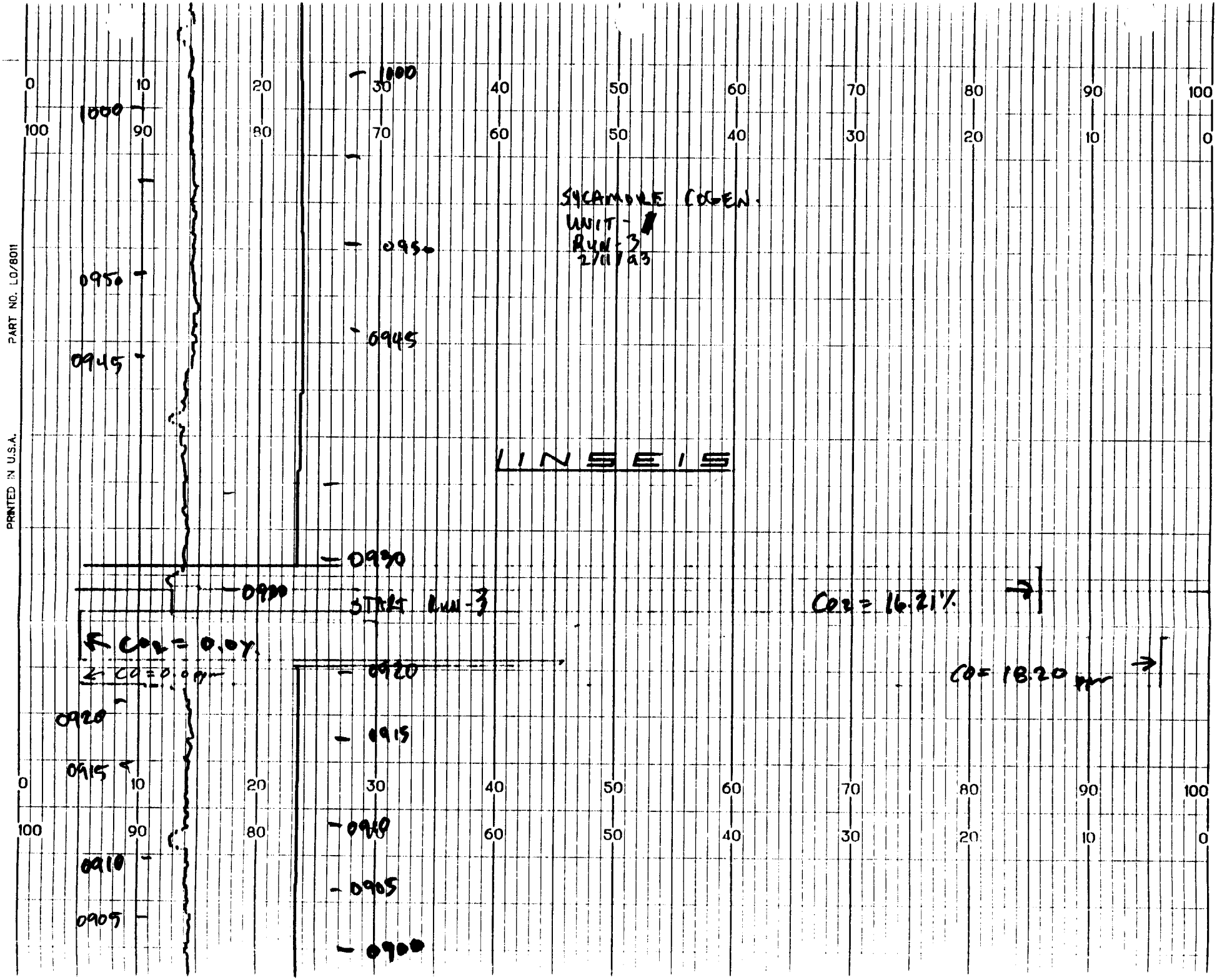
LINSEIS

Sycamore Run-3

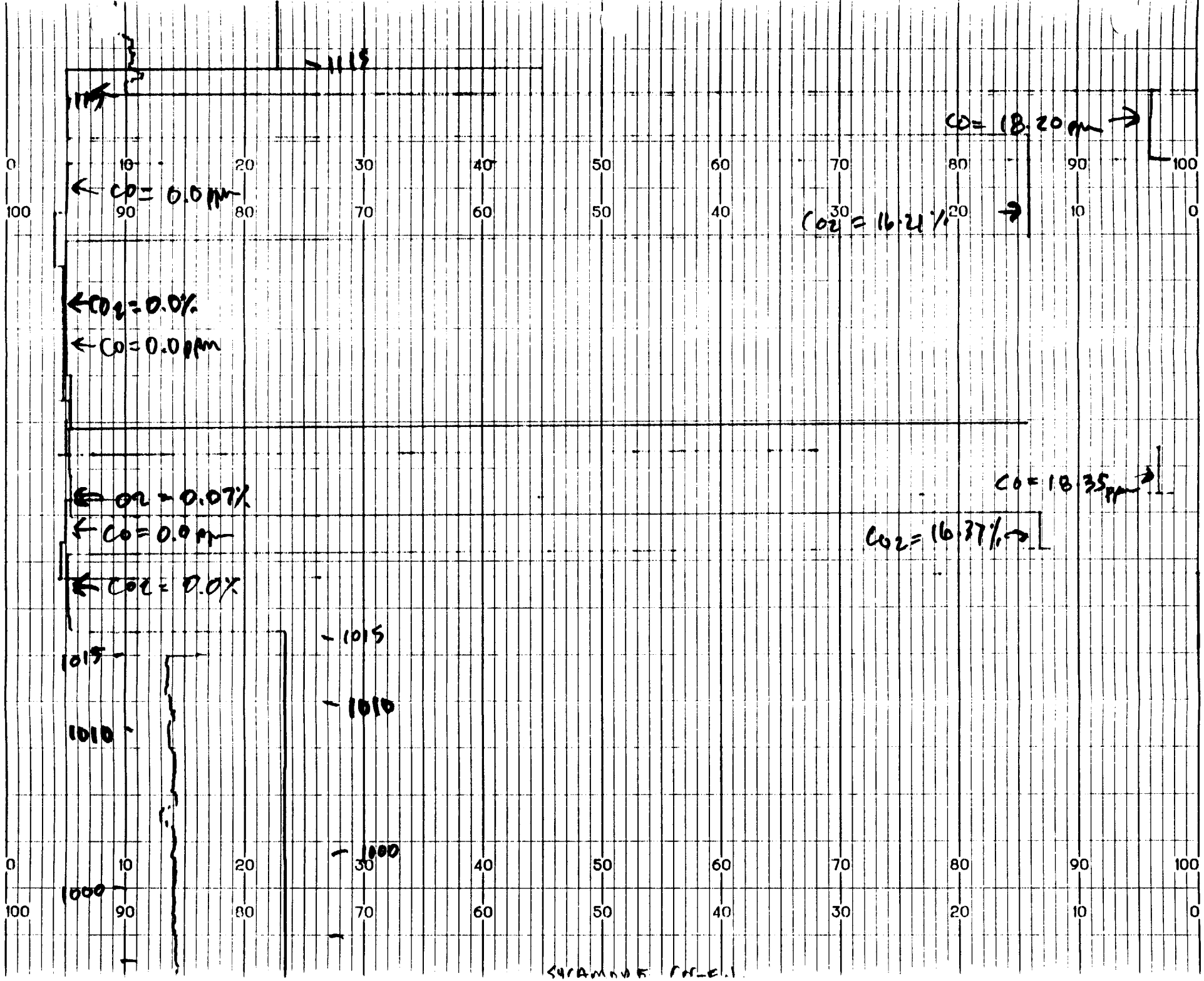

0
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0
0740
0720
0730
0730
CO2 = 16.21%
CO = 18.20 ppm
← * NOTE - 5 Chart division zero OFFSET!
← CO2 = zero
← CO = zero
2/11/93
SYCAMORE COGEN. UNIT-1 Initial CALIBRATION
HRSG OUTLET STACK
Annual Compliance

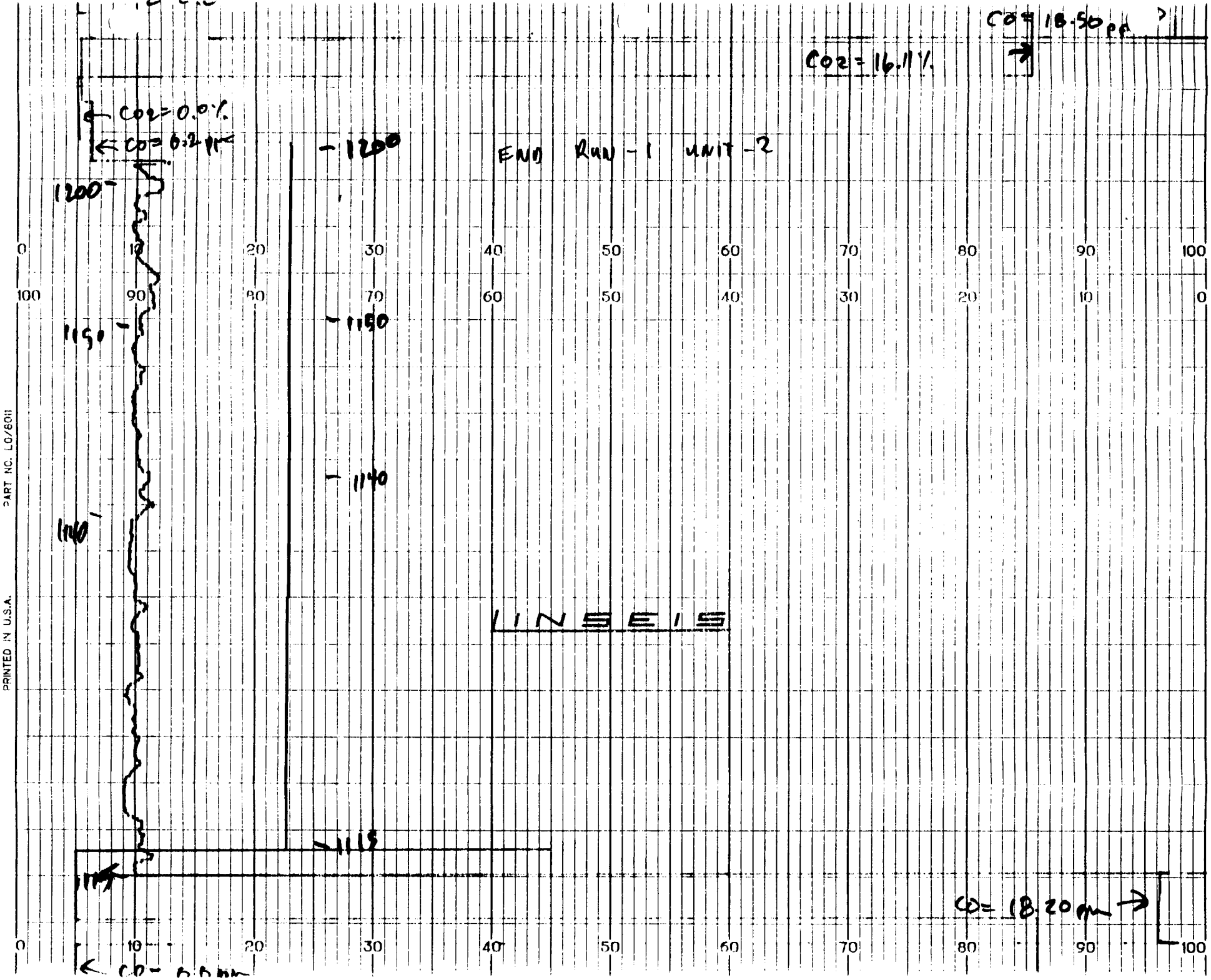

CO2 = 16.21%
CO 840 ppm
CO2 = 0.0%
16.31%
CO = zero ppm
0815
0810
0800
0755
0740
0730
LINSEIS
Sycamore Cogeneration
UNIT - 1
2/11/93
RUN - 1
PART NO. LO/8011
PRINTED IN U.S.A.

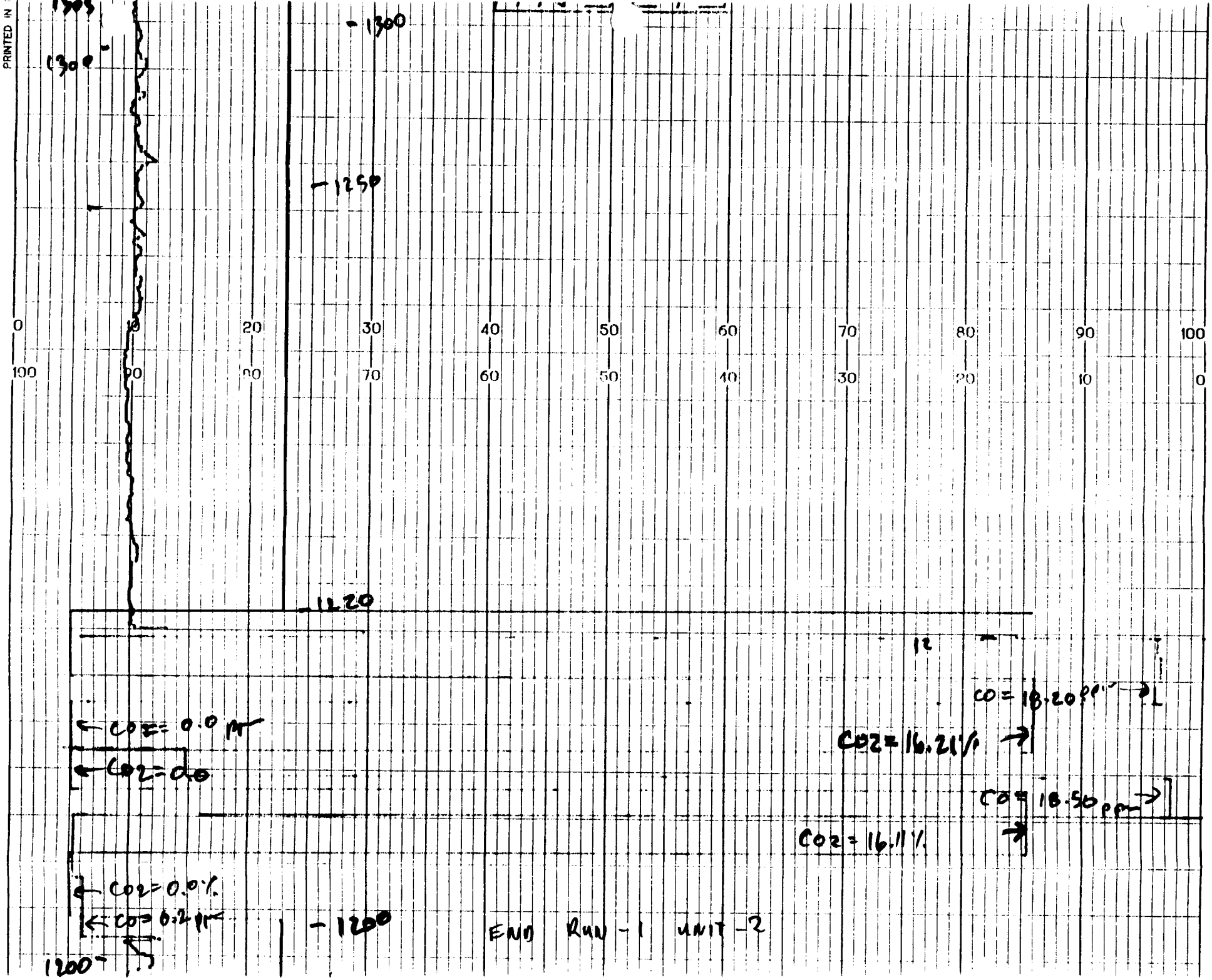

SYCAMORE COGENERATION
UNIT-1
2/11/93
RUN-2
0915
0910
0905
0900
0850
0835
0815
0810
CO = 18.20 ppm
CO2 = 16.21 %
CO = 8.40 ppm
CO2 = 0.0 %
CO = zero ppm
16.31 %

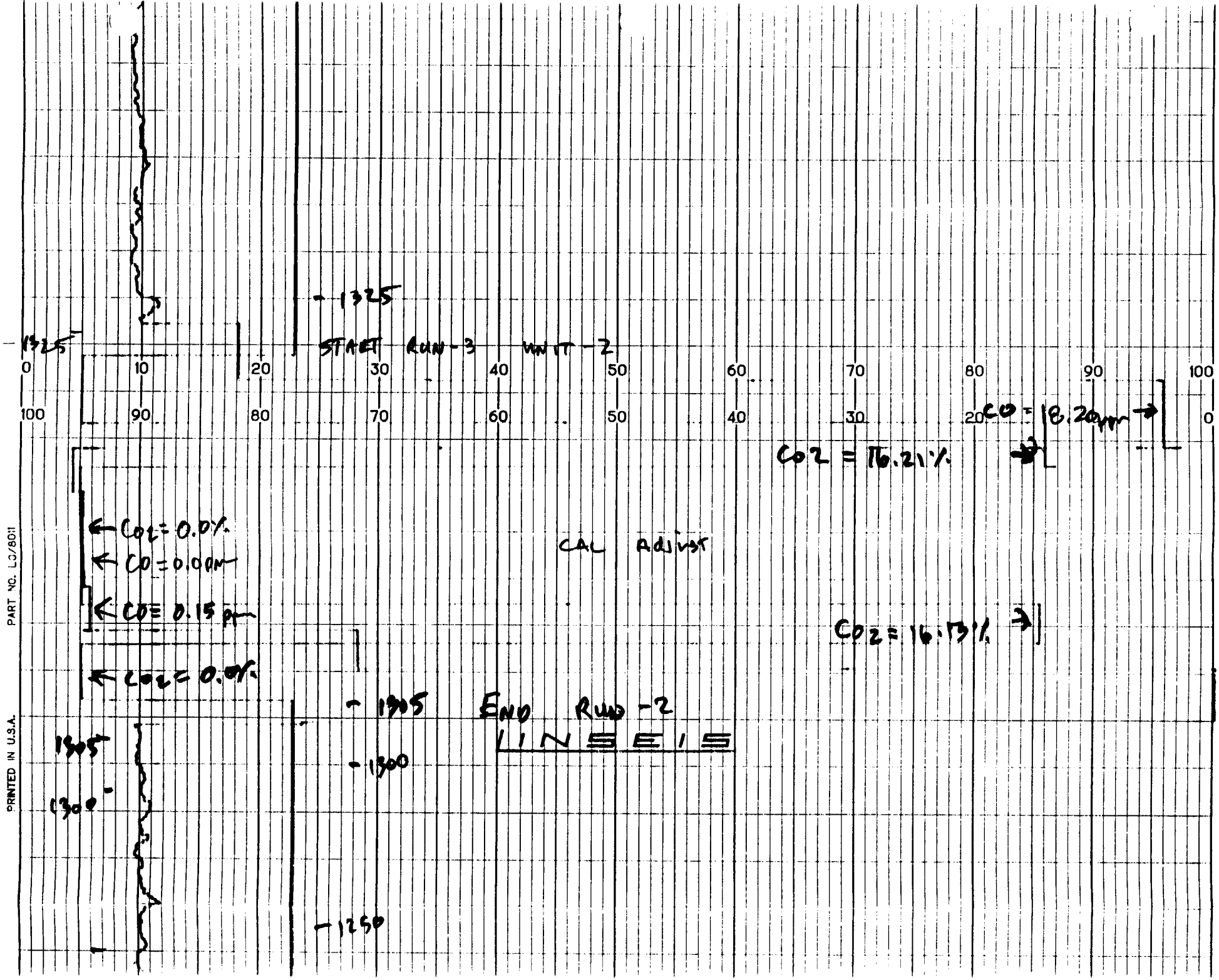


PRINTED IN U.S.A. PART NO. LO/8011


1115
1115
CO = 18.20 ppm
CO = 0.0 ppm
CO2 = 16.21 %
CO2 = 0.0%
CO = 0.0 ppm
CO = 18.35 ppm
O2 = 0.07%
CO = 0.0 ppm
CO2 = 16.37%
CO2 = 0.0%
1015
1015
1010
1010
1000
1000
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0

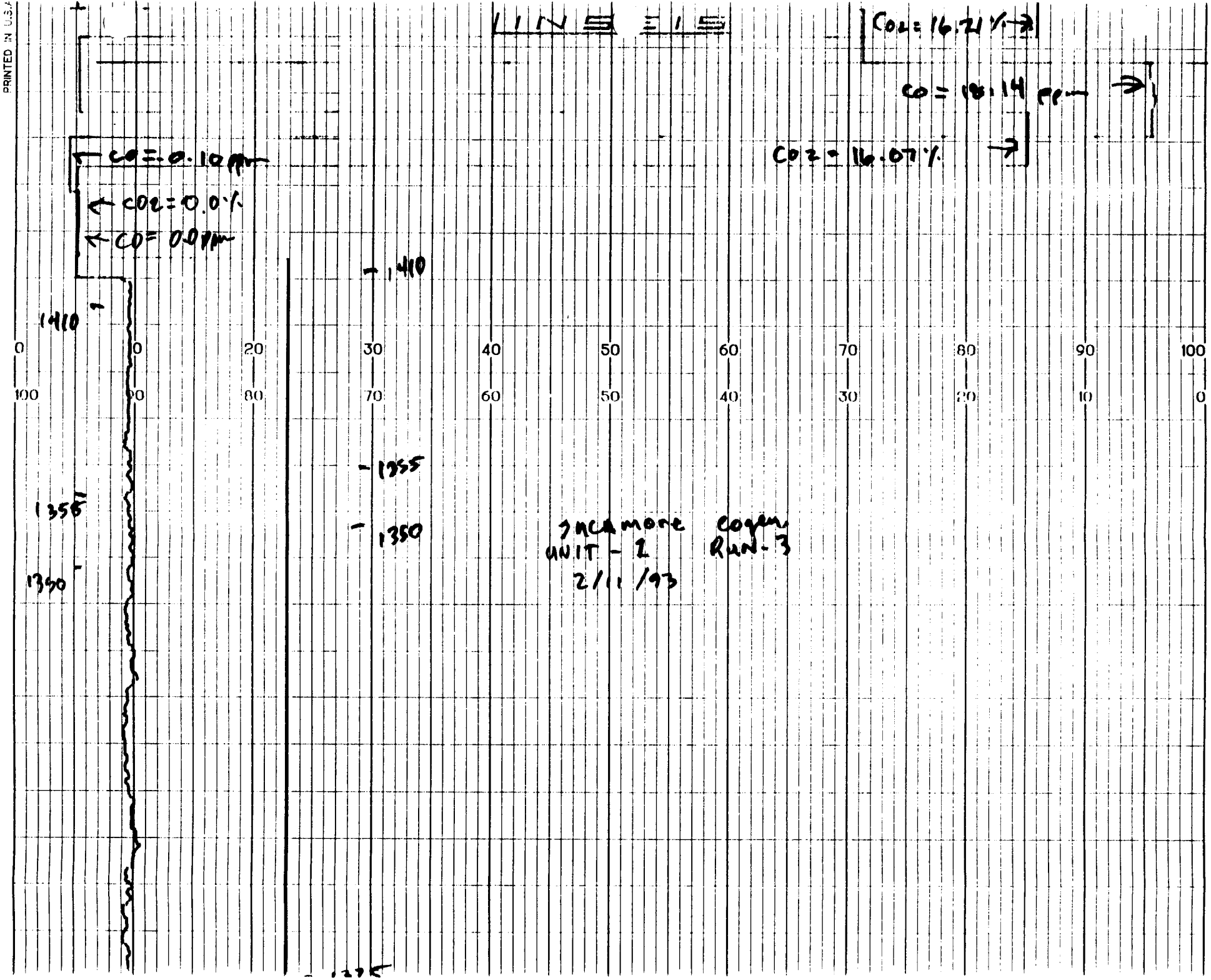

CO = 18.50 ppm
CO2 = 16.11%
CO2 = 0.0%
CO = 0.2 ppm
1200
END RUN - 1 UNIT - 2
1200
1150
1150
1140
1140
LINSEIS
1115
1115
CO = 18.20 ppm
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
PRINTED IN U.S.A.
PART NO. LO/8011

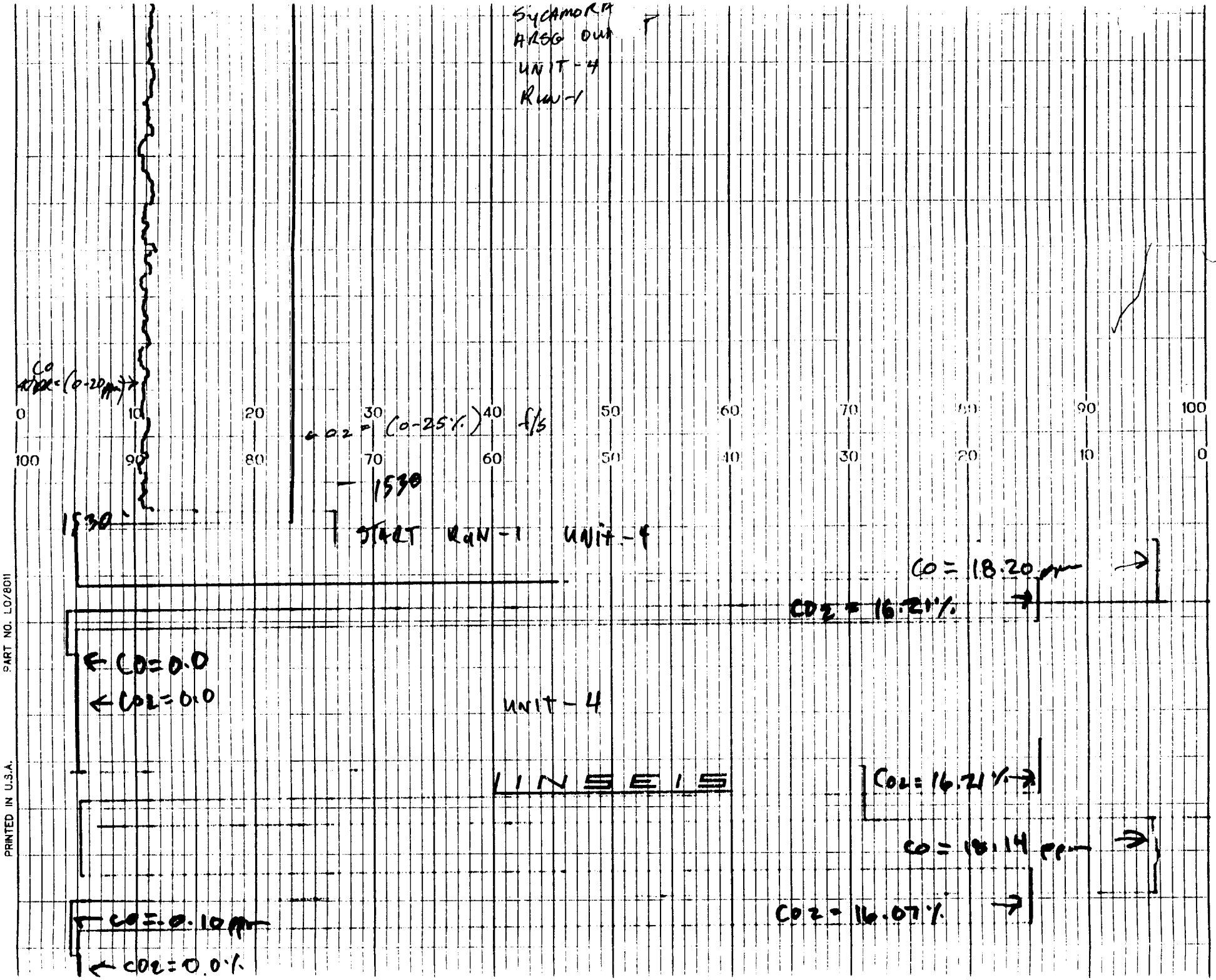

PRINTED IN
1305
1300
1300
1250
0
10
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0
1220
12
CO = 18.20 ppm
CO2 = 16.21%
CO2 = 0.0 ppm
CO2 = 0.0
CO = 18.50 ppm
CO2 = 16.11%
CO2 = 0.0%
CO = 0.2 ppm
1200
1200
END RUN - 1 UNIT - 2



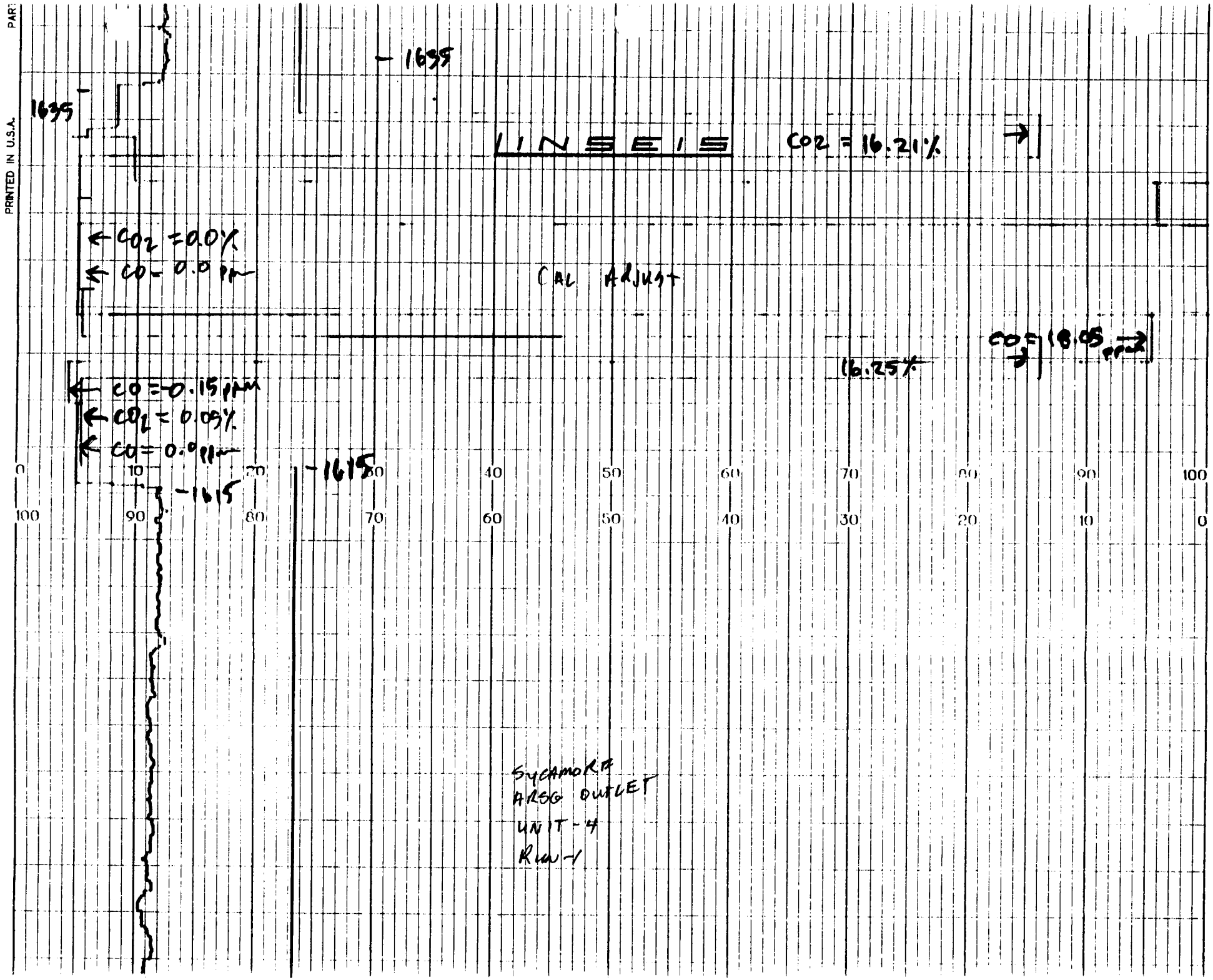
PART NO. LO/8011

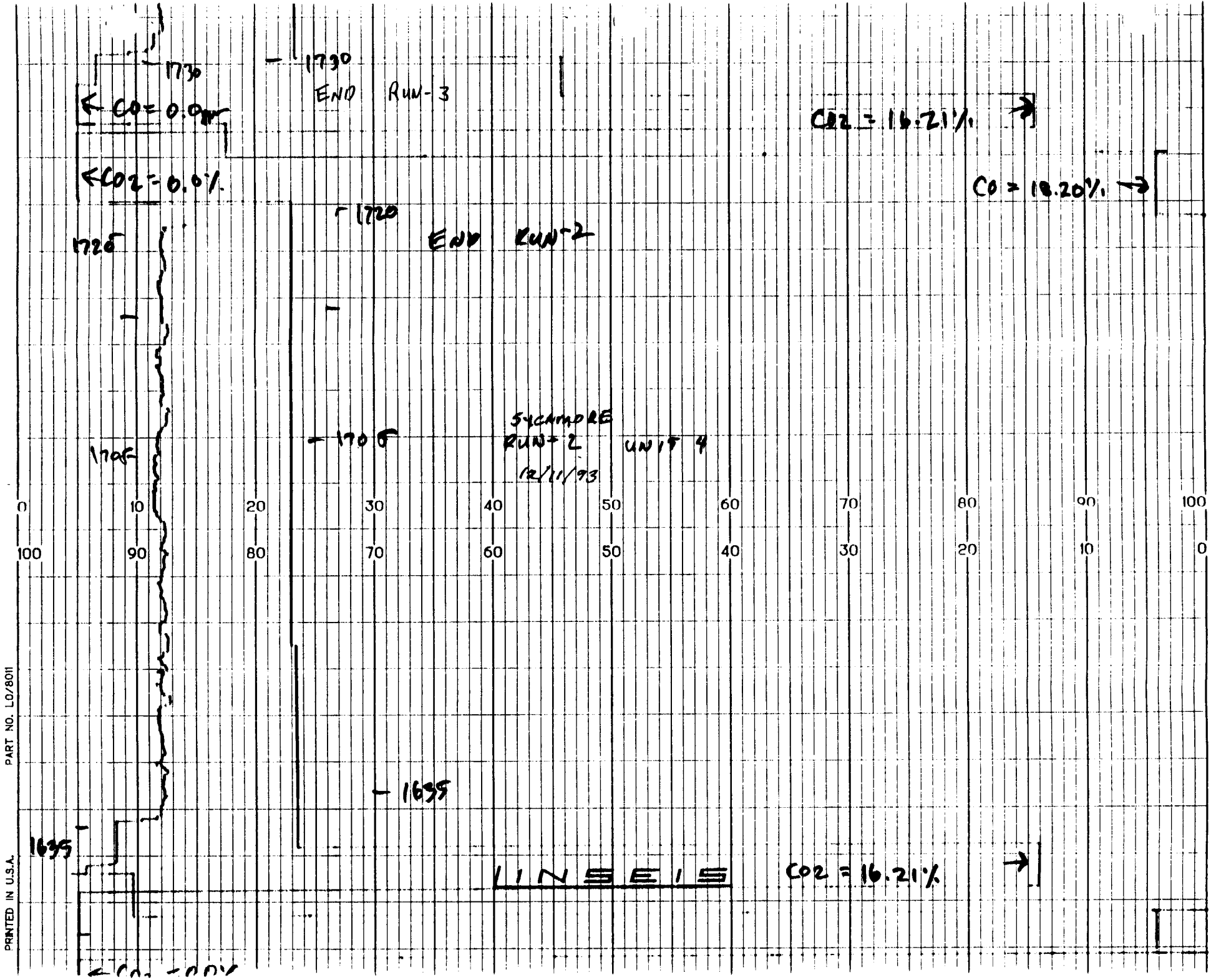
PRINTED IN U.S.A.


LINE 15
CO2 = 16.21 %
CO = 18.14 ppm
CO2 = 16.07 %
CO = 0.10 ppm
CO2 = 0.0 %
CO = 0.0 ppm
1410
1355
1350
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
Sycamore Cogen
UNIT - 1 RUN - 3
2/11/93



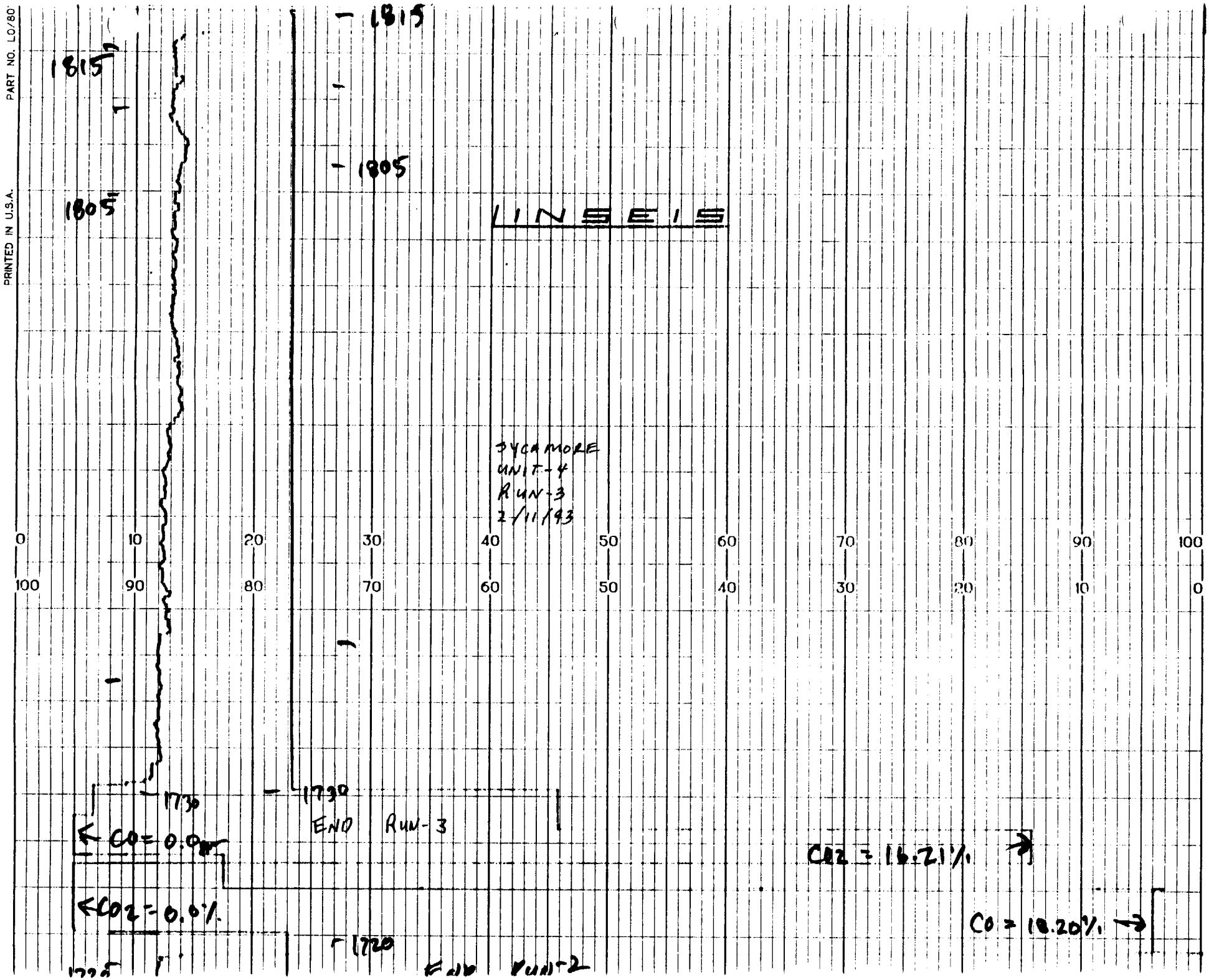
PART NO. LO/8011
PRINTED IN U.S.A.

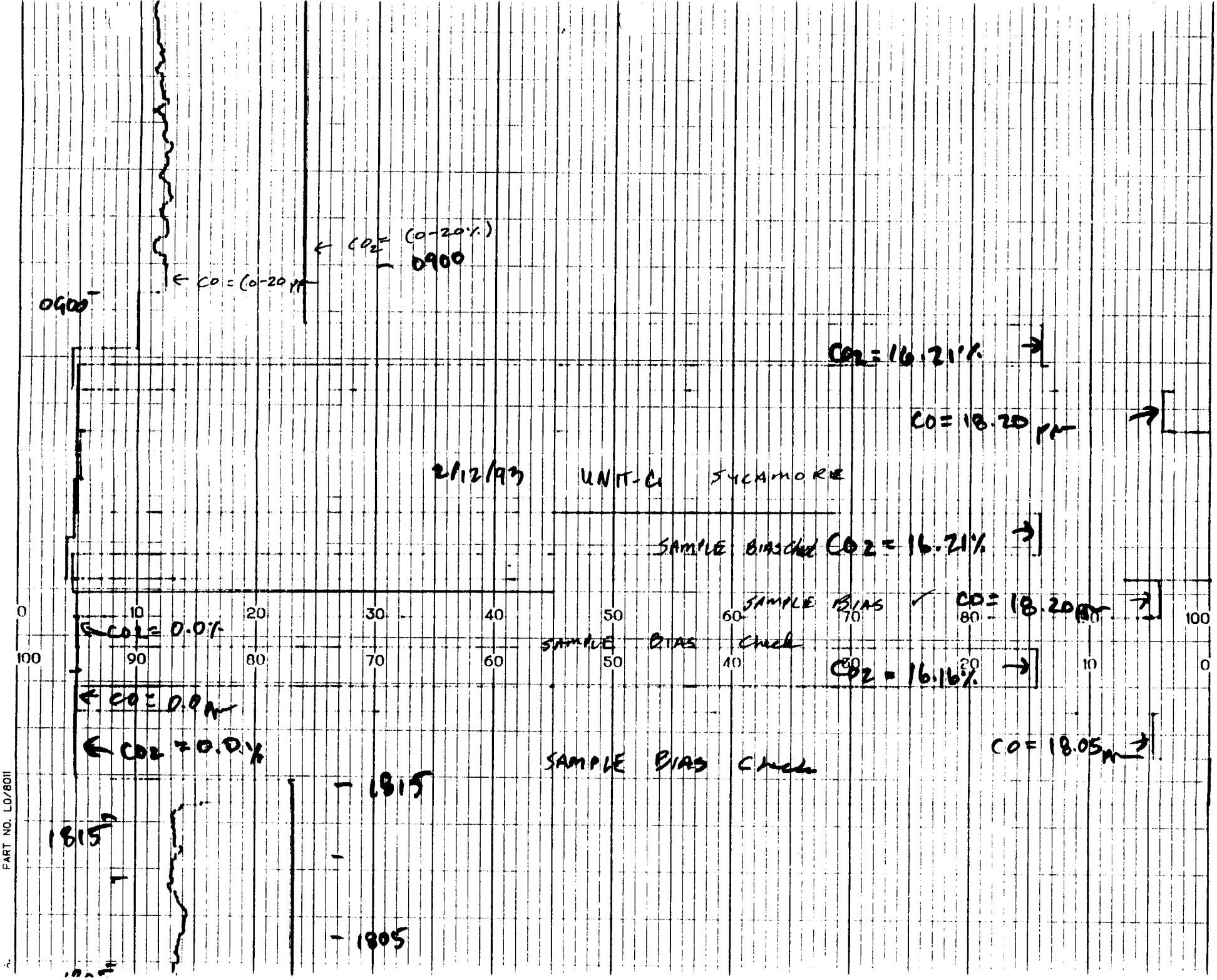

PRINTED IN U.S.A.
1635
1635
LINSEIS
CO2 = 16.21%
CO2 = 0.0%
CO = 0.0 ppm
CAL ADJUST
CO2 = 18.05 ppm
16.25%
CO = 0.15 ppm
CO2 = 0.09%
CO = 0.0 ppm
1615
1615
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
SYCAMORE
AFBC OUTLET
UNIT-4
RUN-1



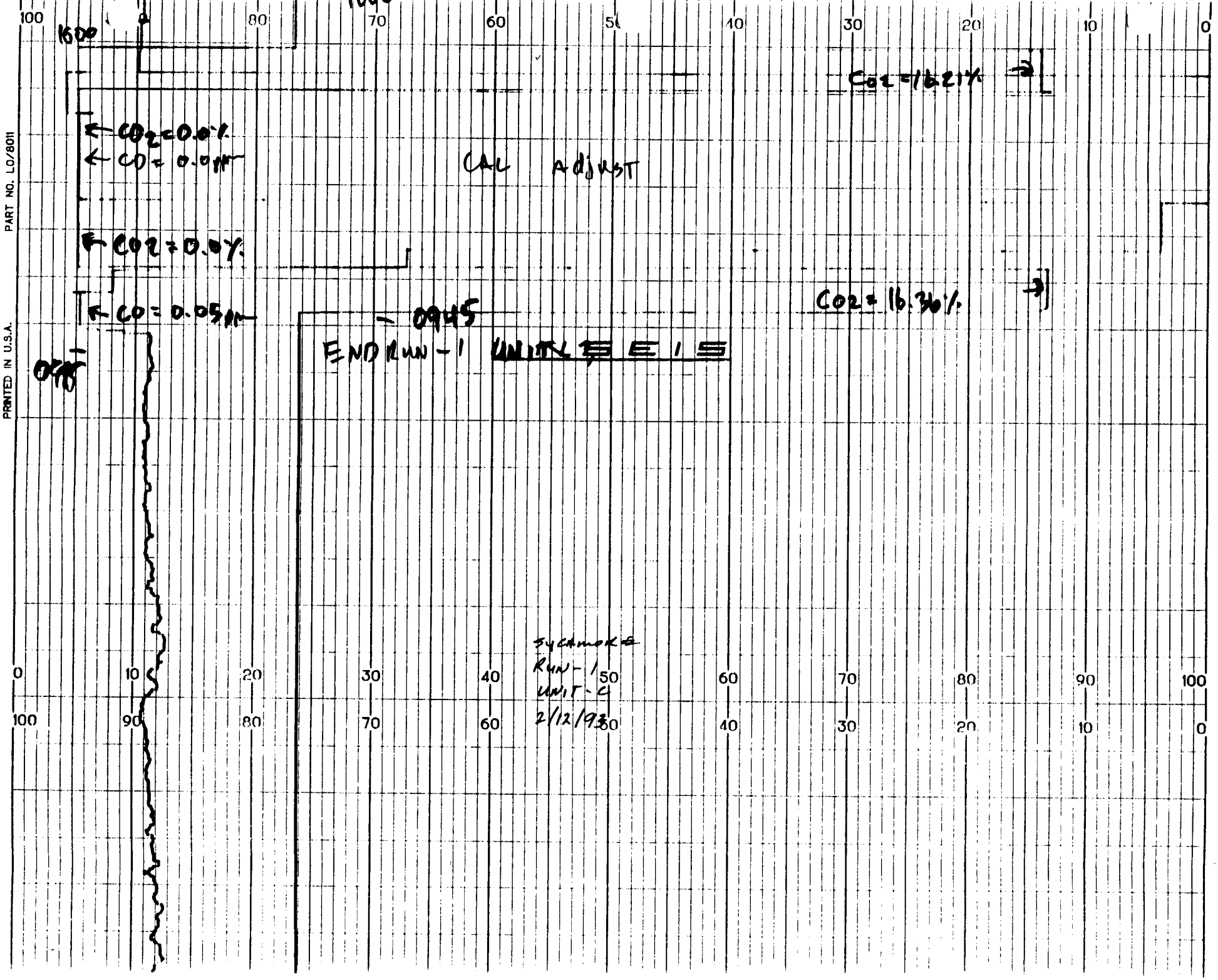
PART NO. LD/8011

PRINTED IN U.S.A.

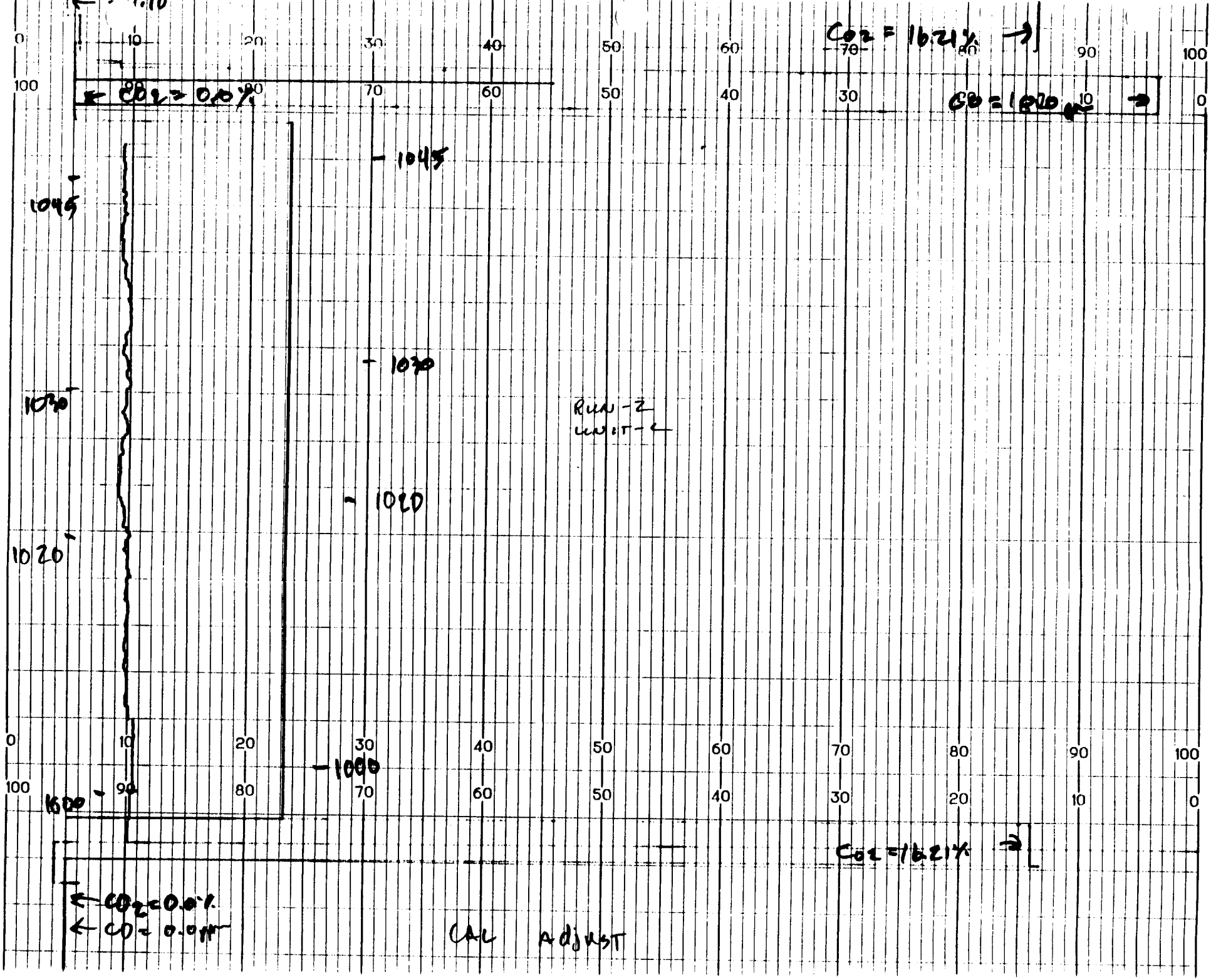

PART NO. LO/80
PRINTED IN U.S.A.
1815
1805
1790
1780
1775
LINSEIS
SYCAMORE
UNIT-4
RUN-3
2/11/93
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
END RUN-3
CO = 0.0%
CO2 = 0.0%
END RUN-2
CO2 = 16.21%
CO = 18.20%



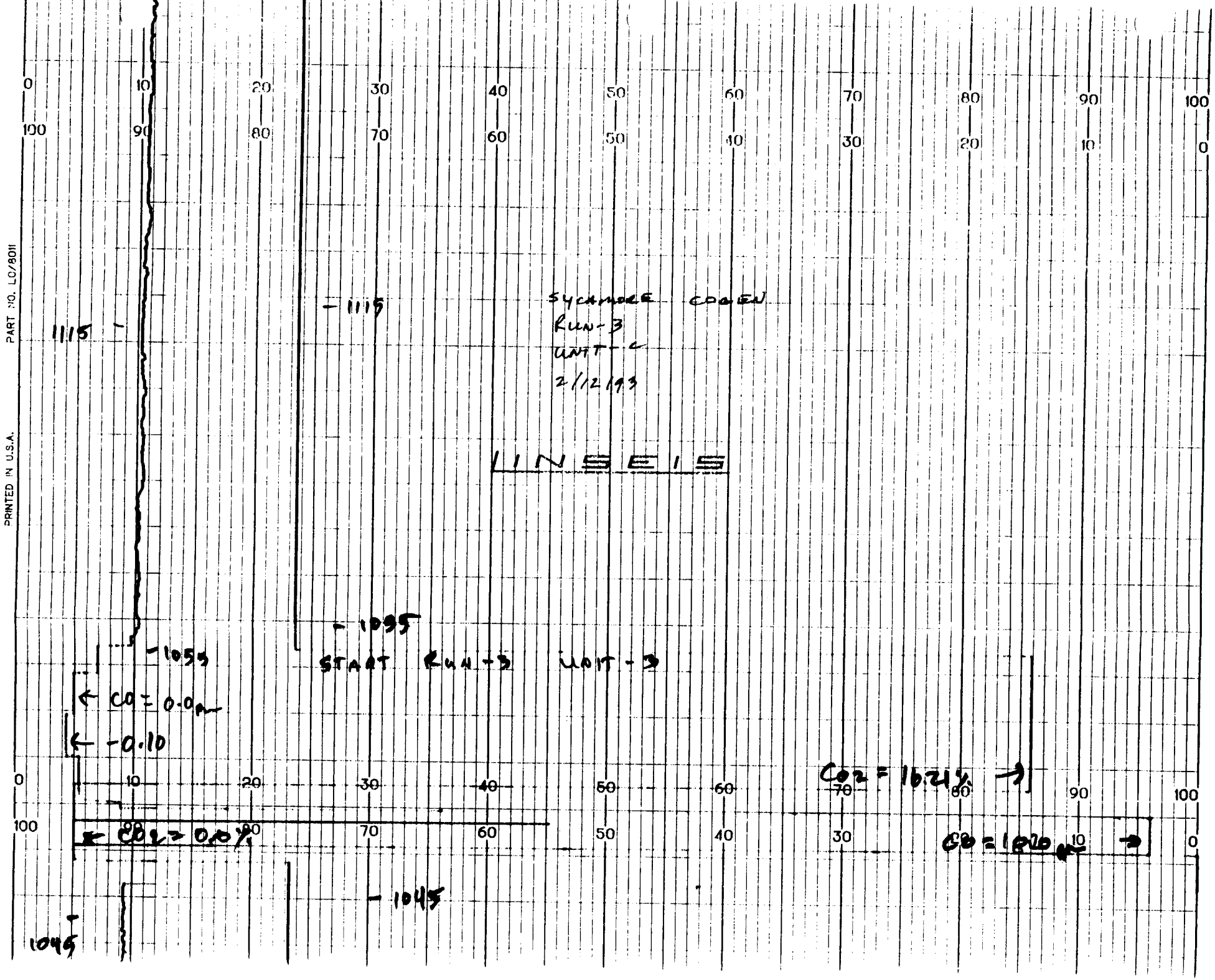
PART NO. LO/8011



100
80
70
60
50
40
30
20
10
0
1600
CO2 = 16.21%
← CO2 = 0.0%
← CO = 0.0 ppm
CAL Adjust
← CO2 = 0.0%
CO2 = 16.36%
← CO = 0.05 ppm
0945
END RUN - 1 UNIT 5 E 1 5
0
10
20
30
40
50
60
70
80
90
100
SYCAMORE
RUN - 1
UNIT - C
2/12/93
100
90
80
70
60
50
40
30
20
10
0
PART NO. LO/8011
PRINTED IN U.S.A.



CO2 = 16.21% →
← CO2 = 0.0%
CO = 1020 →
1045
1030
1020
1000
1600
RUN - 2
UNIT - 4
CO2 = 16.21% →
← CO2 = 0.0%
← CO = 0.0ppm
CAL Adjust
NO. LO/8011


PRINTED IN U.S.A.
PART NO. LO/8011
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
1115
1115
SYCAMORE COAL
RUN-3
UNIT-2
2/12/93
INSEIS
1095
1055
START RUN-3 UNIT-3
CO = 0.0 ppm
-0.10
CO2 = 16.21%
CO2 = 0.0%
CO = 1.20 ppm
1045
1045

Sycamore Cogen

0 10 20 30 40 50 60 70 80 90 100

100 90 80 70 60 50 40 30 20 10 0

← CO = 0.03 ppm

CO2 = 16.00% →

CO = 18.49 ppm →

SAMPLE BIAS CHECK

CO2 = 16.21% →

← CO = 0.18 ppm

← CO2 = 0.0%

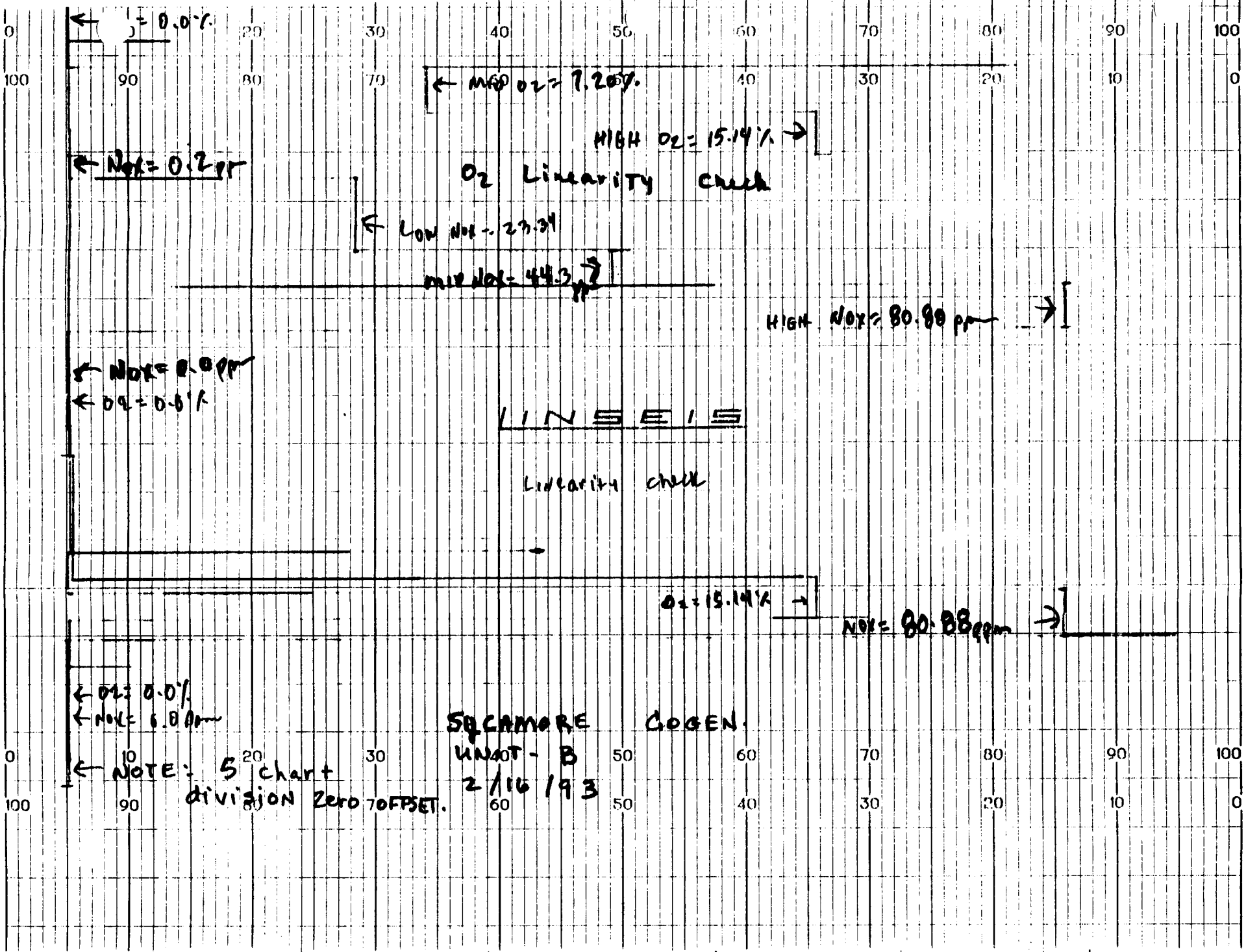
CO = 18.43 ppm →

1140 — 1140

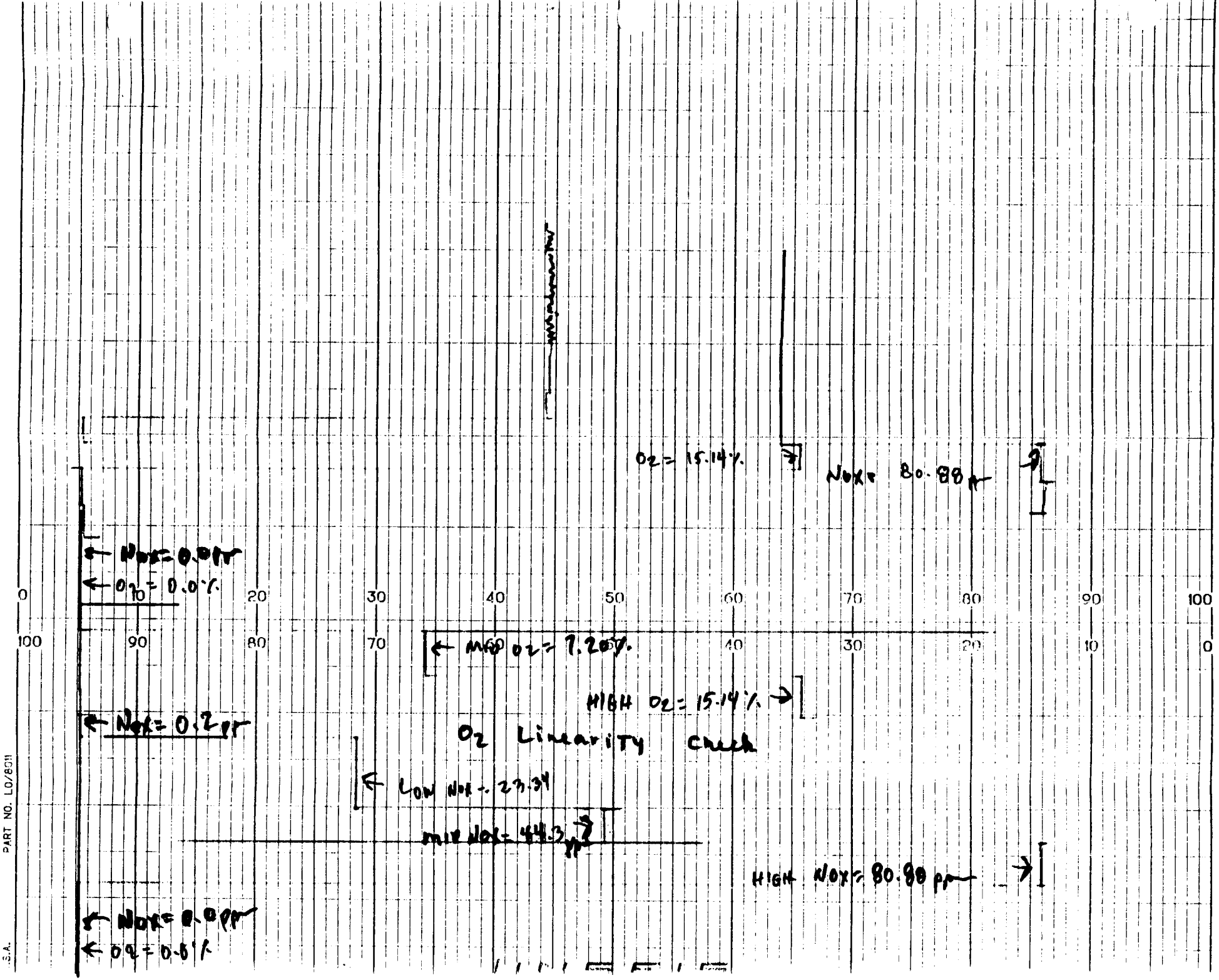
1140 END RUN - 3 UNIT - 3

0 10 20 30 40 50 60 70 80 90 100

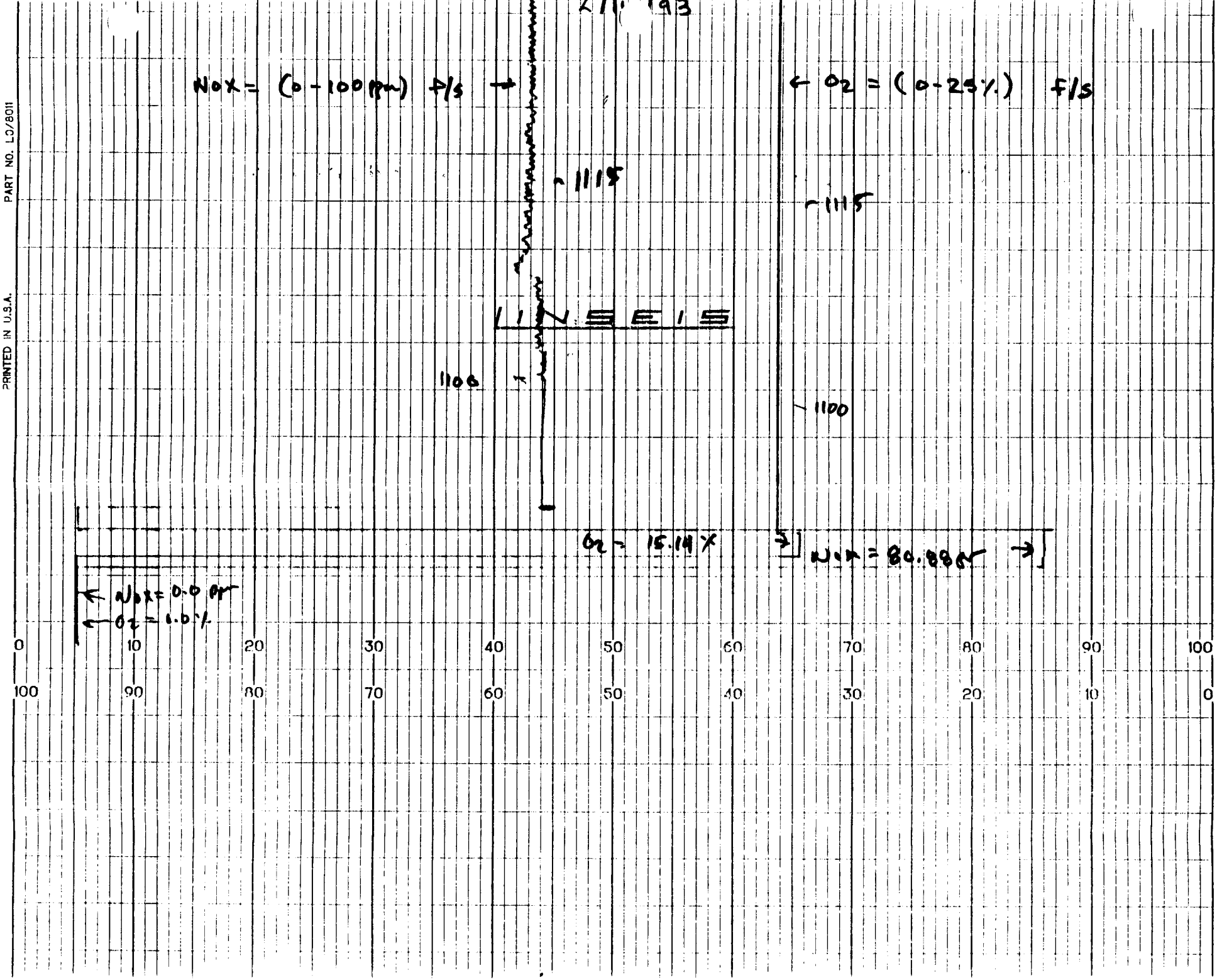
100 90 80 70 60 50 40 30 20 10 0



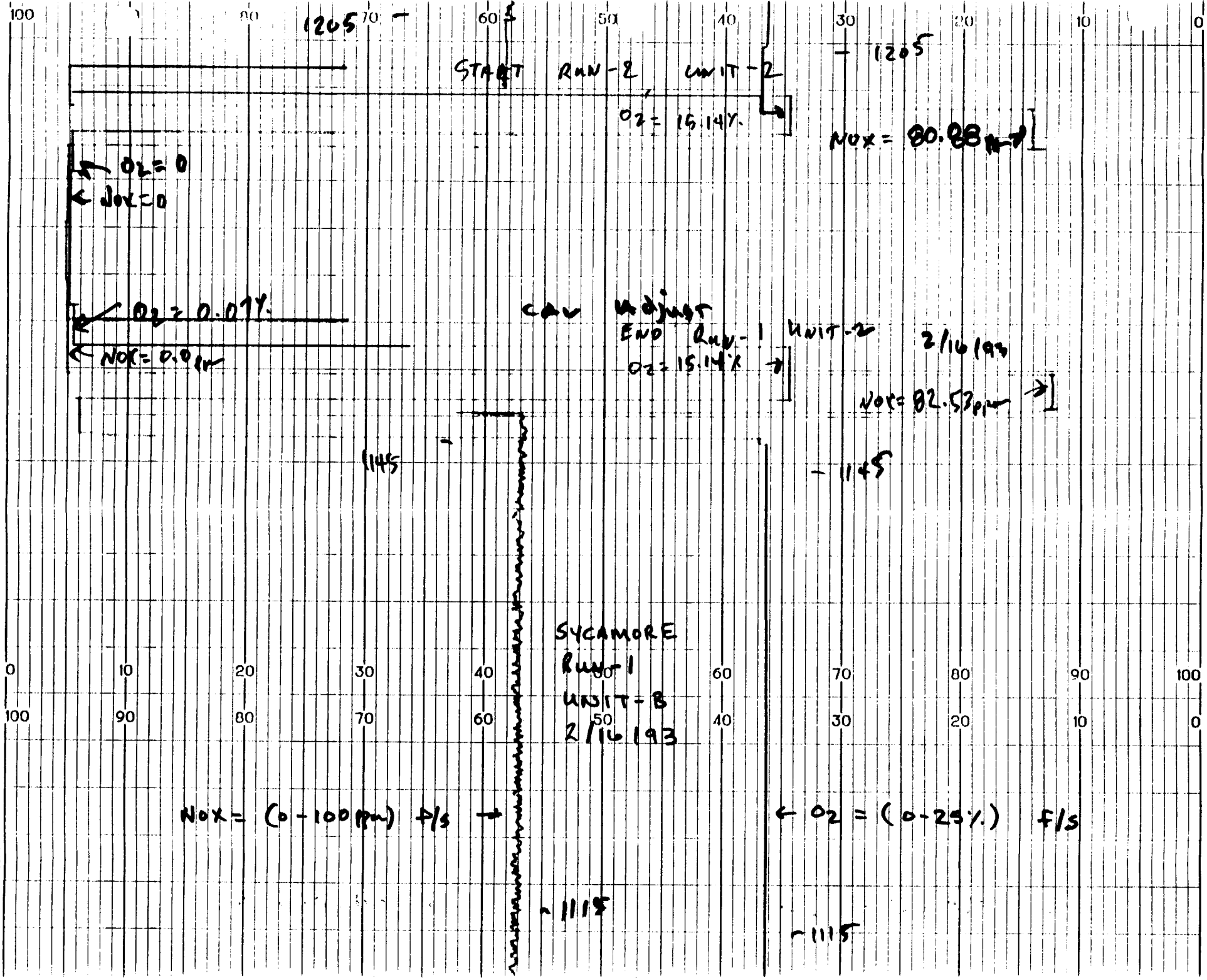
PRINTED IN U.S.A. PART NO. LO/8011

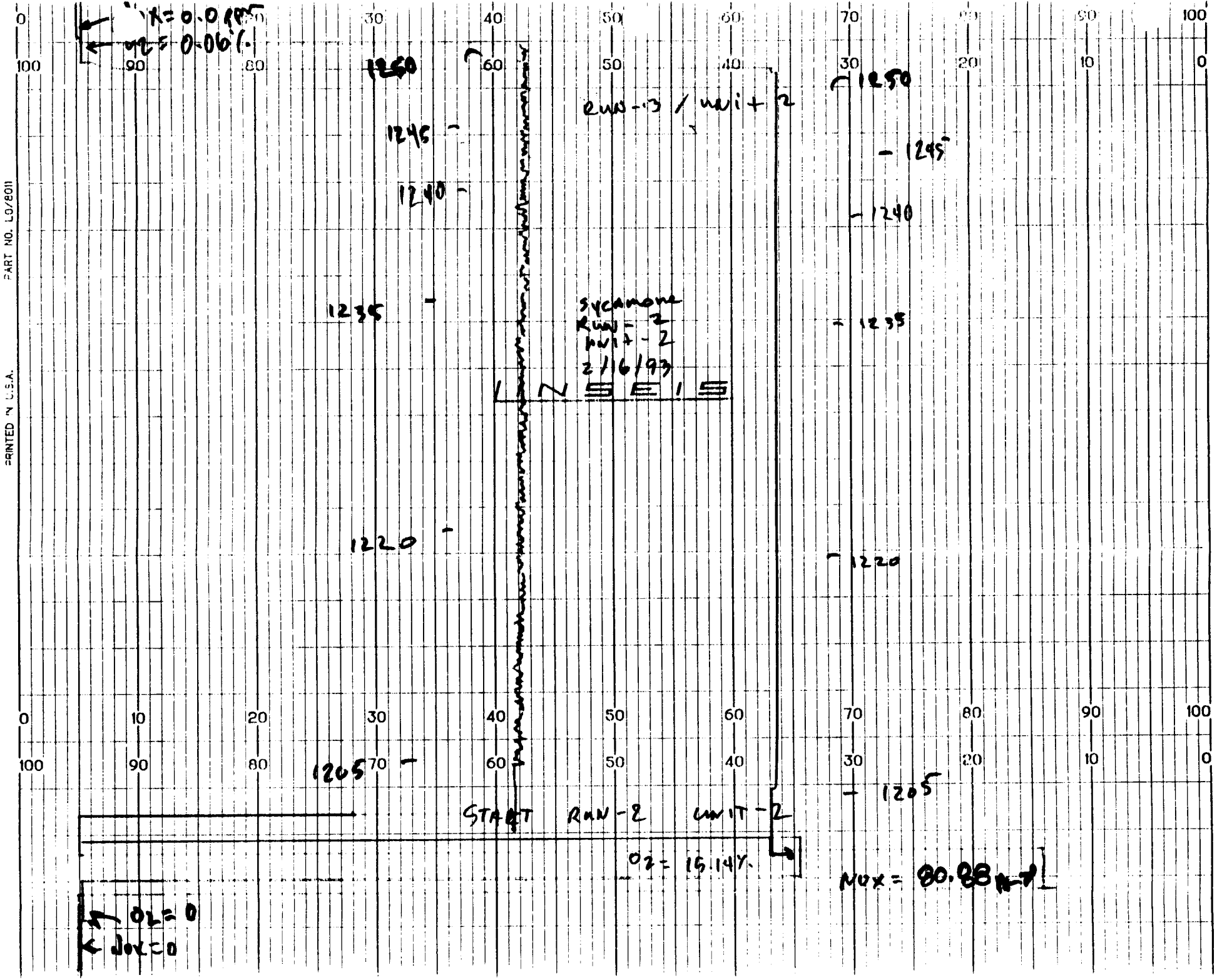


O2 = 15.14%
NOx = 80.88 ppm
← NOx = 0.0 ppm
← O2 = 0.0%
0 10 20 30 40 50 60 70 80 90 100
100 90 80 70 60 50 40 30 20 10 0
← MID O2 = 7.20%
HIGH O2 = 15.14%
← NOx = 0.2 ppm
O2 Linearity Check
← LOW NOx = 23.34
MID NOx = 44.3 ppm
HIGH NOx = 80.88 ppm
← NOx = 0.0 ppm
← O2 = 0.0%
PART NO. LO/8011

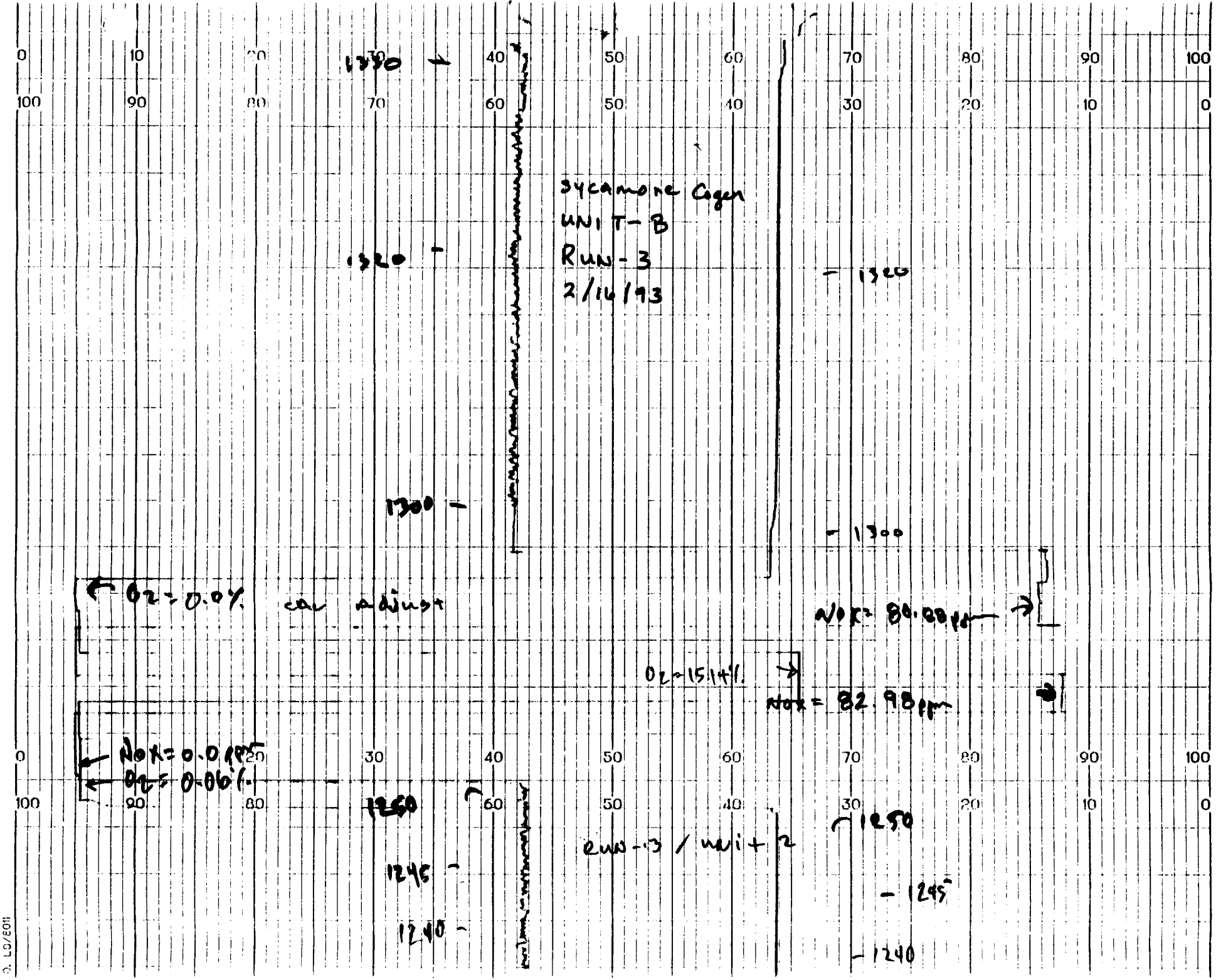


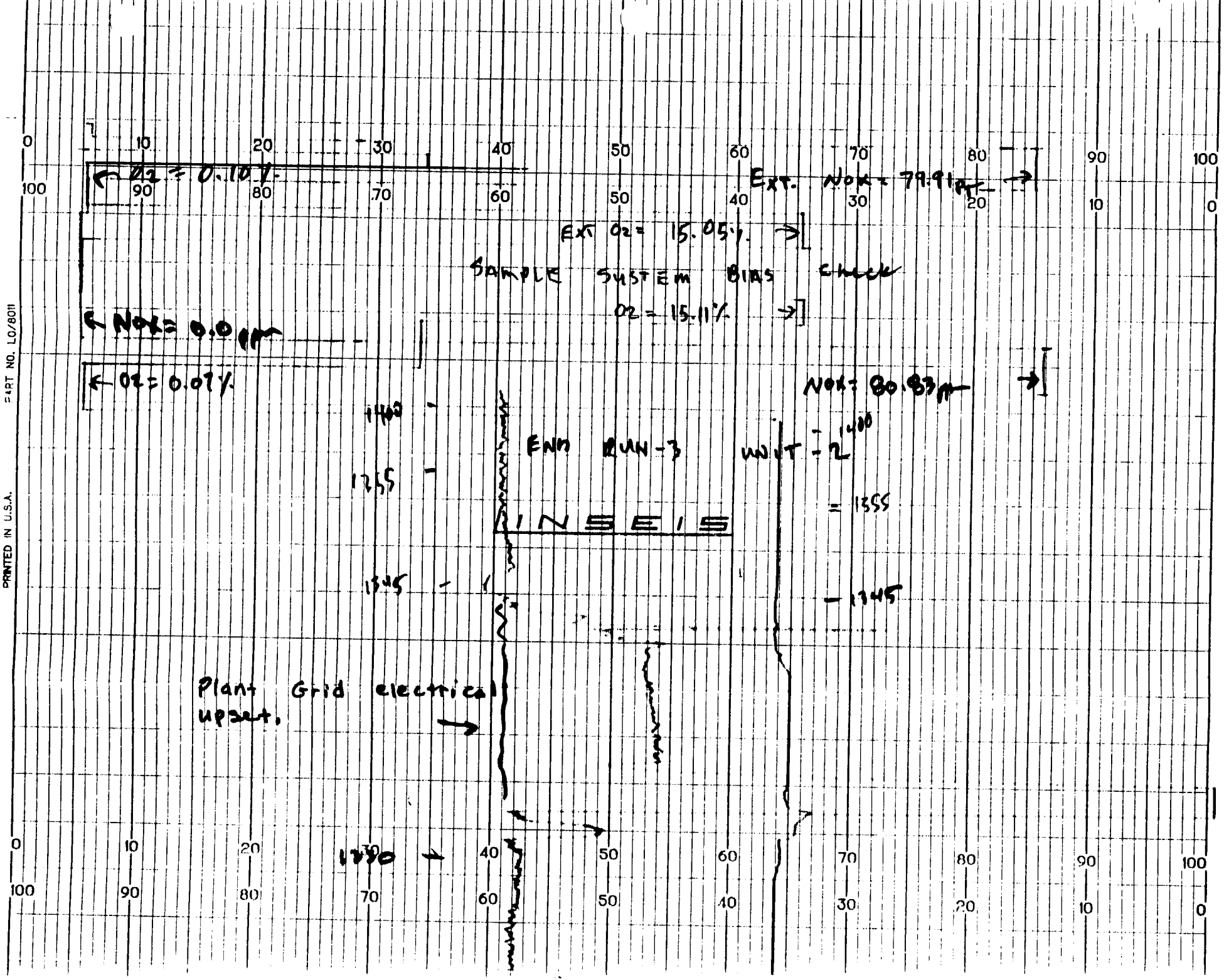
PRINTED IN U.S.A. PART NO. LO/8011


1205
START RUN-2 UNIT-2
O2 = 15.14%
NOx = 80.88 ppm
O2 = 0
NOx = 0
O2 = 0.07%
NOx = 0.0 ppm
CAV adjust
END RUN-1 UNIT-2
2/16/93
O2 = 15.14%
NOx = 82.53 ppm
1145
SYCAMORE
RUN-1
UNIT-B
2/16/93
NOx = (0-100 ppm) F/S
O2 = (0-25%) F/S
1115

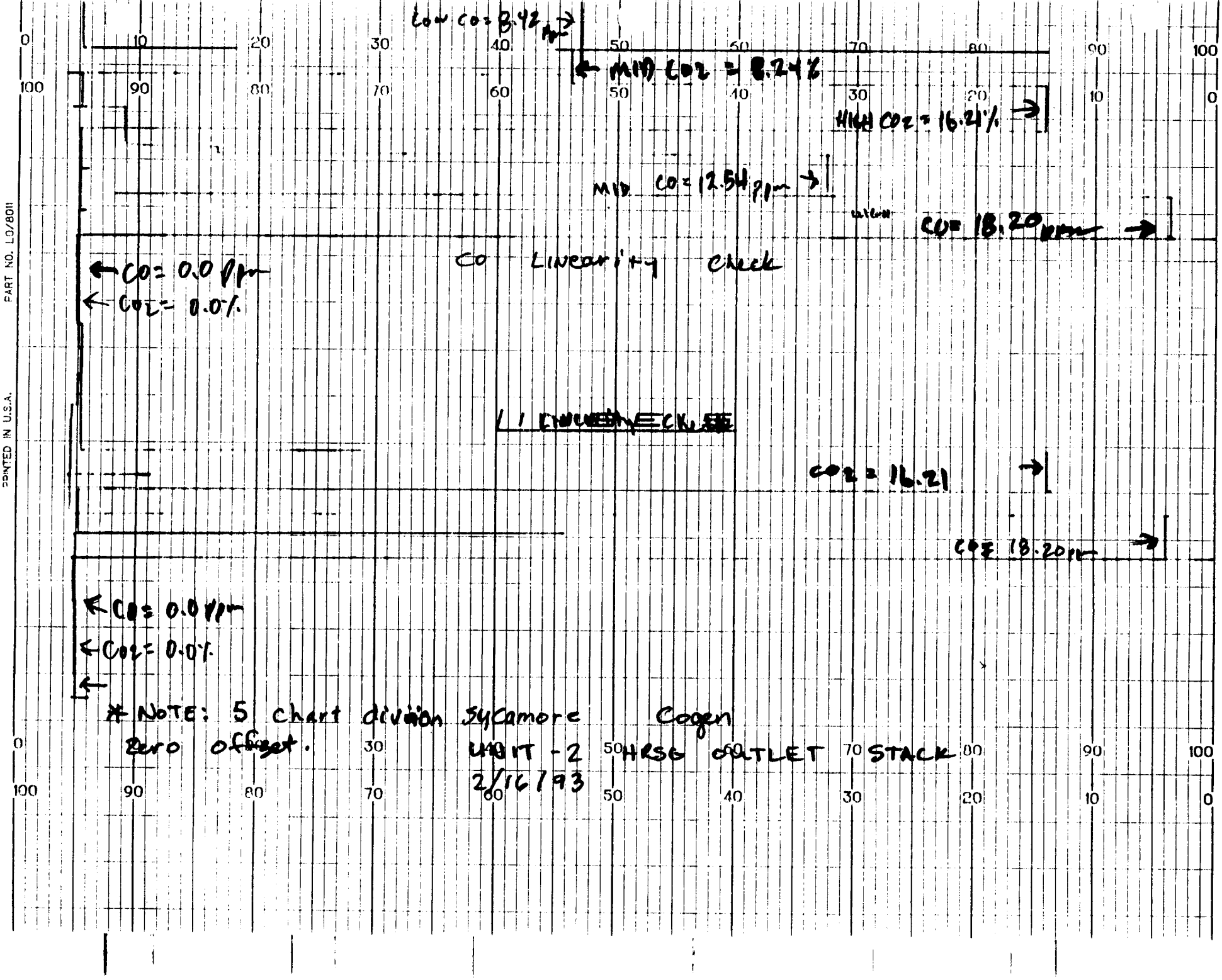


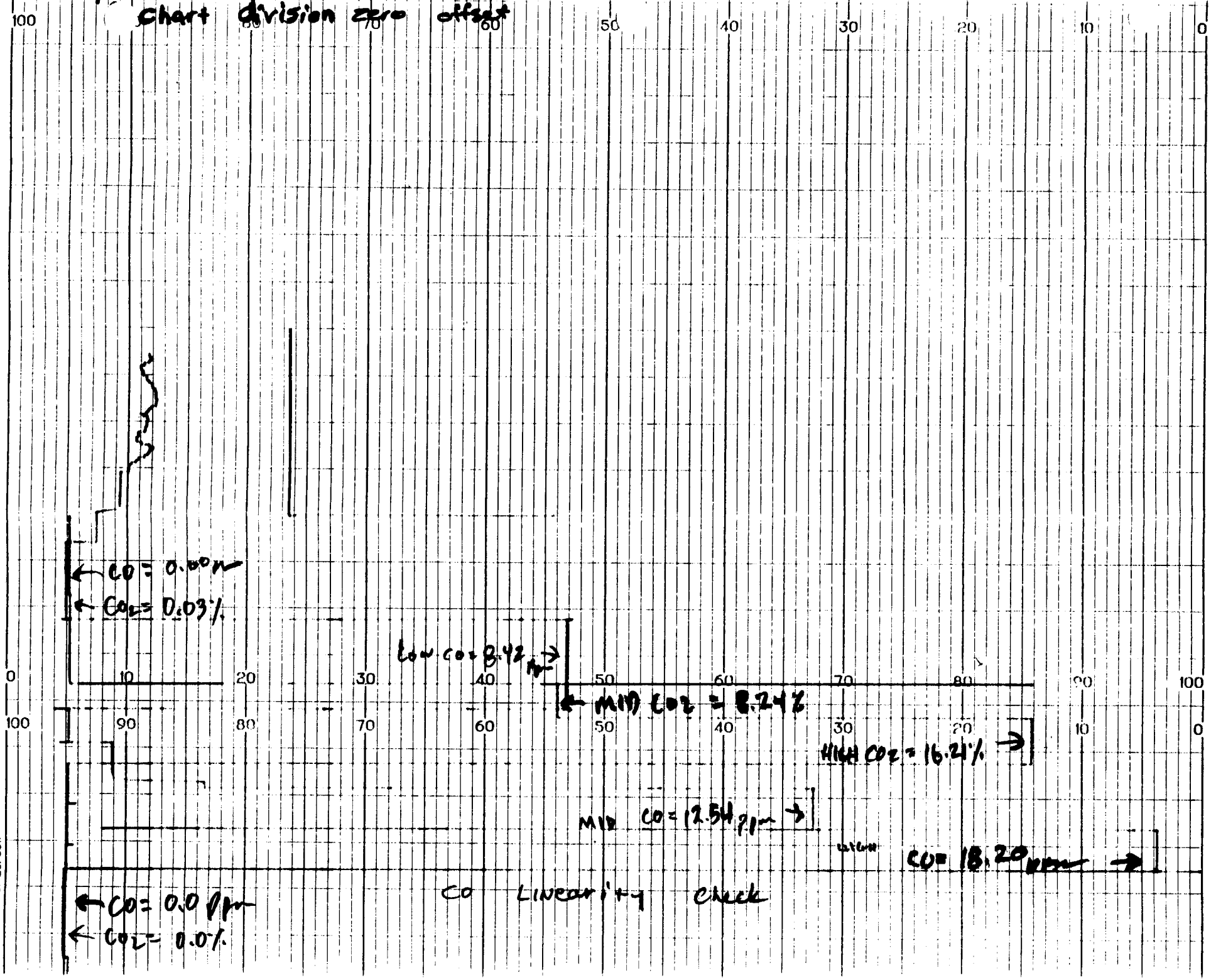
PART NO. LO/8011
PRINTED IN U.S.A.
1250
1245
1240
1235
1220
1205
RUN-3 / UNIT 2
SYCAMORE
RUN-2
UNIT-2
2/16/93
LINSEIS
START RUN-2 UNIT-2
O2 = 15.14%
NOX = 80.88
O2 = 0
NOX = 0


Sycamore Cogen
UNIT-B
RUN-3
2/16/93
1330
1320
1300
1250
1245
1240
O2 = 0.0% cal adjust
NOx = 0.0 ppm
O2 = 0.06%
NOx = 80.08 ppm
O2 = 15.14%
NOx = 82.98 ppm
run-3 / unit 2

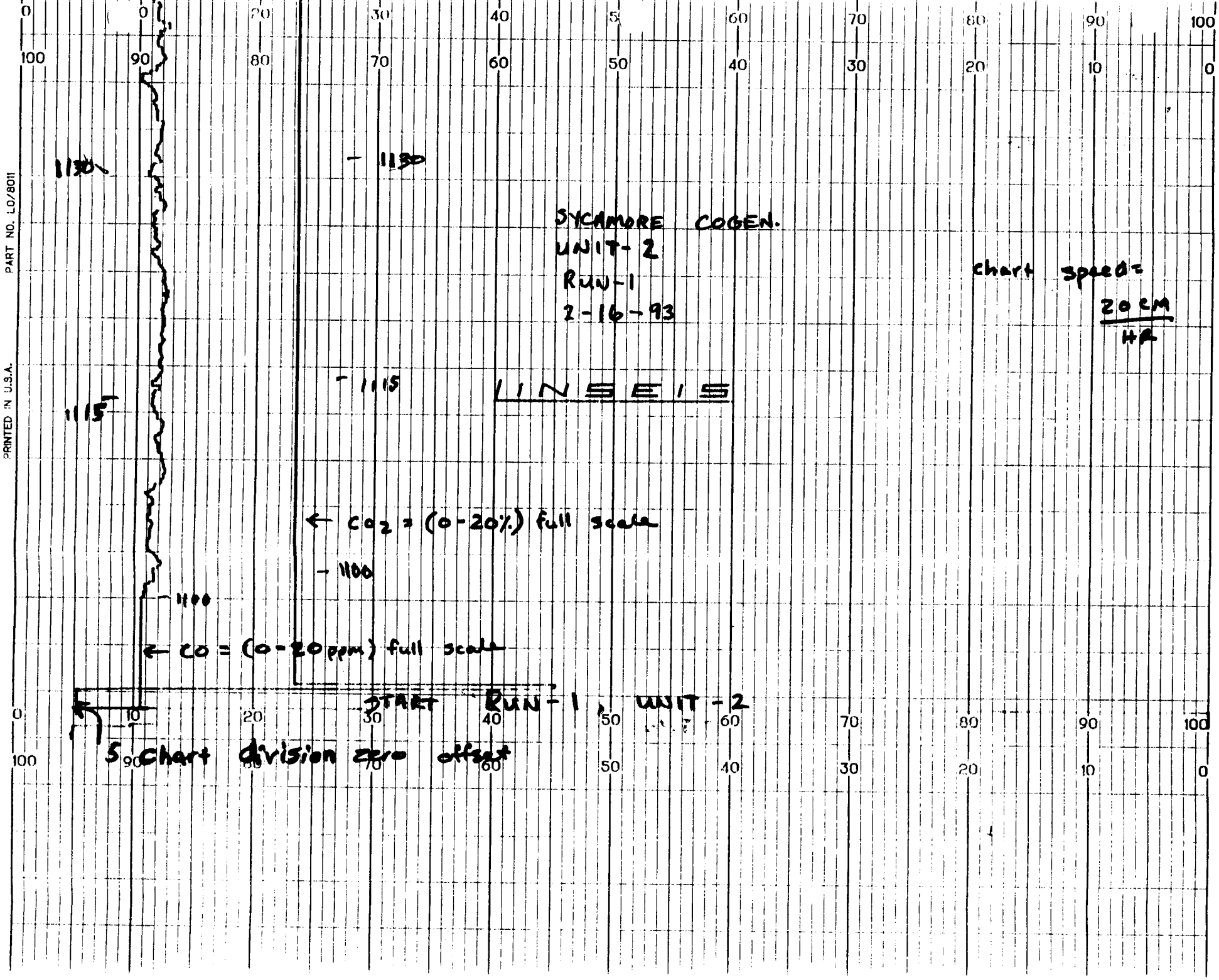


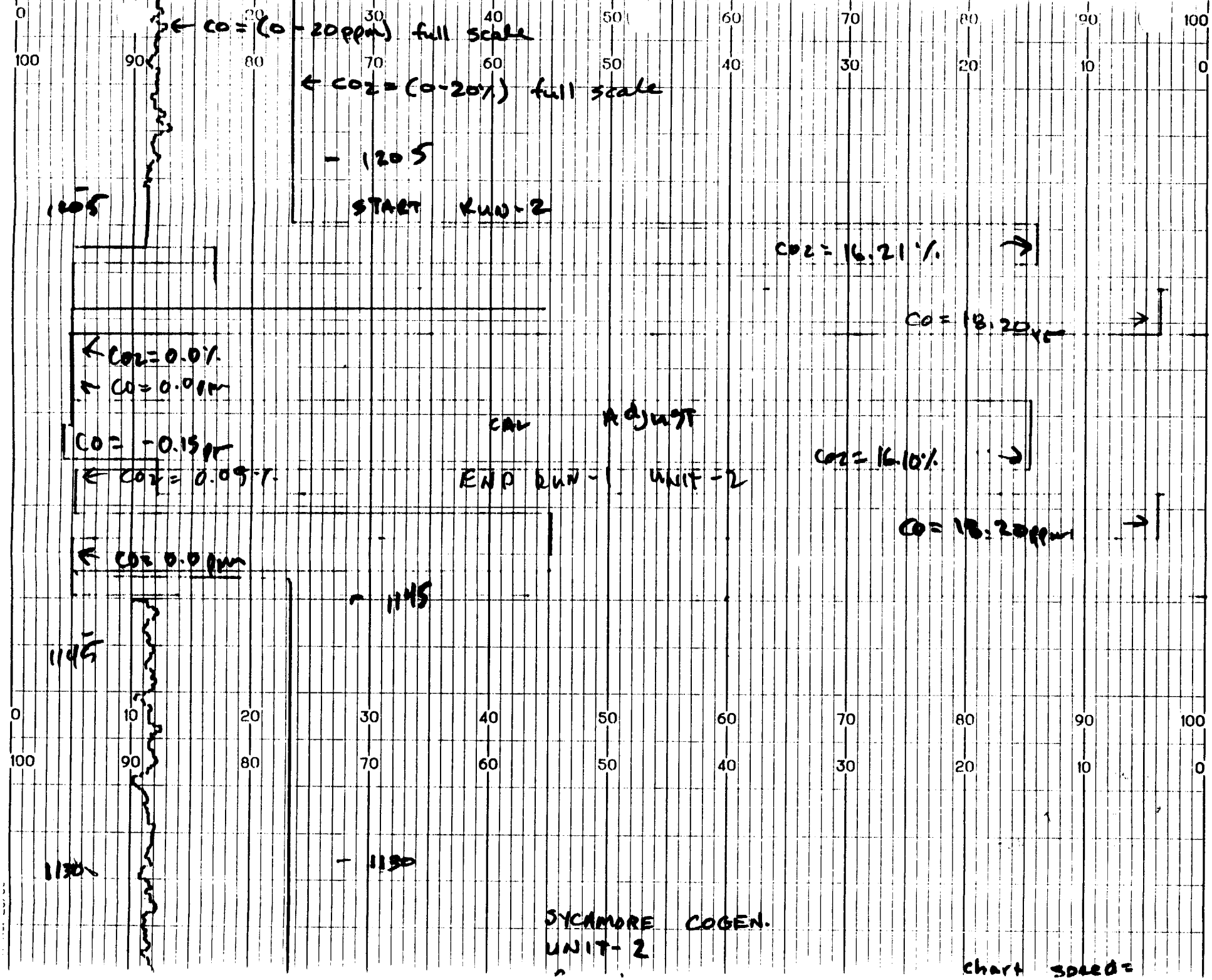
PRINTED IN U.S.A. PART NO. LO/8011

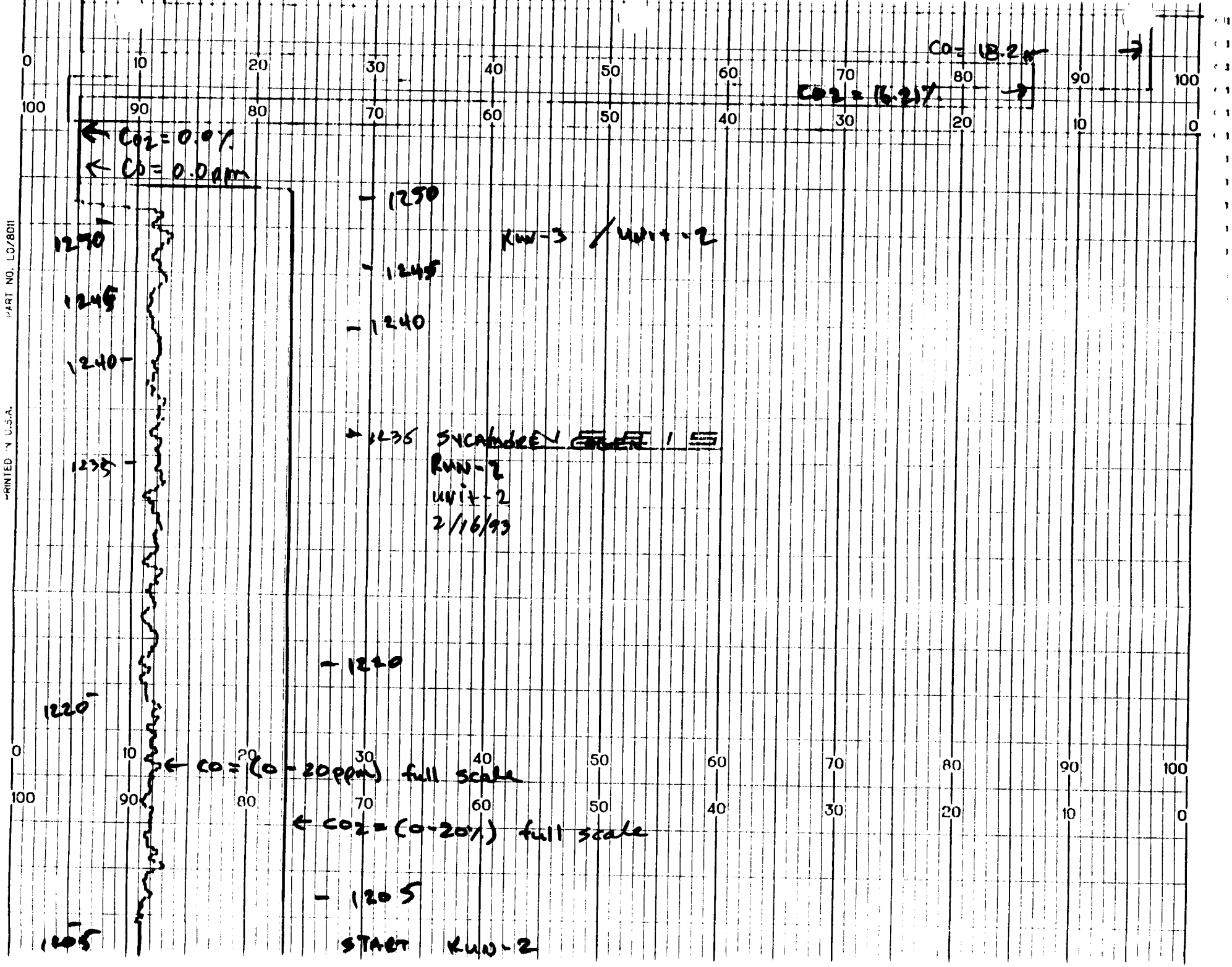

Low CO = 8.42 ppm
MID CO2 = 8.24%
HIGH CO2 = 16.21%
MID CO = 12.54 ppm
HIGH CO = 18.20 ppm
CO = 0.0 ppm
CO2 = 0.0%
CO Linearity Check
CO2 = 16.21
CO = 18.20 ppm
CO = 0.0 ppm
CO2 = 0.0%
* NOTE: 5 chart division Sycamore Cogen
Zero offset.
UNIT - 2 HRSG OUTLET STACK
2/16/93
PART NO. LO/8011
PRINTED IN U.S.A.



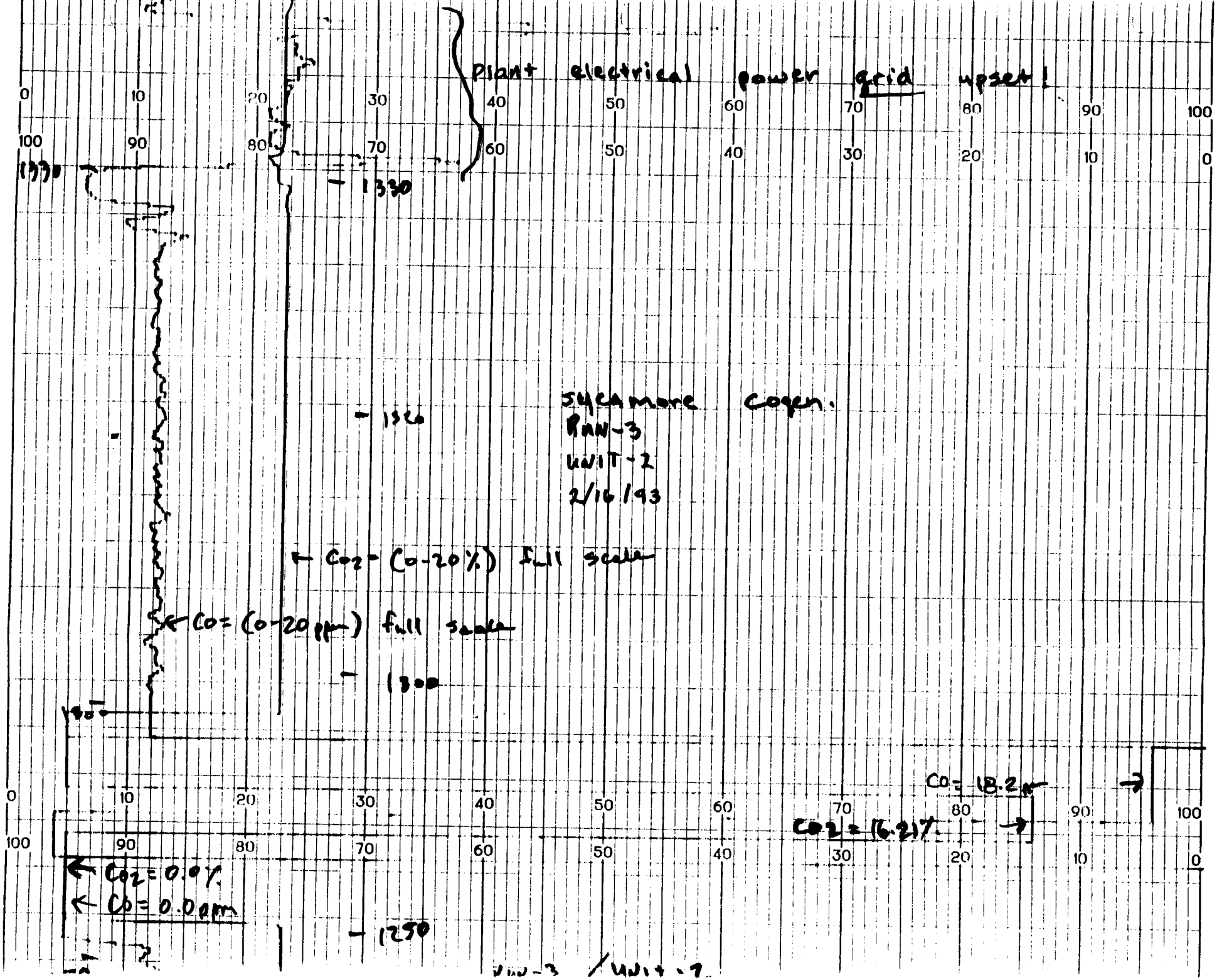
PART NO. LO/8011

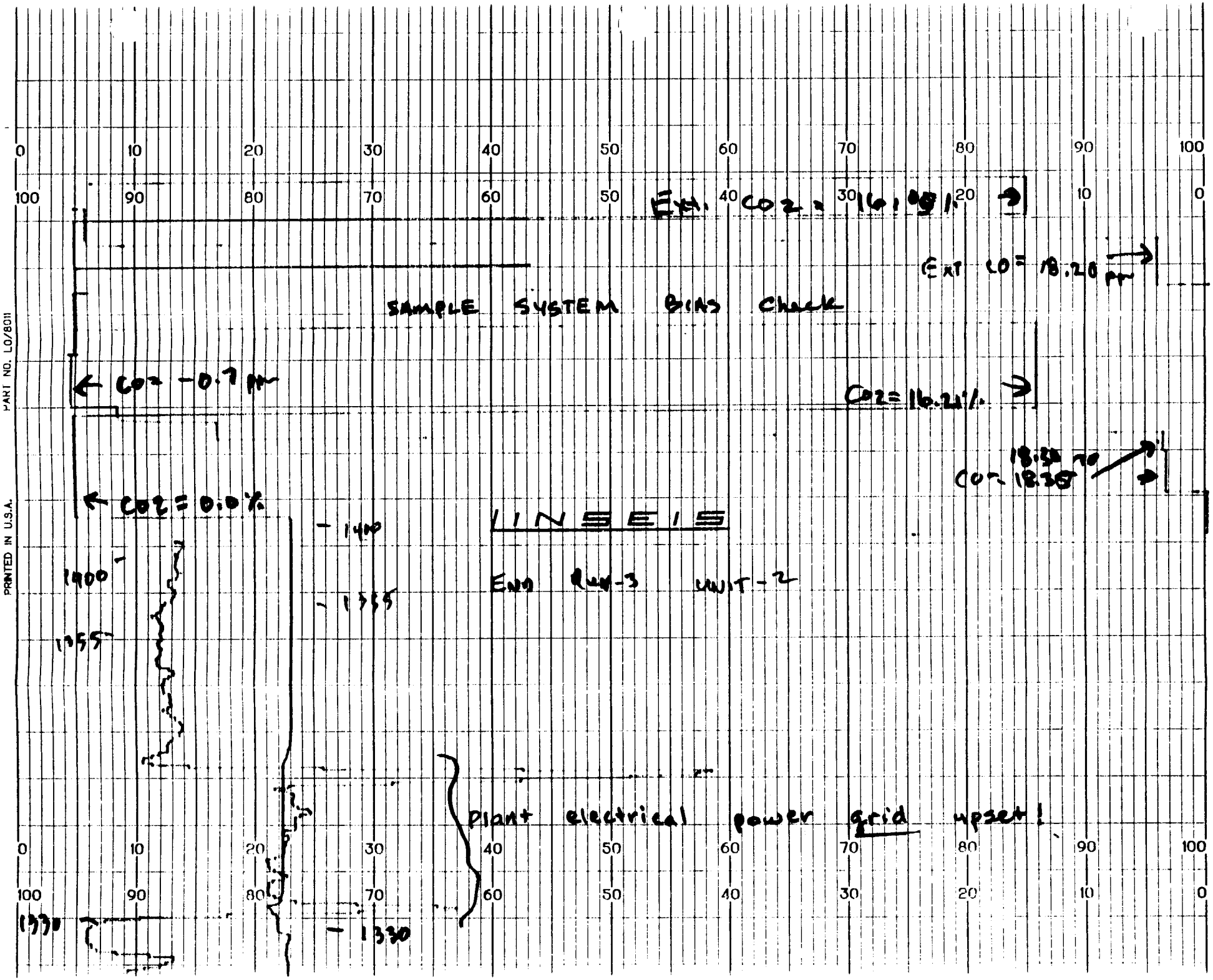

PART NO. LO/8011
PRINTED IN U.S.A.
1130
1115
1100
- 1130
- 1115
- 1100
SYCAMORE COGEN.
UNIT- 2
RUN-1
2-16-93
chart speed=
20 cm / HR
LINSEIS
← CO_2 = (0-20%) full scale
← CO = (0-20 ppm) full scale
START RUN-1, UNIT-2
5 chart division zero offset


← CO = (0 - 20 ppm) full scale
← CO2 = (0 - 20%) full scale
- 1205
START RUN - 2
1205
CO2 = 16.21 %
CO = 18.20 ppm
← CO2 = 0.0%
← CO = 0.0 ppm
CAL ADJUST
CO = -0.15 ppm
← CO2 = 0.09 %
END RUN - 1 UNIT - 2
CO2 = 16.10%
CO = 18.20 ppm
← CO2 0.0 ppm
- 1145
1145
- 1130
1130
SYCAMORE COGEN.
UNIT - 2
chart speed =



CO = 18.2
CO2 = 16.2%
CO2 = 0.0%
CO = 0.0 ppm
1250
1245
1240
1235
1220
1205
RUN-3 / UNIT-2
SYCAMORE
RUN-2
UNIT-2
2/16/93
CO = (0-20ppm) full scale
CO2 = (0-20%) full scale
START RUN-2
PART NO. LO/8011
PRINTED IN U.S.A.


Plant electrical power grid upset!
1330
1330
1300
Sycamore Cogen.
RAN-3
UNIT-2
2/16/93
← CO2 = (0-20%) Full scale
← CO = (0-20 ppm) full scale
1300
1250
CO = 18.2 ppm
CO2 = 16.2%
← CO2 = 0.0%
← CO = 0.0 ppm
1250
RAN-3 / UNIT-2



PART NO. LO/8011
PRINTED IN U.S.A.

APPENDIX B

LABORATORY DATA

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

ENGINEERING SCIENCE
2520 Pegasus Drive
Bakersfield, CA 93308

Lab. No.: 034829_001
Received: Feb 17, 1993
Reported: Feb 17, 1993

Attention: Troy Delfino

Sample Description: Sycamore Cogen BK9302004 2/12/93

* CHROMATOGRAPHIC ANALYSIS (Z 1635) *

Components	Mole %	Wt %	CHONS	Wt %
Hydrogen	0.000	0.000	CARBON	70.91
Carbon Dioxide	3.014	7.301	HYDROGEN	22.21
Oxygen	.045	.079	OXYGEN	5.39
Nitrogen	.963	1.484	NITROGEN	1.48
Carbon Monoxide	0.000	0.000	SULFUR	0.00
Hydrogen Sulfide	0.000	0.000		
Methane	89.475	78.994	Totals	99.99
Ethane	5.048	8.353	Total H/C	.31
Propane	1.169	2.836		
IsoButane	.105	.335		
N-Butane	.140	.448		
IsoPentane	.020	.079		
N-Pentane	.014	.056		
Hexanes+	.008	.036		
Totals =	100.000	100.000		

SPECIFIC GRAVITY (Air = 1)		.6286
SPECIFIC VOLUME, cu.ft./lb	*	20.85
GROSS CALORIFIC VALUE, BTU/cu.ft.	*	1018.93
GROSS CALORIFIC VALUE, BTU/cu.ft.	**	1036.55
GROSS CALORIFIC VALUE, BTU/lb	**	21607.10
NET CALORIFIC VALUE, BTU/cu.ft.	**	935.39
NET CALORIFIC VALUE, BTU/lb	**	19498.35
DSCF EXHAUST PER SCF FUEL (0% Oxygen)		8.8193
COMPRESSIBILITY FACTOR 'Z' (60 F,1 ATM)		.9977
EPA 'F' Factor @ 68 F:	8657.445 DSCF / MM Btu.	
KCAPCD 'F' Factor @ 60 F:	8527.583 DSCF / MM Btu.	

* Water Saturated

** Dry Gas @ 60 F, 14.73 psia

Analyst

Jim Etherton
Laboratory Director

4309 Armour Avenue Bakersfield, California 93308
(805) 395-0539 FAX (805) 395-3069

APPENDIX C

PLANT DATA

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	1001	DEG F	TTXD1_17	973	DEG F
TTXD1_2	947	DEG F	TTXD1_18	958	DEG F
TTXD1_3	973	DEG F	TTXC	985	DEG F
TTXD1_4	972	DEG F	TNH	100.0	% SPD
TTXD1_5	982	DEG F	TNR	103.8	% SPD
TTXD1_6	1013	DEG F	DW	81.56	MW
TTXD1_7	1019	DEG F	FDG1	30.00	INH2O
TTXD1_8	1009	DEG F	FDG2	77.2	INH2O
TTXD1_9	1009	DEG F	LTTH1	120	DEG F
TTXD1_10	1020	DEG F	TTXSPL	12[illegible]	DEG F
TTXD1_11	1002	DEG F	TTXSP1	74	DEG F
TTXD1_12	990	DEG F	TTXSP2	71	DEG F
TTXD1_13	972	DEG F	TTXSP3	63	DEG F
TTXD1_14	974	DEG F	CTDA1	630	DEG F
TTXD1_15	950	DEG F	CTDA2	624	DEG F
TTXD1_16	964	DEG F	FPG	3.30	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0480 MINUTES

DATA LIST 12 — 10 FEB 93 08:00:07 — PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	36	DEG F	BB4	0.11	IPS
FQG	12.008	#/SEC	BB5	0.21	IPS
FPRG	197.4	PSIG	BB7	0.07	IPS
FQT	11.982	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	8.871	#/SEC	CSGV	82.9	DEG
CTIM	51	DEG F	TIMR_01	43 139.7	HOURS
WQUF_PR	222	RPM	CPD	160.4	PSIG
WXC	0.633	RATIO	CTD	630	DEG F
WQC	8.057	#/SEC	CTIF1	81	DEG F
WXC	0.670	RATIO	CTIF2	51	DEG F
FSR	58.8	% FSR	TTXC	985	DEG F
WSQ	8.871	#/SEC	FSR	58.8	% FSR
BB1	0.38	IPS	HPA1	90.2	% H2
BB2	0.59	IPS	HPA2	89.9	% H2
BB3	0.11	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0480 MINUTES

Sycamore
Unit #1 - Gas

Unit 1
Run #1

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 08:39:00	12.013	7.995	0.665	0.638	51

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 03:39:00	9.066	3.300	0.363	0.327	51

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 04:39:00	9.077	3.300	0.363	0.330	49

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 05:39:00	9.067	3.300	0.364	0.332	49

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 06:39:00	9.358	3.802	0.397	0.370	48

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 07:39:00	12.078	8.173	0.676	0.650	50

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 09:39:00	12.001	7.929	0.660	0.638	51

Unit 1 Run #2

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 10:39:00	11.971	7.806	0.652	0.628	53

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 11:39:00	11.956	7.712	0.645	0.622	53

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 12:39:00	12.000	7.778	0.648	0.624	54

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
10 FEB 93 13:39:00	11.956	7.812	0.651	0.627	55

LOG PERIOD = [illegible] MINUTES

DATA LIST 12 11 FEB 93 09:18 PAGE[illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
[illegible]	[illegible]	DEG F	BB4	0.11	IPS
[illegible]	[illegible]	#/SEC	BB5	0.21	IPS
[illegible]	[illegible]	[illegible]	BB7	0.08	IPS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	BB9	[illegible]	IPS
FLAME	[illegible]		[illegible]	[illegible]	DEG
WSQ	[illegible]	#/SEC	TIMPL01	43 165.0	HOURS
CTIM	[illegible]	DEG F	[illegible]	[illegible]	PSIG
[illegible]	[illegible]	[illegible]	CTD	635	DEG F
[illegible]	[illegible]	RATIO	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	FSP	[illegible]	% FSP
[illegible]	[illegible]	[illegible]	HPA1	[illegible]	% H2
BB1	[illegible]	[illegible]	HPA2	90.7	% H2
BB2	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]			

REMOTE LOW HEALTH

Sycamore Cogen

LOG PERIOD = [illegible] MINUTES

Unit 1

11 FEB 93 [illegible] REMOTE DIAGNOSTIC ALARM

11 FEB 93 [illegible] REMOTE DIAGNOSTIC ALARM NORM

DATA LIST 12 DEMAND DISPLAY 11 FEB 93 09:20:36 PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	PAGE
[illegible]	[illegible]	DEG F	TTXD1L17	[illegible]	DEG F	[illegible]
TTXD1L2	[illegible]	DEG F	TTXD1L18	[illegible]	DEG F	[illegible]
[illegible]	[illegible]	DEG F	[illegible]	[illegible]	DEG F	
[illegible]	[illegible]	DEG F	[illegible]	[illegible]	% SPD	
[illegible]	[illegible]	DEG F	[illegible]	[illegible]	% SPD	[illegible]
TTXD1L6	[illegible]	DEG F	→ [illegible]	[illegible]	MW	[illegible]
TTXD1L7	1022	DEG F	FDG1	30.00	INH20	
TTXD1L8	[illegible]	DEG F	FDG2	[illegible]	INH20	
[illegible]	[illegible]	DEG F	[illegible]	123	DEG F	DELETE
[illegible]		DEG F	[illegible]	[illegible]	DEG F	[illegible]

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 09:30:01

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	1006	DEG F	TTXD1_17	979	DEG F
TTXD1_2	950	DEG F	TTXD1_18	960	DEG F
TTXD1_3	975	DEG F	TTXC	986	DEG F
[illegible]	[illegible]	DEG F	[illegible]	100.0	% [illegible]
TTXD1_5	[illegible]	DEG F	TNP	[illegible]	% [illegible]
TTXD1_6	[illegible]	DEG F	[illegible]	30.81	MW
TTXD1_7	1001	DEG F	FDG1	30.00	INH2O
TTXD1_8	1013	DEG F	FDG2	79.3	INH2O
TTXD1_9	1010	DEG F	LTTH1	123	DEG F
[illegible]	[illegible]	DEG F	TTXSPL	126	DEG F
[illegible]	[illegible]	DEG F	TTXSP1	73	DEG F
[illegible]	[illegible]	DEG F	TTXSP2	[illegible]	DEG F
TTXD1_13	[illegible]	DEG F	TTXSP3	62	DEG F
TTXD1_14	[illegible]	DEG F	CTDA1	636	DEG F
TTXD1_15	[illegible]	DEG F	CTDA2	631	DEG F
TTXD1_16	[illegible]	DEG F	[illegible]	[illegible]	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 09:30:06

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	47	DEG F	BB4	0.11	IPS
FQG	12.016	#/SEC	BB5	0.22	IPS
FPPG	[illegible]	PSIG	BB7	[illegible]	IPS
FQT	12.004	#/SEC	BB8	[illegible]	IPS
FLAME	[illegible]		[illegible]	[illegible]	IPS
WSQ	6.204	#/SEC	CSGV	82.9	DEG
CTIM	54	DEG F	TIMR_01	43 165.2	HOURS
WQJFLPR	210	RPM	CPD	158.8	PSIG
WXC	[illegible]	RATIO	CTD	[illegible]	DEG F
WQJ	[illegible]	#/SEC	CTIF1	54	DEG F
WXJ	0.627	RATIO	CTIF2	54	DEG F
FSR	[illegible]	% FSR	TTXC	[illegible]	DEG F
WSQ	6.204	#/SEC	FSR	59.7	% FSR
BB1	[illegible]	IPS	HPA1	91.0	% H2
BB2	[illegible]	IPS	HPA2	90.7	% H2
BB3	[illegible]	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 09:39:00	12.090	7.684	0.631	0.604	[illegible]

Unit 1 - Gas Begin Run #3

DATA LIST 12 — 11 FEB 93 09:45:01 — PAGE [illegible]

DEVICE DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1L1	1004	DEG F	TTXD1L17	980	DEG F
TTXD1L3	850	DEG F	TTXD1L18	962	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	DEG F	[illegible]	100.0	[illegible]
TTXD1L5	862	DEG F	TWR	105.0	[illegible]
TTXD1L6	1014	DEG F	→ CW	80.06	MW
TTXD1L7	[illegible]	DEG F	FD31	30.00	INH2O
TTXD1L8	1018	DEG F	FD32	78.9	INH2O
[illegible]	[illegible]	DEG F	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
TTXD1L11	1005	DEG F	TTXSPL	74	DEG F
TTXD1L12	[illegible]	DEG F	TTXSPR	70	DEG F
TTXD1L13	930	DEG F	TTXIPD	63	DEG F
TTXD1L14	[illegible]	DEG F	[illegible]	634	DEG F
[illegible]	[illegible]	DEG F	CTDAL	681	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 — 11 FEB 93 09:45:15 — PAGE [illegible]

DEVICE DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
STG	27	DEG F	TDA	0.11	IPS
→ FGL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0.07	IPS
FQT	11,972	#/SEC	BSB	0.03	IPS
FLAME	#0##7#6		DBP	0.04	IPS
WBO	[illegible]	#/SEC	DSGV	82.9	DEG
[illegible]	92	DEG F	[illegible]	43 [illegible]	HOURS
WDIF_PA	207	[illegible]	[illegible]	157.9	PSIG
WXC	[illegible]	RATIO	[illegible]	[illegible]	DEG F
→ WGC	[illegible]	#/SEC	[illegible]	53	DEG F
WXC	[illegible]	RATIO	[illegible]	55	DEG F
FGA	59.2	[illegible]	[illegible]	[illegible]	DEG F
WGC	[illegible]	#/SEC	[illegible]	[illegible]	[illegible]
SG1	[illegible]	IPS	[illegible]	[illegible]	[illegible]
BB2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BB3	0.29	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

[illegible] 11 FEB 93 [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	1006	DEG F	TTXD1_17	979	DEG F
TTXD1_2	952	DEG F	TTXD1_18	964	DEG F
TTXD1_3	977	DEG F	TTXI	990	DEG F
TTXD1_4	974	DEG F	TNH	100.0	% SPD
TTXD1_5	989	DEG F	TNR	103.8	% SPD
TTXD1_6	1015	DEG F	→ DW	79.82	MW
TTXD1_7	1022	DEG F	FDG1	30.00	INHD
TTXD1_8	1014	DEG F	FDG2	78.9	INHD
TTXD1_9	1011	DEG F	LTTH1	123	DEG F
TTXD1_10	1026	DEG F	TTXSPL	126	DEG F
TTXD1_11	1005	DEG F	TTXSP1	74	DEG F
TTXD1_12	996	DEG F	TTXSP2	73	DEG F
TTXD1_13	[illegible]	DEG F	TTXSP3	62	DEG F
TTXD1_14	[illegible]	DEG F	CTDA1	637	DEG
TTXD1_15	957	DEG F	CTDA2	636	DEG F
TTXD1_16	972	DEG F	FPG	3.29	[illegible]

REMOTE LINK HEALTHY

LOG PERIOD = [illegible] MINUTES

[illegible] 11 FEB 93 [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	[illegible]	DEG F	BB4	0.11	IPS
→ FDG	[illegible]	#/SEC	BB5	0.21	IPS
FPPG	197.3	[illegible]	BB7	0.07	IPS
FOT	[illegible]	#/SEC	BB8	0.03	IPS
FLAME	#0#4#7#0		BB9	0.04	IPS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	INRL01	[illegible]	HOURS
WQCFLPR	[illegible]	RPM	CPD	158.0	PSIG
WXC	0.590	RATIO	CTD	637	DEG F
→ WQC	7.429	#/SEC	CTIF1	57	DEG F
WXC	0.618	RATIO	CTIF2	56	DEG F
FSR	[illegible]	% FSR	TTXC	[illegible]	DEG F
WQC	[illegible]	#/SEC	FOR	[illegible]	% FSR
BB1	[illegible]	IPS	HPA1	91.1	% H2
BB2	0.38	IPS	HPA2	90.8	% H2
BB3	0.26	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = [illegible] MINUTES

DATA LIST 12 11 FEB 93 10:15:02 PAGE

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TTXD1_8	1012	DEG F	FDG2	79.5	INH20
TTXD1_9	1009	DEG F	LTTH1	123	DEG F
TTXD1_10	1024	DEG F	TTXSPL	126	DEG F
TTXD1_11	1004	DEG F	TTXSP1	76	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TTXD1_14	[illegible]	DEG F	LTDH1	566	DEG F
TTXD1_15	947	DEG F	TTDH1	586	DEG F
[illegible]	[illegible]	DEG F	FPG	3.29	[illegible]

REMOTE LOOK HEALTHY

LOG PERIOD = [illegible] MINUTES

DATA LIST 12 11 FEB 93 10:15:08 [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	48	DEG F	BB4	0.10	IPS
FQG	11.983	#/SEC	BB5	0.20	IPS
FPRG	197.3	PSIG	DBT	0.07	IPS
FQT	[illegible]	#/SEC	DDB	0.13	IPS
[illegible]	[illegible]		DBP	0.05	IPS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG
QTIM	56	DEG F	TIMR_01	43 166.0	HOURS
[illegible]	[illegible]	[illegible]	LPB	158.7	[illegible]
WXL	[illegible]	[illegible]	LTD	636	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	56	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	488	DEG F
WBI	[illegible]	#/SEC	FBR	59.7	% FBR
BB1	[illegible]	IPS	HP41	91.1	% HI
BB2	[illegible]	IPS	HP42	90.8	% HI
[illegible]	[illegible]	[illegible]			

REMOTE LOOK HEALTHY

LOG PERIOD = [illegible] MINUTES

WQJ = 7.422
FQG = 11.976
DW = 80.02
Unit 1 - Gas End Run #3

DATA LIST 12 11 FEB 93 10:30:01 [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	[illegible]	DEG F	TTXD1_17	979	DEG F
TTXD1_2	951	DEG F	TTXD1_18	962	DEG F
TTXD1_3	978	DEG F	TTXC	990	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TTXD1_5	[illegible]	DEG F	TNR	100.8	% SPD
TTXD1_6	[illegible]	DEG F	LW	79.94	MW
TTXD1_7	1021	DEG F	FDG1	30.00	INH20
TTXD1_8	1015	DEG F	FDG2	79.0	INH20
TTXD1_9	1012	DEG F	LTTH1	123	DEG F
[illegible]	[illegible]	DEG	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	DEG F	TTXSP	[illegible]	DEG F

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 10:30:07 PAGE

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	49	DEG F	BB4	0.11	IPS
FQG	11.964	#/SEC	BB5	0.21	IPS
FPRG	197.8	[illegible]	BB7	0.08	IPS
FQT	11.953	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.05	IPS
WSQ	7.742	#/SEC	CSGV	82.9	DEG
CTIM	56	DEG F	TIMR_01	43 166.2	HOURS
WQJF_PR	202	RPM	CPD	158.8	PSIG
WXC	[illegible]	[illegible]	[illegible]	637	DEG F
WQC	7.310	#/SEC	CTIF1	56	DEG F
WXC	[illegible]	RATIO	CTIF2	56	DEG F
FSR	59.9	% FSR	TTXC	990	DEG F
WSQ	7.742	#/SEC	FSR	59.9	% FSR
BB1	0.38	IPS	HPA1	91.2	% H2
BB2	[illegible]	IPS	HPA2	90.8	% H2
BB3	[illegible]	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 10:39:00	11.974	7.384	0.616	0.599	56

DATA LIST 12 11 FEB 93 10:45:01 PAGE

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	1007	DEG F	TTXD1_17	978	DEG F
TTXD1_2	950	DEG F	TTXD1_18	961	DEG F
TTXD1_3	978	DEG F	TTXC	989	DEG F
TTXD1_4	973	DEG F	TNH	100.0	% SPD
TTXD1_5	986	DEG F	TNR	103.8	% SPD
TTXD1_6	1019	DEG F	DW	80.19	MW
TTXD1_7	1024	DEG F	FDG1	30.00	INH20
TTXD1_8	1015	DEG F	FDG2	79.6	INH20
TTXD1_[illegible]	[illegible]	DEG F	[illegible]	123	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	DEG F	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	DEG F	FPG	3.30	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 10:45:07 [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	50	DEG F	BB4	0.11	IPS
FQG	11.997	#/SEC	BB5	0.21	IPS
FPRG	197.5	PSIG	BB7	0.07	IPS
FQT	11.967	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSO	8.021	#/SEC	CSGV	83.0	DEG
CTIM	56	DEG F	[illegible]	43 166.5	HOURS
[illegible]	[illegible]	[illegible]	[illegible]	158.[illegible]	PSIG
WXC	[illegible]	RATIO	CTD	[illegible]	DEG F
WQC	7.350	#/SEC	CTIF1	55	DEG F
WXC	0.616	RATIO	CTIF2	56	DEG F
FSR	59.6	% FSR	TTXC	989	DEG F
WSO	8.021	#/SEC	FSR	59.[illegible]	% FSR
BB1	[illegible]	IPS	[illegible]	[illegible]	% H2
BB2	[illegible]	[illegible]	[illegible]	[illegible]	% H2
BB3	[illegible]	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = [illegible] MINUTES

DATA LIST 12 11 FEB 93 [illegible] [illegible]

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1L1	[illegible]	DEG F	TTXD1L17	980	DEG F
TTXD1L2	951	DEG F	TTXD1L18	[illegible]	DEG F
TTXD1L3	[illegible]	DEG F	[illegible]	989	DEG F
TTXD1L4	972	DEG F	TNH	100.[illegible]	% SPD
TTXD1L5	992	DEG F	TNR	103.8	% SPD
TTXD1L6	1015	DEG F	DW	80.00	MW
TTXD1L7	1022	DEG F	FDG1	30.00	INH2O
TTXD1L8	1015	DEG F	FDG2	79.8	INH2O
TTXD1L9	1010	DEG F	LTTH1	122	DEG F
TTXD1L10	1026	DEG F	TTXSP1	126	DEG F
TTXD1L11	1005	DEG F	TTXSP1	75	DEG F
TTXD1L12	995	DEG F	TTXSP2	75	DEG F
TTXD1L13	[illegible]	DEG F	TTXSP3	64	DEG F
TTXD1L14	[illegible]	DEG F	CTDA1	[illegible]	DEG F
TTXD1L15	951	DEG F	CTDA2	630	DEG F
TTXD1L16	970	DEG F	FPG	3.30	V DC

REMOTE LINK HEALTHY

LOG PERIOD = [illegible] MINUTES

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	52	DEG F	BB4	0.11	IPS
FQG	11.[illegible]	#/SEC	BB5	0.21	IPS
FPRG	197.5	PSIG	BB7	0.08	IPS
FQT	12.003	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	8.232	#/SEC	DSGV	82.9	DEG
CTIM	56	DEG F	TIMR_01	43 166.7	HOURS
WQCF_PR	200	RPM	CPD	158.[illegible]	PSIG
WXC	0.579	RATIO	CTD	637	DEG F
WQJ	7.260	#/SEC	CTIF1	55	DEG F
WXJ	0.606	RATIO	CTIF2	56	DEG F
FSR	59.7	% FSR	TTXC	[illegible]	DEG F
WSQ	8.232	#/SEC	FSR	59.7	% FSR
BB1	0.38	IPS	HPA1	91.3	% H2
BB2	0.39	IPS	HPA2	90.8	% H2
BB3	0.27	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 11:15:01 PAGE

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	[illegible]	DEG F	TTXD1_17	[illegible]	DEG F
TTXD1_2	950	DEG F	TTXD1_18	962	DEG F
TTXD1_3	[illegible]	DEG F	TTXC	989	DEG F
TTXD1_4	974	DEG F	TNH	100.0	% SPD
TTXD1_5	990	DEG F	TNP	107.9	% SPD
TTXD1_6	[illegible]	DEG	TW	80.0	MW
TTXD1_7	[illegible]	DEG F	FDG1	30.00	[illegible]
TTXD1_8	1016	DEG F	FDG2	80.2	INH2O
TTXD1_9	1011	DEG F	LTTH1	124	DEG F
TTXD1_10	1024	DEG F	TTXSPL	126	DEG F
TTXD1_11	1004	DEG	TTXSP1	73	DEG F
TTXD1_12	[illegible]	DEG F	TTXSP2	72	DEG F
TTXD1_13	977	DEG F	TTXSP3	62	DEG F
TTXD1_14	978	DEG F	CTDA1	638	DEG F
TTXD1_15	951	DEG F	CTDA2	631	DEG F
TTXD1_16	969	DEG F	FPG	3.30	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 11:15:07 PAGE

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	52	DEG F	BB4	0.11	IPS
FQG	11.965	#/SEC	BB5	0.21	IPS
FPRG	197.7	PSIG	BB7	0.08	IPS
FQT	12.002	#/SEC	BB8	0.03	IPS
FLAME	[illegible]		BB9	0.04	IPS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DEG F
WSC	8.[illegible]	#/SEC	FSR	59.7	% FSR
BB1	0.36	IPS	HPA1	91.2	% H2
BB2	0.39	IPS	HPA2	90.9	% H2
BB3	0.27	IPS			

[illegible] LINK HEALTHY

LOG PERIOD = 0015 MINUTES

SYCAMORE UNIT-1

[illegible] ROLLING AVG

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 11:39:00	11.[illegible]	7.240	0.605	0.579	56

11 FEB 93 11:48:[illegible] [illegible] EVAPORATIVE COOLER TROUBLE

11 FEB [illegible] EVAPORATIVE COOLER TROUBLE

[illegible] ROLLING AVG

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 12:39:00	12.[illegible]	7.196	0.594	0.567	52

[illegible] ROLLING AVG

TIME	GAS FUEL #/SEC	WATER # SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 13:39:00	12.102	7.111	0.587	0.563	51

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 06:38:00	9.055	3.726	0.434	0.402	46

11 FEB 93 07:37:25.37 120 HYDROGEN PRESS LOW (SKID) ALARM

Sycamore Unit 2

Sycamore unit-2 Gas

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 07:38:00	11.700	7.897	0.673	0.652	46

DATA LIST 12 11 FEB 93 07:56:01 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	49	DEG F	WQJ	8.027	#/SEC
CTIF2	48	DEG F	WXJ	0.687	RATIO
CPD	156.3	PSIG	FSR	60.6	% FSR
CTD	635	DEG F	WSQ	9.326	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.74	V DC	BB2	0.11	IPS
LTTH1	122	DEG F	BB3	0.27	IPS
FPG	3.47	V DC	BB4	0.09	IPS
FTG	64	DEG F	BB5	0.13	IPS
FQG	11.737	#/SEC	BB7	0.06	IPS
FPRG	197.3	PSIG	BB8	0.06	IPS
FQT	11.749	#/SEC	BB9	0.07	IPS
WSQ	9.326	#/SEC	CSGV	83.4	DEG
CTIM	49	DEG F	TIMR_01	42 877.2	HOURS
WQJF_PR	221	RPM	S125N	-64.74	V DC
WXC	0.665	RATIO	TTXD1_1	1000	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0480 MINUTES

DATA LIST 12 11 FEB 93 07:56:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	976	DEG F	TTXD1_18	984	DEG F
TTXD1_3	980	DEG F	TTXC	993	DEG F
TTXD1_4	1022	DEG F	TNH	100.0	% SPD
TTXD1_5	991	DEG F	TNR	103.8	% SPD

TTXD1_9	994	DEG F	TTXSP1	122	DEG F
TTXD1_10	1024	DEG F	TTXSP2	127	DEG F
TTXD1_11	993	DEG F	TTXSP1	57	DEG F
TTXD1_12	983	DEG F	TTXSP2	4[illegible]	DEG F
TTXD1_13	965	DEG F	TTXSP3	43	DEG F
TTXD1_14	1012	DEG F	CTDA1	635	DEG F
TTXD1_15	1003	DEG F	CTDA2	631	DEG F
TTXD1_16	981	DEG F	HPA1	94.0	% H2
TTXD1_17	985	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0480 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 08:38:00	11.690	7.940	0.679	0.654	50

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 09:38:00	11.704	7.762	0.663	0.637	53

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 10:38:00	11.646	7.468	0.641	0.617	55

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 11:38:00	11.642	7.315	0.628	0.604	55

DATA LIST 12 11 FEB 93 11:40:02 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	55	DEG F	WQJ	7.320	#/SEC
CTIF2	54	DEG F	WXJ	0.627	RATIO
CPD	154.7	PSIG	FSR	60.6	% FSR
CTD	642	DEG F	WSQ	9.078	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.74	V DC	BB2	0.11	IPS
LTTH1	127	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	68	DEG F	BB5	0.13	IPS
FQG	11.653	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.06	IPS
FQT	11.671	#/SEC	BB9	0.07	IPS
WSQ	9.078	#/SEC	CSGV	83.3	DEG
CTIM	55	DEG F	TIMR_01	42 880.9	HOURS
WQJF_PR	201	RPM	S125N	-64.74	V DC
WXC	0.604	RATIO	TTXD1_1	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 11:40:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	971	DEG F	TTXD1_18	988	DEG F
TTXD1_3	983	DEG F	TTXC	995	DEG F
TTXD1_4	1026	DEG F	TNH	100.0	% SPD
TTXD1_5	994	DEG F	TNR	103.8	% SPD
TTXD1_6	993	DEG F	DW	77.56	MW
TTXD1_7	992	DEG F	FDG1	30.00	INH2O
TTXD1_8	1000	DEG F	FDG2	78.1	INH2O
TTXD1_9	992	DEG F	LTTH1	127	DEG F
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F
TTXD1_11	997	DEG F	TTXSP1	58	DEG F
TTXD1_12	987	DEG F	TTXSP2	56	DEG F
TTXD1_13	972	DEG F	TTXSP3	46	DEG F
TTXD1_14	1017	DEG F	CTDA1	642	DEG F
TTXD1_15	998	DEG F	CTDA2	636	DEG F
TTXD1_16	986	DEG F	HPA1	93.8	% H2
TTXD1_17	985	DEG F			

REMOTE LINK HEALTHY

Unit 2, Gas Begin Run #1

DATA LIST 12 DEMAND DISPLAY 11 FEB 93 11:44:38 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	974	DEG F	TTXD1_18	987	DEG F
TTXD1_3	982	DEG F	TTXC	995	DEG F
TTXD1_4	1026	DEG F	TNH	100.1	% SPD
TTXD1_5	995	DEG F	TNR	103.8	% SPD
TTXD1_6	993	DEG F	→ DW	78.19	MW
TTXD1_7	992	DEG F	FDG1	30.00	INH2O
TTXD1_8	1001	DEG F	FDG2	78.2	INH2O
TTXD1_9	994	DEG F	LTTH1	125	DEG F
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F
TTXD1_11	997	DEG F	TTXSP1	55	DEG F
TTXD1_12	987	DEG F	TTXSP2	53	DEG F
TTXD1_13	972	DEG F	TTXSP3	46	DEG F
TTXD1_14	1018	DEG F	CTDA1	642	DEG F
TTXD1_15	1001	DEG F	CTDA2	634	DEG F
TTXD1_16	986	DEG F	HPA1	93.8	% H2
TTXD1_17	988	DEG F	HPA2	92.7	% H2

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0015 MINUTES

DATA LIST 12 DEMAND DISPLAY 11 FEB 93 11:44:45 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	→ WQJ	7.290	#/SEC
CTIF2	54	DEG F	WXJ	0.629	RATIO
CPD	154.3	PSIG	FSR	60.4	% FSR
CTD	641	DEG F	WSQ	9.084	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
_LTTH1	126	DEG F	BB3	0.26	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	68	DEG F	BB5	0.12	IPS
→ FQG	11.654	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.691	#/SEC	BB9	0.07	IPS
WSQ	9.084	#/SEC	CSGV	83.4	DEG
CTIM	54	DEG F	TIMR_01	42 881.0	HOURS
WQJF_PR	202	RPM	S125N	-64.81	V DC
WXC	0.602	RATIO	TTXD1_1	1004	DEG F

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0015 MINUTES

WQJ = 7.290
FQG = 11.654
DW = 78.19
Unit 2, Gas End Run #1

DATA LIST 12 11 FEB 93 11:59:02 PAGE000

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	55	DEG F	WQJ	7.300	#/SEC
CTIF2	54	DEG F	WXJ	0.631	RATIO
CPD	153.9	PSIG	FSR	60.5	% FSR
CTD	642	DEG F	WSQ	8.892	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	125	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	66	DEG F	BB5	0.13	IPS
FQG	11.598	#/SEC	BB7	0.06	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.588	#/SEC	BB9	0.07	IPS
WSQ	8.892	#/SEC	CSGV	85.3	DEG
CTIM	55	DEG F	TIMR_01	42 881.3	HOURS
WQJF_PR	202	RPM	S125N	-64.81	V DC
WXC	0.598	RATIO	TTXD1_1	1009	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 11:59:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	979	DEG F	TTXD1_18	991	DEG F
TTXD1_3	985	DEG F	TTXC	997	DEG F
TTXD1_4	1027	DEG F	TNH	100.0	% SPD
TTXD1_5	998	DEG F	TNR	103.8	% SPD
TTXD1_6	994	DEG F	DW	77.69	MW
TTXD1_7	992	DEG F	FDG1	30.00	INH2O
TTXD1_8	1000	DEG F	FDG2	77.8	INH2O
TTXD1_9	994	DEG F	LTTH1	125	DEG F
TTXD1_10	1028	DEG F	TTXSPL	126	DEG F
TTXD1_11	997	DEG F	TTXSP1	56	DEG F
TTXD1_12	988	DEG F	TTXSP2	49	DEG F
TTXD1_13	971	DEG F	TTXSP3	43	DEG F
TTXD1_14	1015	DEG F	CTDA1	645	DEG F
TTXD1_15	999	DEG F	CTDA2	636	DEG F
TTXD1_16	987	DEG F	HPA1	93.7	% H2
TTXD1_17	988	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 12:14:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.270	#/SEC
CTIF2	54	DEG F	WXJ	0.629	RATIO
CPD	154.8	PSIG	FSR	60.4	% FSR
CTD	641	DEG F	WSQ	8.357	#/SEC
S125P	66.12	V DC	BB1	0.11	IPS
S125N	-64.66	V DC	BB2	0.11	IPS

FQG	11.613	#/SEC	BB7	0.06	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.599	#/SEC	BB9	0.07	IPS
WSQ	8.357	#/SEC	CSGV	83.4	DEG
CTIM	54	DEG F	TIMR_01	42 881.5	HOURS
WQJF_PR	200	RPM	S125N	-64.66	V DC
WXC	0.598	RATIO	TTXD1_1	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 12:14:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	975	DEG F	TTXD1_18	987	DEG F
TTXD1_3	983	DEG F	TTXC	995	DEG F
TTXD1_4	1024	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	103.8	% SPD
TTXD1_6	993	DEG F	DW	77.67	MW
TTXD1_7	991	DEG F	FDG1	30.00	INH20
TTXD1_8	1000	DEG F	FDG2	77.5	INH20
TTXD1_9	993	DEG F	LTTH1	125	DEG F
TTXD1_10	1025	DEG F	TTXSPL	126	DEG F
TTXD1_11	996	DEG F	TTXSP1	57	DEG F
TTXD1_12	986	DEG F	TTXSP2	52	DEG F
TTXD1_13	969	DEG F	TTXSP3	43	DEG F
TTXD1_14	1016	DEG F	CTDA1	641	DEG F
TTXD1_15	1003	DEG F	CTDA2	635	DEG F
TTXD1_16	986	DEG F	HPA1	93.8	% H2
TTXD1_17	987	DEG F			

.618
.606
1.629
11.618

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

Unit 2-Gas Begin Run #2

DATA LIST 12 11 FEB 93 12:29:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	56	DEG F	→WQJ	7.280	#/SEC
CTIF2	55	DEG F	WXJ	0.627	RATIO
CPD	153.8	PSIG	FSR	60.3	% FSR
CTD	644	DEG F	WSQ	8.394	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.74	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	67	DEG F	BB5	0.13	IPS
→FQG	11.649	#/SEC	BB7	0.06	IPS
FPRG	197.6	PSIG	BB8	0.05	IPS
FQT	11.622	#/SEC	BB9	0.07	IPS
WSQ	8.394	#/SEC	CSGV	83.4	DEG
CTIM	56	DEG F	TIMR_01	42 881.8	HOURS
WQJF_PR	202	RPM	S125N	-64.74	V DC
WXC	0.606	RATIO	TTXD1_1	1007	DEG F

DATA LIST 12 11 FEB 93 12:29:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	975	DEG F	TTXD1_18	987	DEG F
TTXD1_3	987	DEG F	TTXC	998	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	1000	DEG F	TNR	103.8	% SPD
TTXD1_6	998	DEG F	→ DW	77.50	MW
TTXD1_7	995	DEG F	FDG1	30.00	INH20
TTXD1_8	1004	DEG F	FDG2	77.5	INH20
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1030	DEG F	TTXSPL	126	DEG F
TTXD1_11	1001	DEG F	TTXSP1	57	DEG F
TTXD1_12	990	DEG F	TTXSP2	56	DEG F
TTXD1_13	973	DEG F	TTXSP3	45	DEG F
TTXD1_14	1020	DEG F	CTDA1	644	DEG F
TTXD1_15	1001	DEG F	CTDA2	637	DEG F
TTXD1_16	989	DEG F	HFA1	93.8	% H2
TTXD1_17	989	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 12:38:00	11.649	7.289	0.626	0.603	55

DATA LIST 12 11 FEB 93 12:44:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	55	DEG F	→ WQJ	7.280	#/SEC
CTIF2	55	DEG F	WXJ	0.629	RATIO
CPD	154.2	PSIG	FSR	60.1	% FSR
CTD	645	DEG F	WSQ	8.425	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.88	V DC	BB2	0.11	IPS
LTTH1	125	DEG F	BB3	0.27	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	66	DEG F	BB5	0.12	IPS
→ FQG	11.606	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.603	#/SEC	BB9	0.07	IPS
WSQ	8.425	#/SEC	CSGV	83.4	DEG
CTIM	55	DEG F	TIMR_01	42 882.0	HOURS
WQJF_FR	200	RPM	S125N	-64.88	V DC

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 12:44:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	970	DEG F	TTXD1_18	982	DEG F
TTXD1_3	985	DEG F	TTXC	996	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	998	DEG F	TNR	103.8	% SPD
TTXD1_6	999	DEG F	→ DW	77.50	MW
TTXD1_7	996	DEG F	FDG1	30.00	INH20
TTXD1_8	1001	DEG F	FDG2	77.1	INH20
TTXD1_9	995	DEG F	LTTH1	125	DEG F
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F
TTXD1_11	1000	DEG F	TTXSP1	61	DEG F
TTXD1_12	988	DEG F	TTXSP2	55	DEG F
TTXD1_13	974	DEG F	TTXSP3	49	DEG F
TTXD1_14	1018	DEG F	CTDA1	645	DEG F
TTXD1_15	997	DEG F	CTDA2	636	DEG F
TTXD1_16	984	DEG F	HFA1	93.8	% H2
TTXD1_17	985	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 12:59:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	55	DEG F	→ WGJ	7.350	#/SEC
CTIF2	56	DEG F	WXJ	0.628	RATIO
CPD	153.8	PSIG	FSR	60.0	% FSR
CTD	645	DEG F	WSQ	8.990	#/SEC
S125P	65.90	V DC	BB1	0.11	IPS
S125N	-64.88	V DC	BB2	0.11	IPS
LTTH1	123	DEG F	BB3	0.27	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	66	DEG F	BB5	0.12	IPS
→ FQG	11.629	#/SEC	BB7	0.06	IPS
FPRG	197.3	PSIG	BB8	0.05	IPS
FQT	11.644	#/SEC	BB9	0.07	IPS
WSQ	8.990	#/SEC	CSGV	65.4	DEG
CTIM	56	DEG F	TIMR_01	42 882.3	HOURS
WQJF_PR	202	RPM	S125N	-64.88	V DC
WXC	0.610	RATIO	TTXD1_1	1007	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	971	DEG F	TTXD1_18	986	DEG F

TTXD1_6	999	DEG F	DW	77.25	MW
TTXD1_7	996	DEG F	FDG1	30.00	INH20
TTXD1_8	1000	DEG F	FDG2	77.9	INH20
TTXD1_9	994	DEG F	LTTH1	125	DEG F
TTXD1_10	1031	DEG F	TTXSPL	126	DEG F
TTXD1_11	1000	DEG F	TTXSP1	59	DEG F
TTXD1_12	986	DEG F	TTXSP2	57	DEG F
TTXD1_13	972	DEG F	TTXSP3	45	DEG F
TTXD1_14	1021	DEG F	CTDA1	645	DEG F
TTXD1_15	1002	DEG F	CTDA2	635	DEG F
TTXD1_16	986	DEG F	HPA1	93.8	% H2
TTXD1_17	987	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 13:14:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	7.539	#/SEC
CTIF2	53	DEG F	WXJ	0.644	RATIO
CPD	155.0	PSIG	FSR	60.8	% FSR
CTD	640	DEG F	WSQ	9.905	#/SEC
S125P	65.90	V DC	BB1	0.11	IPS
S125N	-64.95	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.26	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	65	DEG F	BB5	0.13	IPS
FQG	11.707	#/SEC	BB7	0.06	IPS
FPRG	197.3	PSIG	BB8	0.05	IPS
FQT	11.729	#/SEC	BB9	0.07	IPS
WSQ	9.905	#/SEC	CSGV	83.4	DEG
CTIM	53	DEG F	TIMR_01	42 882.5	HOURS
WQJF_PR	209	RPM	S125N	-64.95	V DC
WXC	0.611	RATIO	TTXD1_1	1002	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 13:14:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	972	DEG F	TTXD1_18	985	DEG F
TTXD1_3	981	DEG F	TTXC	996	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	1001	DEG F	TNR	103.8	% SPD
TTXD1_6	997	DEG F	DW	78.25	MW
TTXD1_7	996	DEG F	FDG1	30.00	INH20
TTXD1_8	1001	DEG F	FDG2	78.6	INH20
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1029	DEG F	TTXSPL	127	DEG F
TTXD1_11	998	DEG F	TTXSP1	57	DEG F
TTXD1_12	987	DEG F	TTXSP2	53	DEG F
TTXD1_13	[illegible]	[illegible]	[illegible]	47	[illegible]

TTXD1_16	987	DEG F	HPA1	93.3	% M2
TTXD1_17	987	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 11.648
WQJ = 7.357
DW = 77.63

Unit 2-Gas End Run #2

DATA LIST 12 — 11 FEB 93 13:29:01 — PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.419	#/SEC
CTIF2	54	DEG F	WXJ	0.630	RATIO
CPD	154.7	PSIG	FSR	60.5	% FSR
CTD	642	DEG F	WSQ	8.004	#/SEC
S125P	63.97	V DC	BB1	0.11	IPS
S125N	-64.88	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	66	DEG F	BB5	0.13	IPS
FQG	11.732	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.719	#/SEC	BB9	0.07	IPS
WSQ	8.004	#/SEC	CSGV	33.4	DEG
CTIM	54	DEG F	TIMR_01	42 882.8	HOURS
WQJF_PR	204	RPM	S125N	-64.88	V DC
WXC	0.614	RATIO	TTXD1_1	1004	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	977	DEG F	TTXD1_18	986	DEG F
TTXD1_3	984	DEG F	TTXC	996	DEG F
TTXD1_4	1024	DEG F	TNH	100.1	% SPD
TTXD1_5	997	DEG F	TNR	103.8	% SPD
TTXD1_6	994	DEG F	DW	78.25	MW
TTXD1_7	994	DEG F	FDG1	30.00	INH20
TTXD1_8	1001	DEG F	FDG2	78.6	INH20
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F
TTXD1_11	997	DEG F	TTXSP1	57	DEG F
TTXD1_12	986	DEG F	TTXSP2	52	DEG F
TTXD1_13	972	DEG F	TTXSP3	45	DEG F
TTXD1_14	1017	DEG F	CTDA1	642	DEG F
TTXD1_15	1004	DEG F	CTDA2	635	DEG F
TTXD1_16	987	DEG F	HPA1	93.3	% M2
TTXD1_17	988	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 13:38:00	11.671	7.383	0.633	0.610	54

Unit 2 - Gas Begin Run #3

DATA LIST 12 11 FEB 93 13:44:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.429	#/SEC
CTIF2	54	DEG F	WXJ	0.636	RATIO
CPD	154.3	PSIG	FSR	60.4	% FSR
CTD	641	DEG F	WSQ	8.115	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	125	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	68	DEG F	BB5	0.12	IPS
FQG	11.652	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.673	#/SEC	BB9	0.07	IPS
WSQ	8.115	#/SEC	CSGV	83.4	DEG
CTIM	54	DEG F	TIMR_01	42 883.0	HOURS
WQJF_PR	204	RPM	S125N	-64.81	V DC
WXC	0.608	RATIO	TTXD1_1	1004	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	973	DEG F	TTXD1_18	984	DEG F
TTXD1_3	983	DEG F	TTXC	995	DEG F
TTXD1_4	1024	DEG F	TNH	100.1	% SPD
TTXD1_5	996	DEG F	TNR	103.8	% SPD
TTXD1_6	995	DEG F	DW	78.12	MW
TTXD1_7	992	DEG F	FDG1	30.00	INH2O
TTXD1_8	1000	DEG F	FDG2	78.5	INH2O
TTXD1_9	994	DEG F	LTTH1	125	DEG F
TTXD1_10	1026	DEG F	TTXSFL	126	DEG F
TTXD1_11	996	DEG F	TTXSP1	56	DEG F
TTXD1_12	985	DEG F	TTXSP2	53	DEG F
TTXD1_13	969	DEG F	TTXSP3	45	DEG F
TTXD1_14	1018	DEG F	CTDA1	641	DEG F
TTXD1_15	999	DEG F	CTDA2	635	DEG F
TTXD1_16	987	DEG F	HFA1	93.3	% H2
TTXD1_17	986	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 13:59:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	→ WQJ	7.409	#/SEC
CTIF2	54	DEG F	WXJ	0.632	RATIO
CPD	154.6	PSIG	FSR	60.5	% FSR
CTD	642	DEG F	WSQ	8.295	#/SEC
S125P	65.90	V DC	BB1	0.11	IPS
S125N	-64.95	V DC	BB2	0.11	IPS
LTTH1	125	DEG F	BB3	0.24	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	68	DEG F	BB5	0.13	IPS
→ FQG	11.662	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.662	#/SEC	BB9	0.07	IPS
WSQ	8.295	#/SEC	CSGV	83.4	DEG
CTIM	54	DEG F	TIMR_01	42 883.3	HOURS
WQJF_PR	204	RPM	S125N	-64.95	V DC
WXC	0.617	RATIO	TTXD1_1	1003	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 13:59:16 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	976	DEG F	TTXD1_18	986	DEG F
TTXD1_3	981	DEG F	TTXC	996	DEG F
TTXD1_4	1026	DEG F	TNH	100.1	% SPD
TTXD1_5	997	DEG F	TNR	103.8	% SPD
TTXD1_6	995	DEG F	→ DW	78.12	MW
TTXD1_7	993	DEG F	FDG1	30.00	INH2O
TTXD1_8	1002	DEG F	FDG2	78.3	INH2O
TTXD1_9	996	DEG F	LTTH1	125	DEG F
TTXD1_10	1028	DEG F	TTXSPL	126	DEG F
TTXD1_11	998	DEG F	TTXSP1	55	DEG F
TTXD1_12	988	DEG F	TTXSP2	55	DEG F
TTXD1_13	973	DEG F	TTXSP3	48	DEG F
TTXD1_14	1015	DEG F	CTDA1	642	DEG F
TTXD1_15	1002	DEG F	CTDA2	634	DEG F
TTXD1_16	987	DEG F	HPA1	93.8	% H2
TTXD1_17	988	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 14:14:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	→ WQJ	7.748	#/SEC

S125P	65.77	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.26	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	67	DEG F	BB5	0.13	IPS
→ FQG	11.716	#/SEC	BB7	0.06	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.721	#/SEC	BB9	0.07	IPS
WSQ	10.369	#/SEC	CSGV	83.4	DEG
CTIM	53	DEG F	TIMR_01	42 883.5	HOURS
WQJF_PR	212	RPM	S125N	-64.81	V DC
WXC	0.622	RATIO	TTXD1_1	1003	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 14:14:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	975	DEG F	TTXD1_18	986	DEG F
TTXD1_3	981	DEG F	TTXC	995	DEG F
TTXD1_4	1023	DEG F	TNH	100.0	% SPD
TTXD1_5	995	DEG F	TNR	103.8	% SPD
TTXD1_6	992	DEG F	→ DW	78.19	MW
TTXD1_7	992	DEG F	FDG1	30.00	INH2O
TTXD1_8	998	DEG F	FDG2	29.0	INH2O
TTXD1_9	995	DEG F	LTTH1	124	DEG F
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F
TTXD1_11	996	DEG F	TTXSP1	57	DEG F
TTXD1_12	985	DEG F	TTXSP2	52	DEG F
TTXD1_13	970	DEG F	TTXSP3	46	DEG F
TTXD1_14	1019	DEG F	CTDA1	641	DEG F
TTXD1_15	1006	DEG F	CTDA2	632	DEG F
TTXD1_16	988	DEG F	HPA1	93.8	% HZ
TTXD1_17	987	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 11.677
WQJ = 7.529
DW = 78.14

Unit 2 - Gas End Run #3

DATA LIST 12 11 FEB 93 14:29:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.668	#/SEC
CTIF2	54	DEG F	WXJ	0.650	RATIO
CPD	154.8	PSIG	FSR	60.8	% FSR
CTD	640	DEG F	WSQ	9.847	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	65	DEG F	BB5	0.12	IPS
FQG	11.781	#/SEC	BB7	0.06	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.801	#/SEC	BB9	0.07	IPS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	V DC
WXC	0.629	RATIO	TTXD1_1	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 14:29:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	974	DEG F	TTXD1_13	985	DEG F
TTXD1_3	985	DEG F	TTXC	996	DEG F
TTXD1_4	1025	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	103.8	% SPD
TTXD1_6	997	DEG F	DW	78.19	MW
TTXD1_7	993	DEG F	FDG1	30.00	INH2O
TTXD1_8	1001	DEG F	FDG2	79.6	INH2O
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1028	DEG F	TTXSPL	127	DEG F
TTXD1_11	997	DEG F	TTXSP1	57	DEG F
TTXD1_12	987	DEG F	TTXSP2	52	DEG F
TTXD1_13	970	DEG F	TTXSP3	42	DEG F
TTXD1_14	1018	DEG F	CTDA1	640	DEG F
TTXD1_15	1002	DEG F	CTDA2	633	DEG F
TTXD1_16	986	DEG F	HPA1	93.7	% H2
TTXD1_17	988	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 14:38:00	11.699	7.509	0.642	0.619	53

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.648	#/SEC
CTIF2	54	DEG F	WXJ	0.650	RATIO
CPD	153.7	PSIG	FSR	60.9	% FSR
CTD	641	DEG F	WSQ	9.942	#/SEC
S125P	65.83	V DC	BB1	0.11	IPS
S125N	-64.74	V DC	BB2	0.11	IPS
LTTH1	123	DEG F	BB3	0.24	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	62	DEG F	BB5	0.13	IPS
FQG	11.831	#/SEC	BB7	0.06	IPS

CTIM	54	DEG F	TIMR_01	42 884.0	HOURS
WQJF_PR	211	RPM	S125N	-64.74	V DC
WXC	0.630	RATIO	TTXD1_1	1007	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 14:44:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	974	DEG F	TTXD1_18	986	DEG F
TTXD1_3	985	DEG F	TTXC	997	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	999	DEG F	TNR	103.9	% SPD
TTXD1_6	996	DEG F	DW	77.75	MW
TTXD1_7	993	DEG F	FDG1	30.00	INH2O
TTXD1_8	1001	DEG F	FDG2	79.3	INH2O
TTXD1_9	995	DEG F	LTTH1	123	DEG F
TTXD1_10	1029	DEG F	TTXSPL	127	DEG F
TTXD1_11	999	DEG F	TTXSP1	57	DEG F
TTXD1_12	987	DEG F	TTXSP2	55	DEG F
TTXD1_13	971	DEG F	TTXSP3	44	DEG F
TTXD1_14	1019	DEG F	CTDA1	640	DEG F
TTXD1_15	1003	DEG F	CTDA2	633	DEG F
TTXD1_16	989	DEG F	HFA1	93.7	% HZ
TTXD1_17	988	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 14:59:01 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	54	DEG F	WQJ	7.817	#/SEC
CTIF2	55	DEG F	WXJ	0.661	RATIO
CPD	154.7	PSIG	FSR	60.8	% FSR
CTD	642	DEG F	WSQ	8.817	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	62	DEG F	BB5	0.13	IPS
FQG	11.841	#/SEC	BB7	0.06	IPS
FPRG	177.6	PSIG	BB8	0.05	IPS
FQT	11.818	#/SEC	BB9	0.07	IPS
WSQ	8.817	#/SEC	CSGV	83.3	DEG
CTIM	55	DEG F	TIMR_01	42 884.3	HOURS
WQJF_PR	216	RPM	S125N	-64.61	V DC
WXC	0.633	RATIO	TTXD1_1	1008	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	976	DEG F	TTXD1_18	986	DEG F
TTXD1_3	986	DEG F	TTXC	996	DEG F
TTXD1_4	1026	DEG F	TNM	100.0	% SPD
TTXD1_5	996	DEG F	TNR	103.9	% SPD
TTXD1_6	995	DEG F	DW	77.94	MW
TTXD1_7	993	DEG F	FDG1	30.00	INH2O
TTXD1_8	1001	DEG F	FDG2	79.4	INH2O
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1028	DEG F	TTXSFL	127	DEG F
TTXD1_11	997	DEG F	TTXSP1	55	DEG F
TTXD1_12	988	DEG F	TTXSP2	52	DEG F
TTXD1_13	972	DEG F	TTXSP3	43	DEG F
TTXD1_14	1017	DEG F	CTDA1	642	DEG F
TTXD1_15	1001	DEG F	CTDA2	635	DEG F
TTXD1_16	986	DEG F	HPA1	93.7	% H2
TTXD1_17	987	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 15:38:00	11.802	7.680	0.650	0.628	55

11 FEB 93 15:46:10.50 078 EVAPORATIVE COOLER TROUBLE ALARM
11 FEB 93 15:46:10.62 078 EVAPORATIVE COOLER TROUBLE NORMAL

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 16:38:00	11.885	7.665	0.645	0.620	52

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL	WATER	ACTUAL	REQUIRED	AMBIENT

TA LIST 12 DEMAND DISPLAY 12 FEB 93 09:06:43 PAGE 01

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	57	DEG F	BB4	0.07	IPS
FQG	10.882	#/SEC	BB5	0.10	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	10.878	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.05	IPS
WSQ	7.081	#/SEC	CSGV	82.8	DEG
CTIM	47	DEG F	TIMR_01	42 652.9	HOURS
WQJF_PR	215	RPM	S125N	-75.38	V DC
WXC	0.687	RATIO	S125P	54.02	V DC
WQJ	7.778	#/SEC	HPA1	95.7	% H2
WXJ	0.713	RATIO	HPA2	94.4	% H2
FSR	61.7	% FSR	CPD	158.6	PSIG
WSQ	7.081	#/SEC	CTD	624	DEG F
BB1	0.05	IPS	CTIF1	46	DEG F
BB2	0.05	IPS	CTIF2	47	DEG F
BB3	0.19	IPS			

INCREASE PERIOD

DECREASE PERIOD

SET LOG ON/OFF

SET TIME ON/OFF

G PERIOD = 0015 MINUTES

Sycamore Unit-3

TA LIST 12 DEMAND DISPLAY 12 FEB 93 09:06:52 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	57	DEG F	BB4	0.07	IPS
FQG	10.875	#/SEC	BB5	0.10	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	10.872	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.05	IPS
WSQ	7.081	#/SEC	CSGV	82.7	DEG
CTIM	47	DEG F	TIMR_01	42 652.9	HOURS
WQJF_PR	213	RPM	S125N	-75.45	V DC
WXC	0.688	RATIO	S125P	54.09	V DC
▶WQJ	7.738	#/SEC	HPA1	95.7	% H2
WXJ	0.717	RATIO	HPA2	94.4	% H2
FSR	61.9	% FSR	CPD	158.6	PSIG
WSQ	7.081	#/SEC	CTD	624	DEG F
BB1	0.05	IPS	CTIF1	47	DEG F
BB2	0.05	IPS	CTIF2	47	DEG F
BB3	0.19	IPS			

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

G PERIOD = 0015 MINUTES

Unit 3 – Gas Begin Run #1

TA LIST 12 DEMAND DISPLAY 12 FEB 93 09:07:10 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS

FPRG	197.5	PSIG	BB7	0.03	IPS	
FQT	10.887	#/SEC	BB8	0.03	IPS	
FLAME	#3#4#7#8		BB9	0.05	IPS	INSERT
WSQ	7.050	#/SEC	CSGV	82.9	DEG	ENTRY
CTIM	47	DEG F	TIMR_01	42 652.9	HOURS	
WQJF_PR	215	RPM	S125N	-75.23	V DC	
XC	0.689	RATIO	S125P	54.24	V DC	DELETE
WQJ	7.787	#/SEC	HPA1	95.6	% H2	ENTRY
WXJ	0.712	RATIO	HPA2	94.4	% H2	
FSR	61.7	% FSR	CPD	158.5	PSIG	
WSQ	7.050	#/SEC	CTD	625	DEG F	SET LOG
BB1	0.05	IPS	CTIF1	47	DEG F	ON/OFF
BB2	0.06	IPS	CTIF2	47	DEG F	
BB3	0.18	IPS				
						SET TIME
						ON/OFF

G PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 09:21:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	992	DEG F	TTXD1_17	982	DEG F
TTXD1_2	950	DEG F	TTXD1_18	948	DEG F
TTXD1_3	1008	DEG F	TTXC	989	DEG F
TTXD1_4	1034	DEG F	TNH	100.0	% SPD
TTXD1_5	992	DEG F	TNR	104.0	% SPD
TTXD1_6	1023	DEG F	DW	82.86	MW
TTXD1_7	1015	DEG F	FDG1	30.00	INH20
TTXD1_8	992	DEG F	FDG2	67.1	INH20
TTXD1_9	1017	DEG F	LTTH1	121	DEG F
TTXD1_10	999	DEG F	TTXSPL	127	DEG F
TTXD1_11	984	DEG F	TTXSP1	83	DEG F
TTXD1_12	1007	DEG F	TTXSP2	81	DEG F
TTXD1_13	961	DEG F	TTXSP3	78	DEG F
TTXD1_14	983	DEG F	CTDA1	624	DEG F
TTXD1_15	955	DEG F	CTDA2	619	DEG F
TTXD1_16	962	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	57	DEG F	BB4	0.07	IPS
FQG	10.848	#/SEC	BB5	0.10	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	10.857	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.05	IPS
WSQ	6.924	#/SEC	CSGV	82.8	DEG
CTIM	47	DEG F	TIMR_01	42 653.1	HOURS
WQJF_PR	206	RPM	S125N	-75.38	V DC
WXC	0.680	RATIO	S125P	54.16	V DC
WQJ	7.479	#/SEC	HPA1	95.7	% H2

BB1	0.05	IPS	CTIF1	47	DEG F
BB2	0.05	IPS	CTIF2	47	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
12 FEB 93 09:34:00	10.876	7.813	0.719	0.690	47

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	995	DEG F	TTXD1_17	983	DEG F
TTXD1_2	951	DEG F	TTXD1_18	951	DEG F
TTXD1_3	1010	DEG F	TTXC	990	DEG F
TTXD1_4	1031	DEG F	TNH	100.0	% SPD
TTXD1_5	993	DEG F	TNR	104.0	% SPD
TTXD1_6	1025	DEG F	DW	82.86	MW
TTXD1_7	1017	DEG F	FDG1	30.00	INH20
TTXD1_8	995	DEG F	FDG2	67.6	INH20
TTXD1_9	1016	DEG F	LTTH1	122	DEG F
TTXD1_10	1001	DEG F	TTXSPL	127	DEG F
TTXD1_11	982	DEG F	TTXSP1	80	DEG F
TTXD1_12	1009	DEG F	TTXSP2	78	DEG F
TTXD1_13	962	DEG F	TTXSP3	75	DEG F
TTXD1_14	983	DEG F	CTDA1	626	DEG F
TTXD1_15	954	DEG F	CTDA2	621	DEG F
TTXD1_16	962	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 09:36:08 PAGE001

7.628 WQJ

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	58	DEG F	BB4	0.07	IPS
FQG	10.881	#/SEC	BB5	0.10	IPS
FPRG	197.3	PSIG	BB7	0.03	IPS
FQT	10.894	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.05	IPS
WSQ	6.940	#/SEC	CSGV	82.6	DEG
CTIM	47	DEG F	TIMR_01	42 653.4	HOURS
WQJF_PR	211	RPM	S125N	-75.31	V DC
[illegible]	[illegible]	[illegible]	[illegible]	54.14	V DC

WSQ	6.940	#/SEC	CTD	626	DEG F
BB1	0.05	IPS	CTIF1	47	DEG F
BB2	0.06	IPS	CTIF2	47	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 09:51:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	992	DEG F	TTXD1_17	983	DEG F
TTXD1_2	950	DEG F	TTXD1_18	952	DEG F
TTXD1_3	1009	DEG F	TTXC	989	DEG F
TTXD1_4	1032	DEG F	TNH	100.0	% SPD
TTXD1_5	993	DEG F	TNR	104.0	% SPD
TTXD1_6	1023	DEG F	DW	82.68	MW
TTXD1_7	1013	DEG F	FDG1	30.00	INH20
TTXD1_8	993	DEG F	FDG2	66.9	INH20
TTXD1_9	1018	DEG F	LTTH1	122	DEG F
TTXD1_10	999	DEG F	TTXSPL	127	DEG F
TTXD1_11	984	DEG F	TTXSP1	82	DEG F
TTXD1_12	1008	DEG F	TTXSP2	80	DEG F
TTXD1_13	962	DEG F	TTXSP3	77	DEG F
TTXD1_14	985	DEG F	CTDA1	625	DEG F
TTXD1_15	955	DEG F	CTDA2	621	DEG F
TTXD1_16	963	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 09:51:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	58	DEG F	BB4	0.07	IPS
FQG	10.838	#/SEC	BB5	0.09	IPS
FPRG	197.5	PSIG	BB7	0.02	IPS
FQT	10.818	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	7.456	#/SEC	CSGV	82.6	DEG
CTIM	48	DEG F	TIMR_01	42 653.6	HOURS
WQJF_PR	213	RPM	S125N	-74.80	V DC
WXC	0.665	RATIO	S125P	54.68	V DC
WQJ	7.708	#/SEC	HPA1	95.7	% H2
WXJ	0.711	RATIO	HPA2	94.4	% H2
FSR	61.7	% FSR	CPD	158.5	PSIG
WSQ	7.456	#/SEC	CTD	625	DEG F
BB1	0.05	IPS	CTIF1	48	DEG F
BB2	0.05	IPS	CTIF2	48	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

WQJ = 7.651
Unit # 3-Gas End Run #1 DW = 82.80

DATA LIST 12 12 FEB 93 10:06:02 PAGE000

DEMAND DISPLAY

Unit 3-Gas Begin Run #2

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	993	DEG F	TTXD1_17	984	DEG F
TTXD1_2	950	DEG F	TTXD1_18	952	DEG F
TTXD1_3	1010	DEG F	TTXC	990	DEG F
TTXD1_4	1030	DEG F	TNH	100.0	% SPD
TTXD1_5	993	DEG F	TNR	104.0	% SPD
TTXD1_6	1025	DEG F	→ DW	82.12	MW
TTXD1_7	1017	DEG F	FDG1	30.00	INH20
TTXD1_8	995	DEG F	FDG2	66.9	INH20
TTXD1_9	1014	DEG F	LTTH1	122	DEG F
TTXD1_10	1004	DEG F	TTXSPL	127	DEG F
TTXD1_11	985	DEG F	TTXSP1	79	DEG F
TTXD1_12	1007	DEG F	TTXSP2	78	DEG F
TTXD1_13	962	DEG F	TTXSP3	77	DEG F
TTXD1_14	986	DEG F	CTDA1	627	DEG F
TTXD1_15	953	DEG F	CTDA2	622	DEG F
TTXD1_16	963	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:06:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	58	DEG F	BB4	0.07	IPS
→ FQG	10.825	#/SEC	BB5	0.09	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	10.829	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	7.487	#/SEC	CSGV	82.6	DEG
CTIM	49	DEG F	TIMR_01	42 653.9	HOURS
WQJF_PR	207	RPM	S125N	-74.29	V DC
WXC	0.665	RATIO	S125P	55.11	V DC
→ WQJ	7.449	#/SEC	HPA1	95.7	% H2
WXJ	0.692	RATIO	HPA2	94.5	% H2
FSR	61.3	% FSR	CPD	157.8	PSIG
WSQ	7.487	#/SEC	CTD	627	DEG F
BB1	0.05	IPS	CTIF1	49	DEG F
BB2	0.05	IPS	CTIF2	49	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:21:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS

TTXD1_3	1011	DEG F	[illegible]	[illegible]	DEG F
TTXD1_4	1029	DEG F	TNH	100.0	% SPD
TTXD1_5	993	DEG F	TNR	104.0	% SPD
TTXD1_6	1024	DEG F	→DW	81.74	MW
TTXD1_7	1018	DEG F	FDG1	30.00	INH20
TTXD1_8	996	DEG F	FDG2	66.6	INH20
TTXD1_9	1018	DEG F	LTTH1	123	DEG F
TTXD1_10	1004	DEG F	TTXSPL	127	DEG F
TTXD1_11	984	DEG F	TTXSP1	78	DEG F
TTXD1_12	1007	DEG F	TTXSP2	77	DEG F
TTXD1_13	962	DEG F	TTXSP3	74	DEG F
TTXD1_14	987	DEG F	CTDA1	629	DEG F
TTXD1_15	955	DEG F	CTDA2	624	DEG F
TTXD1_16	963	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:21:07 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	58	DEG F	BB4	0.07	IPS
→FQG	10.799	#/SEC	BB5	0.10	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	10.783	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	6.675	#/SEC	CSGV	82.7	DEG
CTIM	50	DEG F	TIMR_01	42 654.1	HOURS
WQJF_PR	201	RPM	S125N	-73.85	V DC
WXC	0.655	RATIO	S125P	55.55	V DC
→WQJ	7.270	#/SEC	HPA1	95.6	% H2
WXJ	0.674	RATIO	HPA2	94.4	% H2
FSR	61.5	% FSR	CPD	157.6	PSIG
WSQ	6.675	#/SEC	CTD	629	DEG F
BB1	0.06	IPS	CTIF1	50	DEG F
BB2	0.06	IPS	CTIF2	49	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
12 FEB 93 10:34:00	10.833	7.469	0.690	0.665	48

DATA LIST 12 12 FEB 93 10:36:01 PAGE000

DEMAND DISPLAY

TTXD1_2	951	DEG F	TTXD1_18	954	DEG F
TTXD1_3	1012	DEG F	TTXC	991	DEG F
TTXD1_4	1029	DEG F	TNH	100.1	% SPD
TTXD1_5	994	DEG F	TNR	104.0	% SPD
TTXD1_6	1026	DEG F	→ DW	81.86	MW
TTXD1_7	1016	DEG F	FDG1	30.00	INH20
TTXD1_8	998	DEG F	FDG2	66.4	INH20
TTXD1_9	1016	DEG F	LTTH1	122	DEG F
TTXD1_10	1005	DEG F	TTXSPL	127	DEG F
TTXD1_11	985	DEG F	TTXSP1	81	DEG F
TTXD1_12	1008	DEG F	TTXSP2	77	DEG F
TTXD1_13	963	DEG F	TTXSP3	76	DEG F
TTXD1_14	985	DEG F	CTDA1	629	DEG F
TTXD1_15	954	DEG F	CTDA2	624	DEG F
TTXD1_16	963	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:36:07 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	58	DEG F	BB4	0.07	IPS
→ FQG	10.774	#/SEC	BB5	0.10	IPS
FPRG	197.5	PSIG	BB7	0.02	IPS
FQT	10.776	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	6.931	#/SEC	CSGV	82.7	DEG
CTIM	49	DEG F	TIMR_01	42 654.4	HOURS
WQJF_PR	202	RPM	S125N	-73.99	V DC
WXC	0.661	RATIO	S125P	55.48	V DC
→ WQJ	7.320	#/SEC	HPA1	95.6	% H2
WXJ	0.679	RATIO	HPA2	94.4	% H2
FSR	61.2	% FSR	CPD	157.2	PSIG
WSQ	6.931	#/SEC	CTD	629	DEG F
BB1	0.05	IPS	CTIF1	49	DEG F
BB2	0.05	IPS	CTIF2	49	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:51:02 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	994	DEG F	TTXD1_17	986	DEG F
TTXD1_2	951	DEG F	TTXD1_18	952	DEG F
TTXD1_3	1011	DEG F	TTXC	992	DEG F
TTXD1_4	1029	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	104.0	% SPD
TTXD1_6	1027	DEG F	→ DW	81.30	MW
TTXD1_7	1013	DEG F	FDG1	30.00	INH20
TTXD1_8	1000	DEG F	FDG2	66.0	INH20

TTXD1_12	1006	DEG F	TTXSP2	78	DEG F
TTXD1_13	964	DEG F	TTXSP3	73	DEG F
TTXD1_14	990	DEG F	CTDA1	630	DEG F
TTXD1_15	956	DEG F	CTDA2	625	DEG F
TTXD1_16	967	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 10:51:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	59	DEG F	BB4	0.07	IPS
→ FQG	10.756	#/SEC	BB5	0.10	IPS
FPRG	197.6	PSIG	BB7	0.03	IPS
FQT	10.730	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	6.893	#/SEC	CSGV	82.7	DEG
CTIM	50	DEG F	TIMR_01	42 654.6	HOURS
WQJF_PR	202	RPM	S125N	-73.92	V DC
WXC	0.657	RATIO	S125P	55.48	V DC
→ WQJ	7.320	#/SEC	HPA1	95.6	% H2
WXJ	0.683	RATIO	HPA2	94.4	% H2
FSR	61.2	% FSR	CPD	157.0	PSIG
WSQ	6.893	#/SEC	CTD	630	DEG F
BB1	0.05	IPS	CTIF1	50	DEG F
BB2	0.06	IPS	CTIF2	50	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 10.789
WQJ = 7.340
DW = 81.76

Unit 3 - Gas End Run#2

DATA LIST 12 12 FEB 93 11:15:01 PAGE000 Unit 3

DEMAND DISPLAY

Begin Run#3

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	993	DEG F	TTXD1_17	984	DEG F
TTXD1_2	950	DEG F	TTXD1_18	953	DEG F
TTXD1_3	1008	DEG F	TTXC	992	DEG F
TTXD1_4	1029	DEG F	TNH	100.0	% SPD
TTXD1_5	999	DEG F	TNR	104.0	% SPD
TTXD1_6	1027	DEG F	→ DW	80.74	MW
TTXD1_7	1017	DEG F	FDG1	30.00	INH20
TTXD1_8	998	DEG F	FDG2	66.7	INH20
TTXD1_9	1016	DEG F	LTTH1	124	DEG F
TTXD1_10	1006	DEG F	TTXSPL	127	DEG F
TTXD1_11	986	DEG F	TTXSP1	80	DEG F
TTXD1_12	1005	DEG F	TTXSP2	77	DEG F
TTXD1_13	962	DEG F	TTXSP3	77	DEG F
TTXD1_14	989	DEG F	CTDA1	631	DEG F
TTXD1_15	955	DEG F	CTDA2	626	DEG F
TTXD1_16	967	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	59	DEG F	BB4	0.07	IPS
→ FQG	10.803	#/SEC	BB5	0.10	IPS
FPRG	197.5	PSIG	BB7	0.02	IPS
FQT	10.782	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	7.362	#/SEC	CSGV	82.6	DEG
CTIM	52	DEG F	TIMR_01	42 655.0	HOURS
WQJF_PR	204	RPM	S125N	-73.92	V DC
WXC	0.660	RATIO	S125P	55.55	V DC
→ WQJ	7.350	#/SEC	HPA1	95.6	% H2
WXJ	0.686	RATIO	HPA2	94.5	% H2
FSR	61.6	% FSR	CPD	156.6	PSIG
WSQ	7.362	#/SEC	CTD	631	DEG F
BB1	0.05	IPS	CTIF1	52	DEG F
BB2	0.05	IPS	CTIF2	51	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 11:30:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	995	DEG F	TTXD1_17	988	DEG F
TTXD1_2	951	DEG F	TTXD1_18	955	DEG F
TTXD1_3	1008	DEG F	TTXC	993	DEG F
TTXD1_4	1030	DEG F	TNH	100.0	% SPD
TTXD1_5	1002	DEG F	TNR	104.0	% SPD
TTXD1_6	1029	DEG F	→ DW	80.80	MW
TTXD1_7	1018	DEG F	FDG1	30.00	INH20
TTXD1_8	999	DEG F	FDG2	66.5	INH20
TTXD1_9	1017	DEG F	LTTH1	125	DEG F
TTXD1_10	1009	DEG F	TTXSPL	127	DEG F
TTXD1_11	986	DEG F	TTXSP1	79	DEG F
TTXD1_12	1008	DEG F	TTXSP2	76	DEG F
TTXD1_13	964	DEG F	TTXSP3	74	DEG F
TTXD1_14	989	DEG F	CTDA1	632	DEG F
TTXD1_15	956	DEG F	CTDA2	628	DEG F
TTXD1_16	968	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 11:30:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	61	DEG F	BB4	0.07	IPS
→ FQG	10.773	#/SEC	BB5	0.09	IPS
FPRG	197.3	PSIG	BB7	0.02	IPS
FQT	10.781	#/SEC	BB8	0.02	IPS

WQJF_PR	205	RPM	S125N	-73.85	V DC
WXC	0.656	RATIO	S125P	55.55	V DC
→WQJ	7.429	#/SEC	HPA1	95.7	% H2
WXJ	0.686	RATIO	HPA2	94.4	% H2
FSR	61.6	% FSR	CPD	156.1	PSIG
WSQ	7.362	#/SEC	CTD	632	DEG F
BB1	0.06	IPS	CTIF1	53	DEG F
BB2	0.06	IPS	CTIF2	52	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
12 FEB 93 11:34:00	10.768	7.344	0.682	0.658	51

DATA LIST 12 12 FEB 93 11:45:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	996	DEG F	TTXD1_17	986	DEG F
TTXD1_2	950	DEG F	TTXD1_18	953	DEG F
TTXD1_3	1012	DEG F	TTXC	993	DEG F
TTXD1_4	1027	DEG F	TNH	100.1	% SPD
TTXD1_5	995	DEG F	TNR	104.0	% SPD
TTXD1_6	1032	DEG F	→DW	80.30	MW
TTXD1_7	1020	DEG F	FDG1	30.00	INH20
TTXD1_8	999	DEG F	FDG2	65.9	INH20
TTXD1_9	1013	DEG F	LTTH1	125	DEG F
TTXD1_10	1008	DEG F	TTXSPL	127	DEG F
TTXD1_11	986	DEG F	TTXSP1	80	DEG F
TTXD1_12	1007	DEG F	TTXSP2	78	DEG F
TTXD1_13	963	DEG F	TTXSP3	73	DEG F
TTXD1_14	990	DEG F	CTDA1	632	DEG F
TTXD1_15	958	DEG F	CTDA2	628	DEG F
TTXD1_16	967	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 11:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	61	DEG F	BB4	0.07	IPS
→FQG	10.688	#/SEC	BB5	0.09	IPS
FPBG	197.4	PSIG	BB7	0.02	IPS

CTIM	53	DEG F	TIMR_01	42 655.5	HOURS
WQJF_PR	193	RPM	S125N	-73.92	V DC
WXC	0.644	RATIO	S125P	55.55	V DC
WQJ	7.001	#/SEC	HPA1	95.6	% H2
WXJ	0.655	RATIO	HPA2	94.4	% H2
FSR	61.1	% FSR	CPD	155.9	PSIG
WSQ	6.612	#/SEC	CTD	632	DEG F
BB1	0.05	IPS	CTIF1	53	DEG F
BB2	0.05	IPS	CTIF2	52	DEG F
BB3	0.20	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 10.755
WQJ = 7.260
DW = 80.61

Unit 3 - Gas End Run #3

DATA LIST 12 12 FEB 93 12:00:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	996	DEG F	TTXD1_17	988	DEG F
TTXD1_2	953	DEG F	TTXD1_18	956	DEG F
TTXD1_3	1013	DEG F	TTXC	994	DEG F
TTXD1_4	1025	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	104.0	% SPD
TTXD1_6	1030	DEG F	DW	80.24	MW
TTXD1_7	1018	DEG F	FDG1	30.00	INH20
TTXD1_8	1000	DEG F	FDG2	65.6	INH20
TTXD1_9	1019	DEG F	LTTH1	126	DEG F
TTXD1_10	1008	DEG F	TTXSPL	127	DEG F
TTXD1_11	986	DEG F	TTXSP1	78	DEG F
TTXD1_12	1007	DEG F	TTXSP2	76	DEG F
TTXD1_13	966	DEG F	TTXSP3	75	DEG F
TTXD1_14	992	DEG F	CTDA1	633	DEG F
TTXD1_15	957	DEG F	CTDA2	630	DEG F
TTXD1_16	970	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 12:00:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	63	DEG F	BB4	0.07	IPS
FQG	10.677	#/SEC	BB5	0.09	IPS
FPRG	197.5	PSIG	BB7	0.02	IPS
FQT	10.660	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	7.018	#/SEC	CSGV	82.6	DEG
CTIM	54	DEG F	TIMR_01	42 655.8	HOURS
WQJF_PR	196	RPM	S125N	-74.07	V DC
WXC	0.645	RATIO	S125P	55.33	V DC
WQJ	7.120	#/SEC	HPA1	95.7	% H2
WXJ	0.672	RATIO	HPA2	94.5	% H2
FSR	61.2	% FSR	CPD	155.5	PSIG
WSQ	7.018	#/SEC	CTD	633	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 12:15:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	997	DEG F	TTXD1_17	989	DEG F
TTXD1_2	953	DEG F	TTXD1_18	957	DEG F
TTXD1_3	1013	DEG F	TTXC	994	DEG F
TTXD1_4	1029	DEG F	TNH	100.0	% SPD
TTXD1_5	998	DEG F	TNR	104.0	% SPD
TTXD1_6	1031	DEG F	DW	30.18	MW
TTXD1_7	1019	DEG F	FDG1	30.00	INH20
TTXD1_8	1002	DEG F	FDG2	66.2	INH20
TTXD1_9	1018	DEG F	LTTH1	126	DEG F
TTXD1_10	1008	DEG F	TTXSPL	127	DEG F
TTXD1_11	987	DEG F	TTXSP1	78	DEG F
TTXD1_12	1009	DEG F	TTXSP2	75	DEG F
TTXD1_13	966	DEG F	TTXSP3	72	DEG F
TTXD1_14	992	DEG F	CTDA1	633	DEG F
TTXD1_15	959	DEG F	CTDA2	630	DEG F
TTXD1_16	968	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 12:15:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	64	DEG F	BB4	0.07	IPS
FQG	10.723	#/SEC	BB5	0.09	IPS
FPRG	197.3	PSIG	BB7	0.02	IPS
FQT	10.724	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	7.237	#/SEC	CSGV	82.8	DEG
CTIM	55	DEG F	TIMR_01	42 656.0	HOURS
WQJF_PR	200	RPM	S125N	-74.21	V DC
WXC	0.647	RATIO	S125P	55.19	V DC
WQJ	7.260	#/SEC	HPA1	95.6	% H2
WXJ	0.680	RATIO	HPA2	94.5	% H2
FSR	61.5	% FSR	CPD	155.6	PSIG
WSQ	7.237	#/SEC	CTD	633	DEG F
BB1	0.05	IPS	CTIF1	55	DEG F
BB2	0.05	IPS	CTIF2	53	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	998	DEG F	TTXD1_17	987	DEG F
TTXD1_2	951	DEG F	TTXD1_18	955	DEG F
TTXD1_3	1009	DEG F	TTXC	993	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	1001	DEG F	TNR	104.0	% SPD
TTXD1_6	1031	DEG F	DW	79.99	MW
TTXD1_7	1017	DEG F	FDG1	30.00	INH20
TTXD1_8	1000	DEG F	FDG2	65.7	INH20
TTXD1_9	1016	DEG F	LTTH1	126	DEG F
TTXD1_10	1009	DEG F	TTXSPL	127	DEG F
TTXD1_11	988	DEG F	TTXSP1	80	DEG F
TTXD1_12	1005	DEG F	TTXSP2	76	DEG F
TTXD1_13	965	DEG F	TTXSP3	73	DEG F
TTXD1_14	991	DEG F	CTDA1	635	DEG F
TTXD1_15	959	DEG F	CTDA2	631	DEG F
TTXD1_16	968	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 12:30:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	62	DEG F	BB4	0.07	IPS
FOG	10.676	#/SEC	BB5	0.10	IPS
FPSG	197.4	PSIG	BB7	0.02	IPS
FOT	10.657	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSO	7.144	#/SEC	CSGV	82.6	DEG
CTIM	55	DEG F	TIMR_01	42 456.3	HOURS
WGGJF_PR	200	RPM	S125N	-73.99	V DC
WXC	0.646	RATIO	S125P	55.40	V DC
WGJ	7.230	#/SEC	HPA1	95.6	% H2
WXJ	0.676	RATIO	HPA2	94.5	% H2
FGR	61.0	% FGR	CPD	155.5	PSIG
WSO	7.144	#/SEC	CTD	635	DEG F
BB1	0.06	IPS	CTIF1	55	DEG F
BB2	0.06	IPS	CTIF2	54	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
12 FEB 93 12:34:00	10.711	7.244	0.677	0.648	54

DATA LIST 12 12 FEB 93 12:45:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	998	DEG F	TTXD1_17	989	DEG F
TTXD1_2	953	DEG F	TTXD1_18	957	DEG F
TTXD1_3	1013	DEG F	TTXC	994	DEG F
TTXD1_4	1027	DEG F	TNH	100.0	% SPD
TTXD1_5	997	DEG F	TNF	104.0	% SPD
TTXD1_6	1031	DEG F	DW	80.36	MW
TTXD1_7	1018	DEG F	FDG1	30.00	INH20
TTXD1_8	1003	DEG F	FDG2	65.3	INH20
TTXD1_9	1017	DEG F	LTTH1	126	DEG F
TTXD1_10	1009	DEG F	TTXSPL	127	DEG F
TTXD1_11	988	DEG F	TTXSP1	78	DEG F
TTXD1_12	1007	DEG F	TTXSP2	75	DEG F
TTXD1_13	965	DEG F	TTXSP3	73	DEG F
TTXD1_14	992	DEG F	CTDA1	634	DEG F
TTXD1_15	958	DEG F	CTDA2	630	DEG F
TTXD1_16	966	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 12:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	62	DEG F	BB4	0.07	IPS
FQG	10.680	#/SEC	BB5	0.10	IPS
FPRG	197.3	PSIG	BB7	0.02	IPS
FQT	10.695	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSQ	6.831	#/SEC	CSGV	82.6	DEG
CTIM	54	DEG F	TIMR_01	42 656.5	HOURS
WQJF_PP	199	RPM	S125N	-74.36	V DC
WXC	0.642	RATIO	S125P	55.11	V DC
WQJ	7.200	#/SEC	HPA1	95.6	% H2
WXJ	0.679	RATIO	HPA2	94.5	% H2
FSR	61.2	% FSR	CPD	155.6	PSIG
WSQ	6.831	#/SEC	CTD	634	DEG F
BB1	0.05	IPS	CTIF1	54	DEG F
BB2	0.15	IPS	CTIF2	54	DEG F
BB3	0.19	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 13:00:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	1000	DEG F	TTXD1_17	987	DEG F
TTXD1_2	954	DEG F	TTXD1_18	956	DEG F
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	DW	[illegible]	MW
TTXD1_7	1022	DEG F	FDG1	30.00	INH20
TTXD1_8	1003	DEG F	FDG2	66.2	INH20
TTXD1_9	1017	DEG F	LTTH1	124	DEG F
TTXD1_10	1011	DEG F	TTXSPL	127	DEG F
TTXD1_11	985	DEG F	TTXSP1	78	DEG F
TTXD1_12	1006	DEG F	TTXSP2	76	DEG F
TTXD1_13	963	DEG F	TTXSP3	76	DEG F
TTXD1_14	990	DEG F	CTDA1	635	DEG F
TTXD1_15	956	DEG F	CTDA2	629	DEG F
TTXD1_16	968	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 13:00:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	62	DEG F	BB4	0.07	IPS
FRG	10.719	#/SEC	BB5	0.09	IPS
FPRG	197.4	PSIG	BB7	0.02	IPS
FOT	10.737	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#8		BB9	0.06	IPS
WSO	6.753	#/SEC	OSGV	82.7	DEG
OTIM	54	DEG F	TIMR_01	42 654.8	HOURS
WGIF_PR	198	RPM	S125N	-74.29	V DC
WXC	0.644	RATIO	S125P	55.11	V DC
WOJ	7.100	#/SEC	HPA1	95.6	% H2
WXJ	0.673	RATIO	HPA2	94.5	% H2
FBR	61.3	% FBR	CPD	155.6	PSIG
WSO	1.752	#/SEC	CTD	635	DEG F
BB1	0.06	IPS	CTIF1	54	DEG F
BB2	0.06	IPS	CTIF2	53	DEG F
BB3	0.1[illegible]	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 12 FEB 93 13:15:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	998	DEG F	TTXD1_17	990	DEG F
TTXD1_2	955	DEG F	TTXD1_18	956	DEG F
TTXD1_3	1012	DEG F	TTXC	995	DEG F
TTXD1_4	1031	DEG F	TNH	100.0	% SPD
TTXD1_5	1001	DEG F	TNR	104.0	% SPD
TTXD1_6	1031	DEG F	DW	90.36	MW
TTXD1_7	1019	DEG F	FDG1	30.00	INH20
TTXD1_8	1003	DEG F	FDG2	64.4	INH20
TTXD1_9	1020	DEG F	LTTH1	128	DEG F
TTXD1_10	1010	DEG F	TTXSPL	127	DEG F
TTXD1_11	988	DEG F	TTXSP1	77	DEG F
TTXD1_12	1009	DEG F	TTXSP2	76	DEG F
TTXD1_13	967	DEG F	TTXSP3	71	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 — 12 FEB 93 13:15:08 — PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FTG	61	DEG F	BB4	0.07	IPS
FQG	10.787	#/SEC	BB5	0.10	IPS
FPRG	197.3	PSIG	BB7	0.02	IPS
FQT	10.774	#/SEC	BB8	0.02	IPS
FLAME	#3#4#7#9		BB9	0.06	IPS
WSQ	6.761	#/SEC	CSGV	92.6	DEG
CTIM	55	DEG F	TIMR_01	42 657.0	HOURS
WQJF_PR	199	RPM	S125N	-74.29	V DC
WXC	0.647	RATIO	S125P	55.19	V DC
WQJ	7.220	#/SEC	HPA1	95.6	% H2
WXJ	0.669	RATIO	HPA2	94.6	% H2
FER	41.1	% FER	CPD	155.3	PSIG
WSQ	6.761	#/SEC	CTD	634	DEG F
BB1	0.05	IPS	CTIF1	55	DEG F
BB2	0.05	IPS	CTIF2	54	DEG F
BB3	0.18	IPS			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 — 12 FEB 93 13:30:01 — PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_1	997	DEG F	TTXD1_17	986	DEG F
TTXD1_2	951	DEG F	TTXD1_18	955	DEG F
TTXD1_3	1012	DEG F	TTXC	993	DEG F
TTXD1_4	1029	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	104.0	% SPD
TTXD1_6	1031	DEG F	DW	81.05	MW
TTXD1_7	1021	DEG F	FDG1	30.00	INH20
TTXD1_8	999	DEG F	FDG2	67.9	INH20
TTXD1_9	1018	DEG F	LTTH1	126	DEG F
TTXD1_10	1009	DEG F	TTXSPL	127	DEG F
TTXD1_11	985	DEG F	TTXSP1	80	DEG F
TTXD1_12	1007	DEG F	TTXSP2	74	DEG F
TTXD1_13	963	DEG F	TTXSP3	76	DEG F
TTXD1_14	989	DEG F	CTDA1	631	DEG F
TTXD1_15	954	DEG F	CTDA2	627	DEG F
TTXD1_16	966	DEG F	FPG	3.29	V DC

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 — 12 FEB 93 13:30:08 — PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	992	DEG F	TTXC	992	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1025	DEG F	TNR	104.3	% SPD
TTXD1_6	1023	DEG F	FDG1	30.00	INH20
TTXD1_7	998	DEG F	FDG2	81.5	INH20
TTXD1_8	973	DEG F	LTTH1	123	DEG F
TTXD1_9	987	DEG F	TTXSPL	125	DEG F
TTXD1_10	1009	DEG F	TTXSP1	88	DEG F
TTXD1_11	976	DEG F	TTXSP2	80	DEG F
TTXD1_12	999	DEG F	TTXSP3	75	DEG F
TTXD1_13	968	DEG F	HPA1	93.1	% H2
TTXD1_14	980	DEG F	HPA2	94.7	% H2
TTXD1_15	981	DEG F	TTWS1A01	848	DEG F
TTXD1_17	978	DEG F	TTWS1A02	-2048	DEG F
TTXD1_18	989	DEG F			
	961	DEG F			

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

Sycamore
2/11/93
Unit 4

LOG PERIOD = 0015 MINUTES

ON/OFF

DATA LIST 12 11 FEB 93 15:30:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	60	DEG F	BB4	0.07	IPS
FQG	11.924	#/SEC	BB5	0.06	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.962	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.461	#/SEC	CSGV	83.5	DEG
DW	79.74	MW	TIMR_01	42 712.1	HOURS
WQJF_PR	229	RPM	S125N	-63.71	V DC
WYC	0.479	RATIO	S125P	47.29	V DC

WSQ	9.461	#/SEC	CTIF2	59	DEG F
BB1	0.06	IPS	TTXD1_1	995	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 15:30:07 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	993	DEG F	TTXC	992	DEG F
TTXD1_4	1048	DEG F	TNH	100.0	% SPD
TTXD1_5	1023	DEG F	TNR	104.3	% SPD
TTXD1_6	1023	DEG F	FDG1	30.00	INH20
TTXD1_7	997	DEG F	FDG2	82.0	INH20
TTXD1_8	974	DEG F	LTTH1	123	DEG F
TTXD1_9	986	DEG F	TTXSPL	125	DEG F
TTXD1_10	1011	DEG F	TTXSP1	88	DEG F
TTXD1_11	974	DEG F	TTXSP2	79	DEG F
TTXD1_12	997	DEG F	TTXSP3	74	DEG F
TTXD1_13	969	DEG F	HPA1	93.1	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2

01 849 DEG F

TTXD1_16 976 DEG F G F ....

TTXD1_18 959 DE REMOTE LINK HEALTHY

LOG PERIOD OUR LOG ---------- ROLLING AVG ----------

#/SEC #/SEC RATIO RATIO E

11 FEB 93 15:30:22.75 233 REMOTE DIAGNOSTIC ALARM 11 FEB 93 15:34:01.87 233 REMOTE DIAGNOSTIC ALARM NORMAL

11 FEB 93 15:42:12.12 120 HYDROGEN PRESS LOW (SKID) ALARM

Unit 4 - Gas Begin Run #1

DATA LIST 12 11 FEB 93 15:45:00 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.30	V DC	BB3	0.20	IPS
FTG	60	DEG F	BB4	0.07	IPS
FQG	11.913	#/SEC	BB5	0.06	IPS
FPRG	197.6	PSIG	BB7	0.03	IPS
FQT	11.928	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.011	#/SEC	CSGV	83.5	DEG
MW	79.77	MW	TIMR 01	42 712.4	HOURS

WXJ	0.700	RATIO	CTD	647	DEG F
FSR	64.4	% FSR	CTIF1	59	DEG F
WSQ	9.011	#/SEC	CTIF2	59	DEG F
BB1	0.06	IPS	TTXD1_1	995	DEG F
BB2	0.06	IPS	TTXD1_2	1007	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 15:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	994	DEG F	TTXC	993	DEG F
TTXD1_4	1049	DEG F	TNH	100.0	% SPD
TTXD1_5	1025	DEG F	TNR	104.3	% SPD
TTXD1_6	1024	DEG F	FDG1	30.00	INH20
TTXD1_7	1000	DEG F	FDG2	81.5	INH20
TTXD1_8	973	DEG F	LTTH1	122	DEG F
TTXD1_9	987	DEG F	TTXSPL	126	DEG F
TTXD1_10	1011	DEG F	TTXSP1	90	DEG F
TTXD1_11	973	DEG F	TTXSP2	82	DEG F
TTXD1_12	995	DEG F	TTXSP3	76	DEG F
TTXD1_13	967	DEG F	HPA1	93.2	% H2
TTXD1_14	982	DEG F	HPA2	94.8	% H2
TTXD1_15	984	DEG F	TTWS1A01	849	DEG F
TTXD1_16	979	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	990	DEG F	.....	.....	.....
TTXD1_18	960	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 16:00:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	59	DEG F	BB4	0.07	IPS
FQG	11.917	#/SEC	BB5	0.06	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.918	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.677	#/SEC	CSGV	83.5	DEG
DW	80.05	MW	TIMR_01	42 712.6	HOURS
WQJF_PR	236	RPM	S125N	-63.86	V DC
WXC	0.692	RATIO	S125P	67.14	V DC
WQJ	8.564	#/SEC	CPD	157.1	PSIG
WXJ	0.720	RATIO	CTD	647	DEG F
FSR	64.3	% FSR	CTIF1	60	DEG F
WSQ	9.677	#/SEC	CTIF2	60	DEG F
BB1	0.06	IPS	TTXD1_1	997	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

DATA LIST 12 11 FEB 93 16:00:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	991	DEG F	TTXC	992	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1024	DEG F	TNR	104.3	% SPD
TTXD1_6	1022	DEG F	FDG1	30.00	INH20
TTXD1_7	997	DEG F	FDG2	81.3	INH20
TTXD1_8	970	DEG F	LTTH1	123	DEG F
TTXD1_9	988	DEG F	TTXSPL	125	DEG F
TTXD1_10	1008	DEG F	TTXSP1	87	DEG F
TTXD1_11	973	DEG F	TTXSP2	80	DEG F
TTXD1_12	996	DEG F	TTXSP3	76	DEG F
TTXD1_13	967	DEG F	HPA1	93.2	% H2
TTXD1_14	980	DEG F	HPA2	94.8	% H2
TTXD1_15	983	DEG F	TTWS1A01	849	DEG F
TTXD1_16	973	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	992	DEG F	.....	.....	.....
TTXD1_18	961	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 16:15:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	58	DEG F	BB4	0.08	IPS
→ FQG	11.926	#/SEC	BB5	0.07	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.957	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	10.038	#/SEC	CSGV	83.6	DEG
→ DW	79.86	MW	TIMR_01	42 712.9	HOURS
WQJF_PR	245	RPM	S125N	-63.57	V DC
WXC	0.716	RATIO	S125P	67.36	V DC
→ WQJ	8.873	#/SEC	CPD	157.3	PSIG
WXJ	0.750	RATIO	CTD	647	DEG F
FSR	64.3	% FSR	CTIF1	58	DEG F
WSQ	10.038	#/SEC	CTIF2	59	DEG F
BB1	0.06	IPS	TTXD1_1	992	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 16:15:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS

TTXD1_6	1022	DEG F	FDG1	30.00	INH20
TTXD1_7	996	DEG F	FDG2	81.5	INH20
TTXD1_8	973	DEG F	LTTH1	122	DEG F
TTXD1_9	987	DEG F	TTXSPL	125	DEG F
TTXD1_10	1009	DEG F	TTXSP1	87	DEG F
TTXD1_11	974	DEG F	TTXSP2	80	DEG F
TTXD1_12	995	DEG F	TTXSP3	75	DEG F
TTXD1_13	966	DEG F	HPA1	93.2	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2
TTXD1_15	977	DEG F	TTWS1A01	850	DEG F
TTXD1_16	974	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	989	DEG F	.....	.....	.....
TTXD1_18	960	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG=11.919
WQJ = 8.591
DW=79.76

Unit 4 - Gas End Run#1

DATA LIST 12 11 FEB 93 16:30:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	56	DEG F	BB4	0.07	IPS
FQG	11.923	#/SEC	BB5	0.06	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.942	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.998	#/SEC	CSGV	83.6	DEG
DW	79.99	MW	TIMR_01	42 713.1	HOURS
WQJF_PR	245	RPM	S125N	-63.57	V DC
WXC	0.714	RATIO	S125P	67.36	V DC
WQJ	8.873	#/SEC	CPD	157.0	PSIG
WXJ	0.743	RATIO	CTD	646	DEG F
FSR	64.2	% FSR	CTIF1	58	DEG F
WSQ	9.998	#/SEC	CTIF2	58	DEG F
BB1	0.06	IPS	TTXD1_1	993	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 16:30:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	993	DEG F	TTXC	991	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1022	DEG F	TNR	104.3	% SPD
TTXD1_6	1020	DEG F	FDG1	30.00	INH20
TTXD1_7	997	DEG F	FDG2	81.5	INH20
TTXD1_8	973	DEG F	LTTH1	122	DEG F
TTXD1_9	986	DEG F	TTXSPL	125	DEG F
TTXD1_10	1009	DEG F	TTXSP1	89	DEG F
TTXD1_11	974	DEG F	TTXSP2	81	DEG F

TTXD1_15	979	DEG F	TTWS1AD1	850	DEG F
TTXD1_16	974	DEG F	TTWS1AD2	-2048	DEG F
TTXD1_17	991	DEG F	.....	.....	.....
TTXD1_18	958	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 16:30:00	11.933	8.600	0.722	0.699	60

Unit 4 - Gas Begin Run #2

DATA LIST 12 11 FEB 93 16:45:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.30	V DC	BB3	0.19	IPS
FTG	54	DEG F	BB4	0.07	IPS
→ FQG	11.895	#/SEC	BB5	0.06	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.931	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.839	#/SEC	CSGV	83.6	DEG
→ DW	79.99	MW	TIMR_01	42 713.4	HOURS
WQJF_PR	246	RPM	S125N	-63.79	V DC
WXC	0.714	RATIO	S125P	67.14	V DC
→ WQJ	8.933	#/SEC	CPD	157.2	PSIG
WXJ	0.744	RATIO	CTD	647	DEG F
FSR	64.0	% FSR	CTIF1	59	DEG F
WSQ	9.839	#/SEC	CTIF2	59	DEG F
BB1	0.06	IPS	TTXD1_1	991	DEG F
BB2	0.06	IPS	TTXD1_2	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 16:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	992	DEG F	TTXC	991	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1023	DEG F	TNR	104.2	% SPD
TTXD1_6	1021	DEG F	FDG1	30.00	INH2O
TTXD1_7	997	DEG F	FDG2	80.6	INH2O
TTXD1_8	977	DEG F	TTW1	122	DEG F

TTXD1_12	996	DEG F	TTXSP3	76	DEG F
TTXD1_13	965	DEG F	HPA1	93.3	% H2
TTXD1_14	980	DEG F	HPA2	94.7	% H2
TTXD1_15	980	DEG F	TTWS1A01	849	DEG F
TTXD1_16	973	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	989	DEG F	.....	.....	.....
TTXD1_18	958	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

11 FEB 93 16:52:36.12 120 HYDROGEN PRESS LOW (SKID) NORMAL

DATA LIST 12 11 FEB 93 17:00:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.19	IPS
FTG	51	DEG F	BB4	0.08	IPS
→ FQG	11.952	#/SEC	BB5	0.07	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	11.976	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.675	#/SEC	CSGV	83.6	DEG
→ DW	80.36	MW	TIMR_01	42 713.6	HOURS
WQJF_PR	245	RPM	S125N	-63.86	V DC
WXC	0.721	RATIO	S125P	67.14	V DC
→ WQJ	8.883	#/SEC	CPD	157.6	PSIG
WXJ	0.741	RATIO	CTD	646	DEG F
FSR	64.1	% FSR	CTIF1	58	DEG F
WSQ	9.675	#/SEC	CTIF2	58	DEG F
BB1	0.06	IPS	TTXD1_1	992	DEG F
BB2	0.06	IPS	TTXD1_2	1010	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 17:00:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	994	DEG F	TTXC	992	DEG F
TTXD1_4	1046	DEG F	TNH	100.0	% SPD
TTXD1_5	1022	DEG F	TNR	104.2	% SPD
TTXD1_6	1024	DEG F	FDG1	30.00	INH20
TTXD1_7	995	DEG F	FDG2	80.7	INH20
TTXD1_8	974	DEG F	LTTH1	122	DEG F
TTXD1_9	989	DEG F	TTXSPL	125	DEG F
TTXD1_10	1009	DEG F	TTXSP1	87	DEG F
TTXD1_11	974	DEG F	TTXSP2	80	DEG F

TTXD1_15	982	DEG F	TTWS1A01	848	DEG F
TTXD1_16	976	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	990	DEG F	.....	.....	.....
TTXD1_18	960	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 17:15:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.19	IPS
FTG	48	DEG F	BB4	0.08	IPS
FQG	11.947	#/SEC	BB5	0.07	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	11.944	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.03	IPS
WSQ	9.984	#/SEC	CSGV	83.6	DEG
DW	80.30	MW	TIMR_01	42 713.9	HOURS
WQJF_PR	245	RPM	S125N	-63.57	V DC
WXC	0.717	RATIO	S125P	67.36	V DC
WQJ	8.933	#/SEC	CPD	157.6	PSIG
WXJ	0.742	RATIO	CTD	645	DEG F
FSR	64.0	% FSR	CTIF1	57	DEG F
WSQ	9.984	#/SEC	CTIF2	57	DEG F
BB1	0.06	IPS	TTXD1_1	993	DEG F
BB2	0.06	IPS	TTXD1_2	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 17:15:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	991	DEG F	TTXC	991	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1022	DEG F	TNR	104.2	% SPD
TTXD1_6	1021	DEG F	FDG1	30.00	INH2O
TTXD1_7	995	DEG F	FDG2	80.0	INH2O
TTXD1_8	970	DEG F	LTTH1	122	DEG F
TTXD1_9	987	DEG F	TTXSPL	125	DEG F
TTXD1_10	1008	DEG F	TTXSP1	92	DEG F
TTXD1_11	971	DEG F	TTXSP2	81	DEG F
TTXD1_12	996	DEG F	TTXSP3	79	DEG F
TTXD1_13	965	DEG F	HPA1	93.4	% H2
TTXD1_14	978	DEG F	HPA2	94.7	% H2
TTXD1_15	982	DEG F	TTWS1A01	848	DEG F
TTXD1_16	976	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	990	DEG F	.....	.....	.....
TTXD1_18	956	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

FWG
WQJ = 8.916
DW = 80.22

Unit 4 - Gas End Run#2

DATA LIST 12 11 FEB 93 17:30:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	46	DEG F	BB4	0.08	IPS
FQG	11.917	#/SEC	BB5	0.07	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.917	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.589	#/SEC	CSGV	83.6	DEG
DW	80.12	MW	TIMR_01	42 714.1	HOURS
WQJF_PR	246	RPM	S125N	-63.93	V DC
WXC	0.713	RATIO	S125P	67.07	V DC
WQJ	8.853	#/SEC	CPD	157.8	PSIG
WXJ	0.744	RATIO	CTD	644	DEG F
FSR	63.9	% FSR	CTIF1	57	DEG F
WSQ	9.589	#/SEC	CTIF2	57	DEG F
BB1	0.06	IPS	TTXD1_1	990	DEG F
BB2	0.06	IPS	TTXD1_2	1009	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 17:30:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	990	DEG F	TTXC	991	DEG F
TTXD1_4	1049	DEG F	TNH	100.0	% SPD
TTXD1_5	1022	DEG F	TNR	104.2	% SPD
TTXD1_6	1021	DEG F	FDG1	30.00	INH2O
TTXD1_7	996	DEG F	FDG2	79.3	INH2O
TTXD1_8	971	DEG F	LTTH1	121	DEG F
TTXD1_9	986	DEG F	TTXSPL	125	DEG F
TTXD1_10	1007	DEG F	TTXSP1	89	DEG F
TTXD1_11	972	DEG F	TTXSP2	82	DEG F
TTXD1_12	994	DEG F	TTXSP3	77	DEG F
TTXD1_13	966	DEG F	HPA1	93.6	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2
TTXD1_15	984	DEG F	TTWS1A01	847	DEG F
TTXD1_16	977	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	989	DEG F	.....	.....	.....
TTXD1_18	959	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

	#/SEC	#/SEC	RATIO	RATIO	DEG F
11 FEB 93 17:30:00	11.934	8.865	0.744	0.717	59

Unit 4 - Begin Run #3
Gas

DATA LIST 12 11 FEB 93 17:45:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.19	IPS
FTG	44	DEG F	BB4	0.08	IPS
FQG	11.927	#/SEC	BB5	0.07	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	11.940	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.783	#/SEC	CSGV	83.5	DEG
DW	80.05	MW	TIMR_01	42 714.4	HOURS
WQJF_PR	244	RPM	S125N	-63.50	V DC
WXC	0.720	RATIO	S125P	67.51	V DC
WQJ	8.804	#/SEC	CPD	157.7	PSIG
WXJ	0.737	RATIO	CTD	646	DEG F
FSR	63.6	% FSR	CTIF1	58	DEG F
WSQ	9.783	#/SEC	CTIF2	58	DEG F
BB1	0.06	IPS	TTXD1_1	993	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 17:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	991	DEG F	TTXC	991	DEG F
TTXD1_4	1048	DEG F	TNH	100.0	% SPD
TTXD1_5	1020	DEG F	TNR	104.2	% SPD
TTXD1_6	1022	DEG F	FDG1	30.00	INH20
TTXD1_7	994	DEG F	FDG2	79.3	INH20
TTXD1_8	973	DEG F	LTTH1	122	DEG F
TTXD1_9	985	DEG F	TTXSPL	125	DEG F
TTXD1_10	1007	DEG F	TTXSP1	90	DEG F
TTXD1_11	973	DEG F	TTXSP2	81	DEG F
TTXD1_12	993	DEG F	TTXSP3	75	DEG F
TTXD1_13	966	DEG F	HPA1	93.7	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2
TTXD1_15	986	DEG F	TTWS1A01	847	DEG F
TTXD1_16	975	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	990	DEG F	.....	.....	.....
TTXD1_18	956	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.19	IPS
FTG	43	DEG F	BB4	0.07	IPS
FQG	11.952	#/SEC	BB5	0.06	IPS
FPRG	197.4	PSIG	BB7	0.03	IPS
FQT	11.971	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.732	#/SEC	CSGV	83.6	DEG
DW	80.30	MW	TIMR_01	42 714.6	HOURS
WQJF_PR	244	RPM	S125N	-63.57	V DC
WXC	0.722	RATIO	S125P	67.36	V DC
WQJ	8.873	#/SEC	CPD	157.7	PSIG
WXJ	0.742	RATIO	CTD	645	DEG F
FSR	63.9	% FSR	CTIF1	58	DEG F
WSQ	9.732	#/SEC	CTIF2	58	DEG F
BB1	0.06	IPS	TTXD1_1	991	DEG F
BB2	0.06	IPS	TTXD1_2	1007	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 18:00:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	991	DEG F	TTXC	990	DEG F
TTXD1_4	1047	DEG F	TNH	100.0	% SPD
TTXD1_5	1021	DEG F	TNR	104.2	% SPD
TTXD1_6	1020	DEG F	FDG1	30.00	INH20
TTXD1_7	994	DEG F	FDG2	79.9	INH20
TTXD1_8	971	DEG F	LTTH1	122	DEG F
TTXD1_9	985	DEG F	TTXSPL	125	DEG F
TTXD1_10	1007	DEG F	TTXSP1	90	DEG F
TTXD1_11	972	DEG F	TTXSP2	83	DEG F
TTXD1_12	995	DEG F	TTXSP3	76	DEG F
TTXD1_13	965	DEG F	HPA1	93.8	% H2
TTXD1_14	980	DEG F	HPA2	94.7	% H2
TTXD1_15	981	DEG F	TTWS1A01	847	DEG F
TTXD1_16	977	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	990	DEG F	.....	.....	.....
TTXD1_18	958	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 18:15:02 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.20	IPS
FTG	43	DEG F	BB4	0.07	IPS

11.967

FQT	[illegible]	#/SEC	BB8	[illegible]	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.694	#/SEC	CSGV	83.6	DEG
→ DW	80.24	MW	TIMR_01	42 714.9	HOURS
WQJF_PR	244	RPM	S125N	-63.86	V DC
WXC	0.726	RATIO	S125P	67.07	V DC
→ WQJ	8.843	#/SEC	CPD	157.7	PSIG
WXJ	0.738	RATIO	CTD	646	DEG F
FSR	63.7	% FSR	CTIF1	58	DEG F
WSQ	9.694	#/SEC	CTIF2	58	DEG F
BB1	0.06	IPS	TTXD1_1	992	DEG F
BB2	0.06	IPS	TTXD1_2	1005	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 18:15:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	990	DEG F	TTXC	990	DEG F
TTXD1_4	1046	DEG F	TNH	100.0	% SPD
TTXD1_5	1021	DEG F	TNR	104.2	% SPD
TTXD1_6	1020	DEG F	FDG1	30.00	INH20
TTXD1_7	994	DEG F	FDG2	79.7	INH20
TTXD1_8	972	DEG F	LTTH1	122	DEG F
TTXD1_9	987	DEG F	TTXSPL	125	DEG F
TTXD1_10	1007	DEG F	TTXSP1	89	DEG F
TTXD1_11	973	DEG F	TTXSP2	81	DEG F
TTXD1_12	995	DEG F	TTXSP3	74	DEG F
TTXD1_13	965	DEG F	HPA1	93.9	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2
TTXD1_15	980	DEG F	TTWS1AO1	847	DEG F
TTXD1_16	975	DEG F	TTWS1AO2	-2048	DEG F
TTXD1_17	989	DEG F	.....	.....	.....
TTXD1_18	957	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 11.949
WQJ = 8.840
DW = 80.20

Unit 4 - Gas End Run #3

DATA LIST 12 11 FEB 93 18:30:01 PAGE000

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
FPG	3.29	V DC	BB3	0.19	IPS
FTG	41	DEG F	BB4	0.08	IPS
FQG	11.971	#/SEC	BB5	0.07	IPS
FPRG	197.5	PSIG	BB7	0.03	IPS
FQT	11.985	#/SEC	BB8	0.03	IPS
FLAME	#3#4#7#8		BB9	0.04	IPS
WSQ	9.966	#/SEC	CSGV	83.6	DEG
DW	80.36	MW	TIMR_01	42 715.1	HOURS
WQJF_PR	249	RPM	S125N	-63.57	V DC
WXC	0.723	RATIO	S125P	67.51	V DC
WQJ	9.072	#/SEC	CPD	157.7	PSIG

BB1	0.06	IPS	TTXD1_1	990	DEG F
BB2	0.06	IPS	TTXD1_2	1006	DEG F

REMOTE LINK HEALTHY

Sycamore Unit-4

LOG PERIOD = 0015 MINUTES

DATA LIST 12 11 FEB 93 18:30:07 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_3	991	DEG F	TTXC	990	DEG F
TTXD1_4	1048	DEG F	TNH	100.0	% SPD
TTXD1_5	1021	DEG F	TNR	104.2	% SPD
TTXD1_6	1022	DEG F	FDG1	30.00	INH20
TTXD1_7	995	DEG F	FDG2	79.5	INH20
TTXD1_8	968	DEG F	LTTH1	122	DEG F
TTXD1_9	987	DEG F	TTXSPL	125	DEG F
TTXD1_10	1005	DEG F	TTXSP1	93	DEG F
TTXD1_11	971	DEG F	TTXSP2	83	DEG F
TTXD1_12	993	DEG F	TTXSP3	80	DEG F
TTXD1_13	964	DEG F	HPA1	93.9	% H2
TTXD1_14	979	DEG F	HPA2	94.7	% H2
TTXD1_15	984	DEG F	TTWS1A01	847	DEG F
TTXD1_16	976	DEG F	TTWS1A02	-2048	DEG F
TTXD1_17	988	DEG F	.....	.....	.....
TTXD1_18	955	DEG F	.....	.....	.....

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 18:30:00	11.962	8.884	0.744	0.722	58

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
11 FEB 93 19:30:00	12.013	8.980	0.748	0.726	57

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:00:18 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	51	DEG F	WQJ	8.077	#/SEC
CTIF2	50	DEG F	WXJ	0.688	RATIO
CPD	156.0	PSIG	FSR	60.4	% FSR
CTD	638	DEG F	WSQ	8.580	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.88	V DC	BB2	0.11	IPS
LTTH1	123	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.10	IPS
FTG	63	DEG F	BB5	0.14	IPS
FQG	11.722	#/SEC	BB7	0.03	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.713	#/SEC	BD9	0.06	IPS
WSQ	8.580	#/SEC	CSGV	83.4	DEG
CTIM	51	DEG F	TIMR_01	42 989.6	HOURS
WQJF_PR	222	RPM	S125N	-64.88	V DC
WXC	0.672	RATIO	TTXD1_1	997	DEG F

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

UNIT - B Sycamore
Gas 2/16/93

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:00:28 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	974	DEG F	TTXD1_18	988	DEG F
TTXD1_3	975	DEG F	TTXC	994	DEG F
TTXD1_4	1026	DEG F	TNH	100.0	% SPD
TTXD1_5	997	DEG F	TNH	103.8	% SPD
TTXD1_6	992	DEG F	DW	79.31	MW
TTXD1_7	991	DEG F	FDG1	30.00	INH2O
TTXD1_8	996	DEG F	FDG2	77.8	INH2O
TTXD1_9	995	DEG F	LTTH1	123	DEG F
TTXD1_10	1028	DEG F	TTXSPL	126	DEG F
TTXD1_11	996	DEG F	TTXSP1	57	DEG F
TTXD1_12	936	DEG F	TTXSP2	54	DEG F
TTXD1_13	970	DEG F	TTXSP3	52	DEG F
TTXD1_14	1015	DEG F	CTDA1	638	DEG F
TTXD1_15	1005	DEG F	CTDA2	630	DEG F
TTXD1_16	983	DEG F	HPA1	93.1	% H2
TTXD1_17	983	DEG F	HPA2	89.7	% H2

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:15:04 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS

CPD	155.5	PSIG	FSR	60.2	% FSR	
CTD	639	DEG F	WSQ	8.519	#/SEC	
S125P	65.97	V DC	BB1	0.10	IPS	INSERT
S125N	-64.81	V DC	BB2	0.10	IPS	ENTRY
LTTH1	123	DEG F	BB3	0.24	IPS	
FPG	3.47	V DC	BB4	0.10	IPS	
FTG	63	DEG F	BB5	0.14	IPS	DELETE
FQG	11.718	#/SEC	BB7	0.05	IPS	ENTRY
FPRG	197.4	PSIG	BB8	0.05	IPS	
FOT	11.722	#/SEC	BB9	0.07	IPS	
WSQ	8.519	#/SEC	CSGV	83.4	DEG	SET LOG
CTIM	51	DEG F	TIMR_01	42 989.9	HOURS	ON/OFF
WQJF_PR	225	RPM	S125N	-64.81	V DC	
WXC	0.672	RATIO	TTXDL_1	997	DEG F	
						SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:15:14 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
TTXD1_2	971	DEG F	TTXD1_18	986	DEG F	NEXT
TTXD1_3	975	DEG F	TTXC	993	DEG F	PAGE
TTXD1_4	1026	DEG F	TNH	100.0	% SPD	
TTXD1_5	993	DEG F	TNR	103.8	% SPD	
TTXD1_6	993	DEG F	DW	79.06	MW	INSERT
TTXD1_7	992	DEG F	FDG1	50.00	INH2O	ENTRY
TTXD1_8	995	DEG F	FDG2	77.8	INH2O	
TTXD1_9	997	DEG F	LTTH1	122	DEG F	
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F	DELETE
TTXD1_11	998	DEG F	TTXSF1	57	DEG F	ENTRY
TTXD1_12	987	DEG F	TTXSF2	56	DEG F	
TTXD1_13	972	DEG F	TTXSF3	54	DEG F	
TTXD1_14	1015	DEG F	CTDA1	639	DEG F	SET LOG
TTXD1_15	1001	DEG F	CTDA2	632	DEG F	ON/OFF
TTXD1_16	980	DEG F	HPA1	93.1	% H2	
TTXD1_17	979	DEG F	HPA2	89.7	% H2	
						SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:30:01 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	50	DEG F	WQJ	8.166	#/SEC	NEXT
CTIF2	50	DEG F	WXC	0.699	RATIO	PAGE
CPD	156.6	PSIG	FSR	60.2	% FSR	
CTD	638	DEG F	WSQ	9.160	#/SEC	
S125P	66.05	V DC	BB1	0.11	IPS	INSERT
S125N	-64.81	V DC	BB2	0.10	IPS	ENTRY
LTTH1	122	DEG F	BB3	0.28	IPS	

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	IPS	[illegible]
FPAG	197.5	PSIG	BBS	0.05	IPS	
FGT	11.727	#/SEC	[illegible]	[illegible]	IPS	
WSG	9.160	#/SEC	CSGV	83.4	DEG	SET LOG
CTIM	50	DEG F	TIMR_01	42 990.1	HOURS	ON/OFF
WQJF_PR	225	RPM	S125N	-64.81	V DC	
WXC	0.676	RATIO	TTXD1_1	998	DEG F	

SET TIME
ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:30:11 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
TTXD1_2	977	DEG F	TTXD1_18	992	DEG F	NEXT
TTXD1_3	974	DEG F	TTXC	993	DEG F	PAGE
TTXD1_4	1024	DEG F	TNH	100.0	% SPD	
TTXD1_5	999	DEG F	TNR	103.8	% SPD	
TTXD1_6	992	DEG F	DW	79.75	MW	INSERT
TTXD1_7	994	DEG F	FDG1	30.00	INH2O	ENTRY
TTXD1_8	999	DEG F	FDG2	78.1	INH2O	
TTXD1_9	996	DEG F	LTTH1	112	DEG F	
TTXD1_10	1026	DEG F	TTXSPL	127	DEG F	DELETE
TTXD1_11	997	DEG F	TTXSP1	55	DEG F	ENTRY
TTXD1_12	987	DEG F	TTXSP2	54	DEG F	
TTXD1_13	972	DEG F	TTXSP3	51	DEG F	
TTXD1_14	1015	DEG F	CTDA1	838	DEG F	SET LOG
TTXD1_15	1000	DEG F	CTDA2	830	DEG F	ON/OFF
TTXD1_16	983	DEG F	HPA1	93.1	% H2	
TTXD1_17	983	DEG F	HPA2	89.7	% H2	

SET TIME
ON/OFF

LOG PERIOD = 0480 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
16 FEB 93 10:33:00	11.731	8.134	0.693	0.671	50

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:45:18 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	50	DEG F	WQJ	8.445	#/SEC	NEXT
CTIF2	51	DEG F	WXJ	0.716	RATIO	PAGE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

S125N	-64.81	V DC	BB2	0.10	IPS	ENTRY
LTTH1	123	DEG F	BB3	0.26	IPS	
FPG	3.48	V DC	BB4	0.10	IPS	
FTG	63	DEG F	BB5	0.14	IPS	DELETE
FQG	11.807	#/SEC	BB7	0.05	IPS	ENTRY
FPRG	197.4	PSIG	BB8	0.05	IPS	
FQT	11.800	#/SEC	BB9	0.07	IPS	
WSQ	8.880	#/SEC	CSGV	83.4	DEG	SET LOG
CTIM	51	DEG F	TIMR_01	42 990.4	HOURS	ON/OFF
WQJF_PR	233	RPM	S125N	-64.81	V DC	
WXC	0.687	RATIO	TTXD1_1	998	DEG F	
						SET TIME
						ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 10:45:32 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
TTXD1_2	975	DEG F	TTXD1_18	988	DEG F	NEXT
TTXD1_3	975	DEG F	TTXC	994	DEG F	PAGE
TTXD1_4	1023	DEG F	TNH	100.0	% SPD	
TTXD1_5	997	DEG F	TNR	103.5	% SPD	
TTXD1_6	992	DEG F	DW	79.37	MW	INSERT
TTXD1_7	993	DEG F	FDG1	30.00	INH20	ENTRY
TTXD1_8	999	DEG F	FDG2	79.1	INH20	
TTXD1_9	997	DEG F	LTTH1	122	DEG F	
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F	DELETE
TTXD1_11	997	DEG F	TTXSP1	57	DEG F	ENTRY
TTXD1_12	986	DEG F	TTXSP2	52	DEG F	
TTXD1_13	970	DEG F	TTXSP3	50	DEG F	
TTXD1_14	1014	DEG F	CTDA1	638	DEG F	SET LOG
TTXD1_15	1000	DEG F	CTDA2	632	DEG F	ON/OFF
TTXD1_16	983	DEG F	HPA1	93.1	% H2	
TTXD1_17	982	DEG F	HPA2	81.8	% H2	
						SET TIME
						ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:00:12 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	51	DEG F	WQJ	8.365	#/SEC	NEXT
CTIF2	51	DEG F	WXJ	0.712	RATIO	PAGE
CPD	155.8	PSIG	FSR	60.4	% FSR	
CTD	639	DEG F	WSQ	11.041	#/SEC	
S125P	65.97	V DC	BB1	0.10	IPS	INSERT
S125N	-64.81	V DC	BB2	0.10	IPS	ENTRY
LTTH1	123	DEG F	BB3	0.26	IPS	
FPG	3.48	V DC	BB4	0.09	IPS	
FTG	62	DEG F	BB5	0.14	IPS	DELETE
FQG	11.779	#/SEC	BB7	0.05	IPS	ENTRY

[illegible]	[illegible]	#/SEC	[illegible]	[illegible]	DEG	[illegible]
CTIM	51	DEG F	TIMR_01	42 990.9	HOURS	ON/OFF
WQJF_PR	231	RPM	S125N	-64.81	V DC	
WXC	0.689	RATIO	TTXD1_1	1000	DEG F	

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:00:21 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	971	DEG F	TTXD1_18	989	DEG F
TTXD1_3	973	DEG F	TTXC	993	DEG F
TTXD1_4	1023	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	103.3	% SPD
TTXD1_6	994	DEG F	DW	79.31	MW
TTXD1_7	993	DEG F	FDG1	30.03	INH20
TTXD1_8	997	DEG F	FDG2	78.3	INH20
TTXD1_9	994	DEG F	LTTH1	122	DEG F
TTXD1_10	1025	DEG F	TTXSPL	126	DEG F
TTXD1_11	993	DEG F	TTXSP1	58	DEG F
TTXD1_12	984	DEG F	TTXSP2	54	DEG F
TTXD1_13	973	DEG F	TTXSP3	52	DEG F
TTXD1_14	1015	DEG F	CTDA1	639	DEG F
TTXD1_15	1000	DEG F	CTDA2	631	DEG F
TTXD1_16	981	DEG F	HPA1	93.1	% H2
TTXD1_17	981	DEG F	HPA2	89.9	% H2

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

Unit 2 - Gas
2/16/93

Begin Run #1

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:15:05 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	→ WQJ	8.505	#/SEC
CTIF2	51	DEG F	WXJ	0.721	RATIO
CPD	155.2	PSIG	FSR	60.6	% FSR
CTD	639	DEG F	WSQ	8.948	#/SEC
S125P	65.83	V DC	BB1	0.10	IPS
S125N	-64.88	V DC	BB2	0.10	IPS
LTTH1	123	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.10	IPS
FTG	61	DEG F	BB5	0.14	IPS
→ FDG	11.806	#/SEC	BB7	0.05	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.831	#/SEC	BB9	0.07	IPS
WSQ	8.948	#/SEC	CSGV	83.3	DEG
CTIM	52	DEG F	TIMR_01	42 990.9	HOURS
WQJF_PR	235	RPM	S125N	-64.88	V DC
WXC	0.694	RATIO	TTXD1_1	999	DEG F

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:15:19 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	968	DEG F	TTXD1_18	982	DEG F
TTXD1_3	978	DEG F	TTXC	976	DEG F
TTXD1_4	1026	DEG F	TNH	100.0	% SPD
TTXD1_5	992	DEG F	TNR	103.8	% SPD
TTXD1_6	992	DEG F	→ DW	79.12	MW
TTXD1_7	991	DEG F	FDG1	80.00	INH20
TTXD1_8	998	DEG F	FDG2	79.4	INH20
TTXD1_9	996	DEG F	LTTH1	123	DEG F
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F
TTXD1_11	999	DEG F	TTXSP1	62	DEG F
TTXD1_12	988	DEG F	TTXSP2	55	DEG F
TTXD1_13	975	DEG F	TTXSP3	81	DEG F
TTXD1_14	1018	DEG F	CTDA1	638	DEG F
TTXD1_15	1004	DEG F	CTDA2	632	DEG F
TTXD1_16	981	DEG F	HPA1	93.0	% H2
TTXD1_17	979	DEG F	HPA2	89.7	% H2

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:30:01 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	51	DEG F	→ WQJ	8.585	#/SEC
CTIF2	51	DEG F	WXC	0.724	RATIO
CPD	155.7	PSIG	FSR	60.6	% FSR
CTD	640	DEG F	WSQ	8.934	#/SEC
S125P	66.05	V DC	BB1	0.10	IPS
S125N	-64.74	V DC	BB2	0.10	IPS
LTTH1	122	DEG F	BB3	0.26	IPS
FPS	3.46	V DC	BB4	0.03	IPS
FTG	61	DEG F	BB5	0.13	IPS
→ FQG	11.814	#/SEC	BB7	0.05	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.82[illegible]	#/SEC	BB9	0.07	IPS
WSQ	8.934	#/SEC	OSGV	83.3	DEG
CTIM	51	DEG F	TIMR_01	+2 991.1	HOURS
WQJF_PS	236	RPM	S125N	-64.74	V DC
WXC	0.696	RATIO	TTXD1_1	1000	DEG F

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:30:09 PAGE 01

TTXD1_2	977	DEG F	TTXD1_16	991	DEG F	NEXT
TTXD1_3	996	DEG F	TTXC	995	DEG F	PAGE
TTXD1_4	1023	DEG F	TNH	100.0	% SPD	
TTXD1_5	998	DEG F	TNR	103.8	% SPD	
TTXD1_6	993	DEG F	→ DW	79.12	MW	INSERT
TTXD1_7	993	DEG F	FDG1	30.00	INH2O	ENTRY
TTXD1_8	999	DEG F	FDG2	79.3	INH2O	
TTXD1_9	998	DEG F	LTTH1	122	DEG F	
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F	DELETE
TTXD1_11	994	DEG F	TTXSP1	56	DEG F	ENTRY
TTXD1_12	985	DEG F	TTXSP2	51	DEG F	
TTXD1_13	969	DEG F	TTXSP3	51	DEG F	
TTXD1_14	1016	DEG F	CTDA1	640	DEG F	SET LOG
TTXD1_15	999	DEG F	CTDA2	633	DEG F	ON/OFF
TTXD1_16	985	DEG F	HPA1	93.0	% H2	
TTXD1_17	984	DEG F	HPA2	89.9	% H2	
						SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
16 FEB 93 11:33:00	11.743	8.416	0.713	0.693	[illegible]

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:47:24 PAGE [illegible] THE [illegible] PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	52	DEG F	→ WQJ	8.515	#/SEC	NEXT
CTIF2	51	DEG F	WXC	0.718	RATIO	PAGE
CPD	155.7	PSIG	FSR	61.0	% FSR	
CTD	640	DEG F	WSQ	8.934	#/SEC	
S125P	66.05	V DC	BB1	0.10	IPS	INSERT
S125N	-64.74	V DC	BB2	0.10	IPS	ENTRY
LTTH1	124	DEG F	BB3	0.25	IPS	
FPG	3.47	V DC	BB4	0.10	IPS	
FTG	60	DEG F	BB5	0.14	IPS	DELETE
→ FQG	11.873	#/SEC	BB7	0.06	IPS	ENTRY
FPRG	197.5	PSIG	BB8	0.05	IPS	
FQT	11.871	#/SEC	BD9	0.07	IPS	
WSQ	8.934	#/SEC	CSGV	83.4	DEG	SET LOG
CTIM	52	DEG F	TIMR_01	42 991.4	HOURS	ON/OFF
WQJF_PR	233	RPM	S125N	-64.74	V DC	
WXC	0.704	RATIO	TTXD1_1	1000	DEG F	
						SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 11:47:34 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	969	DEG F	TTXD1_18	984	DEG F
TTXD1_3	978	DEG F	TTXC	994	DEG F
TTXD1_4	1026	DEG F	TNH	100.0	% SPD
TTXD1_5	994	DEG F	TNR	103.9	% SPD
TTXD1_6	990	DEG F	DW	79.68	MW
TTXD1_7	993	DEG F	FDG1	30.00	INH2O
TTXD1_8	997	DEG F	FDG2	80.3	INH2O
TTXD1_9	996	DEG F	LTTH1	122	DEG F
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F
TTXD1_11	998	DEG F	TTXSP1	60	DEG F
TTXD1_12	988	DEG F	TTXSP2	54	DEG F
TTXD1_13	976	DEG F	TTXSP3	50	DEG F
TTXD1_14	1017	DEG F	CTDA1	640	DEG F
TTXD1_15	1005	DEG F	CTDA2	633	DEG F
TTXD1_16	981	DEG F	HFA1	93.0	% H2
TTXD1_17	981	DEG F	HFA2	89.9	% H2

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

FQG = 11.831
WQJ = 8.535
DW = 79.31

Unit 2 - Gas 2/16/93 End Run #1

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:06:18 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	8.644	#/SEC
CTIF2	56	DEG F	WXC	0.726	RATIO
CPD	155.7	PSIG	FSR	60.8	% FSR
[illegible]	641	DEG F	WSQ	10.161	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.66	V DC	BB2	0.10	IPS
LTTH1	124	DEG F	BB3	0.24	IPS
FPG	3.48	V DC	BB4	0.10	IPS
FTG	60	DEG F	BB5	0.14	IPS
FQG	11.877	#/SEC	BB7	0.05	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.876	#/SEC	BB9	0.06	IPS
WSQ	10.161	#/SEC	CSGV	83.4	DEG
CTIM	53	DEG F	TIMR_01	42 991.7	HOURS
WQJF_PR	239	RPM	S125N	-64.66	V DC
WXC	0.703	RATIO	TTXD1_1	997	DEG F

NEXT PAGE

INSERT ENTRY

DELETE ENTRY

SET LOG ON/OFF

SET TIME ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:06:26 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS

TTXD1_4	1026	DEG F	TNH	100.0	% SPD	
TTXD1_5	992	DEG F	TNR	103.9	% SPD	
TTXD1_6	993	DEG F	DW	78.93	MW	INSERT
TTXD1_7	992	DEG F	FDG1	80.00	INH2O	ENTRY
TTXD1_8	997	DEG F	FDG2	80.0	INH2O	
TTXD1_9	997	DEG F	LTTH1	123	DEG F	
TTXD1_10	1029	DEG F	TTXSPL	126	DEG F	DELETE
TTXD1_11	998	DEG F	TTXSP1	63	DEG F	ENTRY
TTXD1_12	987	DEG F	TTXSP2	58	DEG F	
TTXD1_13	972	DEG F	TTXSP3	56	DEG F	
TTXD1_14	1016	DEG F	CTDA1	641	DEG F	SET LOG
TTXD1_15	1003	DEG F	CTDA2	634	DEG F	ON/OFF
TTXD1_16	981	DEG F	HPA1	93.0	% H2	
TTXD1_17	981	DEG F	HPA2	90.0	% H2	
						SET TIME
						ON/OFF

LOG PERIOD = 0480 MINUTES

Unit 2-Gas
2/16/93 Begin Run #2

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:15:18 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	52	DEG F	→ WGJ	8.644	#/SEC	NEXT
CTIF2	53	DEG F	WXJ	0.722	RATIO	PAGE
CPD	155.9	PSIG	FSR	61.2	% FSR	
CTD	640	DEG F	WSQ	10.478	#/SEC	
S125P	65.83	V DC	BB1	0.10	IPS	INSERT
S125N	-64.95	V DC	BB2	0.10	IPS	ENTRY
LTTH1	124	DEG F	BB3	0.25	IPS	
FPG	3.47	V DC	BB4	0.09	IPS	
FTG	60	DEG F	BB5	0.13	IPS	DELETE
→ FQG	11.951	#/SEC	BB7	0.05	IPS	ENTRY
FPRG	197.4	PSIG	BB8	0.05	IPS	
FQT	11.932	#/SEC	BB9	0.07	IPS	
WSQ	10.478	#/SEC	CSGV	83.4	DEG	SET LOG
CTIM	53	DEG F	TIMR_01	42 991.7	HOURS	ON/OFF
WGJF_PR	238	RPM	S125N	-64.95	V DC	
WXC	0.707	RATIO	TTXD1_1	999	DEG F	
						SET TIME
						ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:15:28 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
TTXD1_2	975	DEG F	TTXD1_18	990	DEG F	NEXT
TTXD1_3	974	DEG F	TTXC	994	DEG F	PAGE
TTXD1_4	1023	DEG F	TNH	100.0	% SPD	
TTXD1_5	1000	DEG F	TNR	103.9	% SPD	
TTXD1_6	991	DEG F	→ DW	79.00	MW	INSERT
TTXD1_7	994	DEG F	FDG1	80.00	INH2O	ENTRY
TTXD1_8	994	DEG F	FDG2	80.2	INH2O	

TTXD1_11	998	DEG F	TTXSP1	62	DEG F	SET LOG
TTXD1_12	987	DEG F	TTXSP2	54	DEG F	ON/OFF
TTXD1_13	973	DEG F	TTXSP3	53	DEG F	
TTXD1_14	1017	DEG F	CTDA1	640	DEG F	SET LOG
TTXD1_15	1002	DEG F	CTDA2	633	DEG F	ON/OFF
TTXD1_16	982	DEG F	HPA1	93.0	% H2	
TTXD1_17	982	DEG F	HPA2	90.1	% H2	
						SET TIME
						ON/OFF

LOG PERIOD = 0480 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:30:04 PAGE 00

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
CTIF1	52	DEG F	WQJ	8.664	#/SEC	NEXT
CTIF2	52	DEG F	WXJ	0.726	RATIO	PAGE
CPD	155.6	PSIG	FSR	61.2	% FSR	
CTD	640	DEG F	WSQ	10.478	#/SEC	
S125P	65.97	V DC	BB1	0.11	IPS	INSERT
S125N	-64.88	V DC	BB2	0.10	IPS	ENTRY
LTTH1	123	DEG F	BB3	0.25	IPS	
FPG	3.48	V DC	BB4	0.09	IPS	
FTG	60	DEG F	BB5	0.13	IPS	DELETE
FQG	11.909	#/SEC	BB7	0.08	IPS	ENTRY
FPRG	197.4	PSIG	BB8	0.05	IPS	
FQT	11.908	#/SEC	BB9	0.07	IPS	
WSQ	10.478	#/SEC	CSGV	85.3	DEG	SET LOG
CTIM	52	DEG F	TIMR_TX	-2 972.1	HOURS	ON/OFF
WQJF_PR	239	RPM	S125N	-64.88	V DC	
WXC	0.705	RATIO	TTXD1_1	998	DEG F	
						SET TIME
						ON/OFF

LOG PERIOD = 0015 MINUTES

DATA LIST 12 DEMAND DISPLAY 16 FEB 93 12:30:11 PAGE 01

PREVIOUS PAGE

NAME	VALUE	UNITS	NAME	VALUE	UNITS	
TTXD1_2	969	DEG F	TTXD1_18	985	DEG F	NEXT
TTXD1_3	978	DEG F	TTXC	995	DEG F	PAGE
TTXD1_4	1028	DEG F	TNH	100.0	% SPD	
TTXD1_5	996	DEG F	TNR	100.0	% SPD	
TTXD1_6	994	DEG F	DW	79.25	MW	INSERT
TTXD1_7	993	DEG F	FDG1	30.00	INH2O	ENTRY
TTXD1_8	1000	DEG F	FDG2	30.8	INH2O	
TTXD1_9	999	DEG F	LTTH1	123	DEG F	
TTXD1_10	1031	DEG F	TTXSPL	126	DEG F	DELETE
TTXD1_11	999	DEG F	TTXSP1	62	DEG F	ENTRY
TTXD1_12	987	DEG F	TTXSP2	56	DEG F	
TTXD1_13	975	DEG F	TTXSP3	53	DEG F	
TTXD1_14	[illegible]	DEG F	CTDA1	640	DEG F	SET LOG
TTXD1_15	1006	DEG F	CTDA2	632	DEG F	ON/OFF
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

LOG PERIOD = 0015 MINUTES

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
16 FEB 93 12:33:00	11.880	8.604	0.724	0.703	[illegible]

DATA LIST 12 16 FEB 93 12:45:01 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	WQJ	8.604	#/SEC
CTIF2	52	DEG F	WXJ	0.726	RATIO
CPD	152.2	PSIG	FSR	60.9	% FSR
CTD	641	DEG F	WSQ	10.537	#/SEC
S125P	65.83	V DC	BB1	0.10	IPS
S125N	-64.95	V DC	BB2	0.10	IPS
LTTH1	123	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	60	DEG F	BB5	0.13	IPS
FQG	11.860	#/SEC	BB7	0.06	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.879	#/SEC	BB9	0.07	IPS
WSQ	10.537	#/SEC	CSGV	83.4	DEG
CTIM	52	DEG F	TIMR_01	42 992.4	HOURS
WQJF_PR	233	RPM	S125N	-64.95	V DC
WXC	0.703	RATIO	TTXD1_1	1000	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

DATA LIST 12 16 FEB 93 12:45:08 PAGE001

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	974	DEG F	TTXD1_18	991	DEG F
TTXD1_3	974	DEG F	TTXC	995	DEG F
TTXD1_4	1025	DEG F	TNH	100.0	% SPD
TTXD1_5	1003	DEG F	TNR	103.9	% SPD
TTXD1_6	992	DEG F	GW	78.68	MW
TTXD1_7	996	DEG F	FDG1	30.00	INH20
TTXD1_8	993	DEG F	FDG2	80.1	INH20
TTXD1_9	997	DEG F	LTTH1	123	DEG F
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F
TTXD1_11	997	DEG F	TTXSP1	56	DEG F
TTXD1_12	990	DEG F	TTXSP2	54	DEG F
TTXD1_13	973	DEG F	TTXSP3	53	DEG F
TTXD1_14	1015	DEG F	CTDA1	641	DEG F
TTXD1_15	1001	DEG F	CTDA2	634	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 11.907
WQJ = 8.637
DW = 78.98

Unit 2 - Gas 2/16/93 End Run#2

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	WQJ	8.674	#/SEC
CTIF2	52	DEG F	WXJ	0.721	RATIO
CPD	155.5	PSIG	FSR	61.3	% FSR
CTD	641	DEG F	WSQ	10.500	#/SEC
S125P	66.05	V DC	BB1	0.10	IPS
S125N	-64.74	V DC	BB2	0.10	IPS
LTTH1	124	DEG F	BB3	0.24	IPS
FPG	3.47	V DC	BB4	0.09	IPS
FTG	60	DEG F	BB5	0.13	IPS
FQG	11.934	#/SEC	BB7	0.05	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.921	#/SEC	BB9	0.07	IPS
WSQ	10.500	#/SEC	CSGV	80.4	DEG
CTIM	52	DEG F	TIMR_01	42 992.6	HOURS
WQJF_PR	239	RPM	S125N	-64.74	V DC
WXC	0.703	RATIO	TTXD1_1	1000	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	978	DEG F	TTXD1_18	997	DEG F
TTXD1_3	975	DEG F	TTXC	996	DEG F
TTXD1_4	1025	DEG F	TNH	100.0	% SPD
TTXD1_5	1000	DEG F	TNR	103.9	% SPD
TTXD1_6	994	DEG F	DW	79.19	MW
TTXD1_7	994	DEG F	FDG1	30.00	INH2O
TTXD1_8	1000	DEG F	FDG2	31.[illegible]	INH2O
TTXD1_9	997	DEG F	LTTH1	124	DEG F
TTXD1_10	1030	DEG F	TTXSPL	126	DEG F
TTXD1_11	998	DEG F	TTXSP1	55	DEG F
TTXD1_12	990	DEG F	TTXSP2	55	DEG F
TTXD1_13	974	DEG F	TTXSP3	55	DEG F
TTXD1_14	1016	DEG F	CTDA1	641	DEG F
TTXD1_15	1005	DEG F	CTDA2	633	DEG F
TTXD1_16	985	DEG F	HPA1	93.0	% MI
TTXD1_17	985	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

Unit 2 - Gas
2/16/93

Begin Run#3

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	WQJ	0.664	#/SEC
CTIF2	52	DEG F	WXJ	0.729	RATIO
CPD	155.4	PSIG	FSR	61.1	% FSR
CTD	642	DEG F	WSQ	10.161	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.10	IPS
LTTH1	122	DEG F	BB3	0.24	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	60	DEG F	BB5	0.13	IPS
FQG	11.883	#/SEC	BB7	0.05	IPS
FPRG	197.3	PSIG	BB8	0.05	IPS
FQT	11.889	#/SEC	BB9	0.07	IPS
WSQ	10.161	#/SEC	CSGV	83.4	DEG
CTIM	52	DEG F	TIMR_01	42 992.9	HOURS
WQJF_PR	237	RPM	S125N	-64.81	V DC
WXC	0.700	RATIO	TTXD1_1	998	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	966	DEG F	TTXD1_18	984	DEG F
TTXD1_3	978	DEG F	TTXC	995	DEG F
TTXD1_4	1028	DEG F	TNH	100.0	% SPD
TTXD1_5	994	DEG F	TNR	103.9	% SPD
TTXD1_6	994	DEG F	DW	79.03	MW
TTXD1_7	995	DEG F	FDG1	30.00	INH2O
TTXD1_8	997	DEG F	FDG2	79.9	INH2O
TTXD1_9	999	DEG F	LTTH1	122	DEG F
TTXD1_10	1033	DEG F	TTXSPL	126	DEG F
TTXD1_11	1000	DEG F	TTXSP1	66	DEG F
TTXD1_12	990	DEG F	TTXSP2	55	DEG F
TTXD1_13	978	DEG F	TTXSP3	54	DEG F
TTXD1_14	1020	DEG F	CTDA1	642	DEG F
TTXD1_15	1008	DEG F	CTDA2	633	DEG F
TTXD1_16	980	DEG F	HPA1	93.0	% H2
TTXD1_17	981	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	8.555	#/SEC
CTIF2	52	DEG F	WXJ	0.722	RATIO
CPD	155.1	PSIG	FSR	61.0	% FSR
CTD	641	DEG F	WSQ	8.916	#/SEC

FTG	68	DEG F	BB5	0.14	IPS
FGG	11.832	#/SEC	BB7	0.06	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	11.832	#/SEC	BB9	0.07	IPS
WSQ	8.916	#/SEC	CSGV	63.4	DEG
CTIM	53	DEG F	TIMR_01	42 993.1	HOURS
WQJF_PR	236	RPM	S125N	-64.81	V DC
WXC	0.698	RATIO	TTXD1_1	1000	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	975	DEG F	TTXD1_18	992	DEG F
TTXD1_3	974	DEG F	TTXC	995	DEG F
TTXD1_4	1024	DEG F	TNH	100.0	% SPD
TTXD1_5	1001	DEG F	TNR	103.9	% SPD
TTXD1_6	993	DEG F	DW	77.44	MW
TTXD1_7	994	DEG F	FDG1	30.00	INH2O
TTXD1_8	1000	DEG F	FDG2	79.7	INH2O
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1023	DEG F	TTXSPL	126	DEG F
TTXD1_11	996	DEG F	TTXSP1	54	DEG F
TTXD1_12	969	DEG F	TTXSP2	52	DEG F
TTXD1_13	973	DEG F	TTXSP3	51	DEG F
TTXD1_14	1016	DEG F	CTDA1	641	DEG F
TTXD1_15	1001	DEG F	CTDA2	633	DEG F
TTXD1_16	984	DEG F	HFA1	97.0	% MI
TTXD1_17	983	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

16 FEB 93 13:30:23.62 121 HYDROGEN PURITY TROUBLE ALARM

16 FEB 93 13:32:50.87 122 WATER VALVE LVDT TROUBLE ALARM

HOUR LOG ---------- ROLLING AVG ----------

TIME	GAS FUEL #/SEC	WATER #/SEC	ACTUAL RATIO	REQUIRED RATIO	AMBIENT DEG F
16 FEB 93 13:33:00	11.882	8.580	0.722	0.700	52

16 FEB 93 13:35:00.25 236 WATER TO FUEL RATIO LOW-4 MINUTE AVG ALARM

16 FEB 93 13:36:00.25 238 WATER TO FUEL RATIO LOW-4 MINUTE AVG NORMAL

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DEMAND DISPLAY

Do not use (Run stopped due to plant alarm)

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	6.414	#/SEC
CTIF2	53	DEG F	WXJ	0.594	RATIO
CPD	136.7	PSIG	FSR	56.1	% FSR
CTD	602	DEG F	WSQ	8.450	#/SEC
S125P	65.90	V DC	BB1	0.10	IPS
S125N	-64.81	V DC	BB2	0.10	IPS
LTTH1	123	DEG F	BB3	0.22	IPS
FPG	3.48	V DC	BB4	0.09	IPS
FTG	61	DEG F	BB5	0.12	IPS
FQG	10.771	#/SEC	BB7	0.07	IPS
FPRG	197.4	PSIG	BB8	0.05	IPS
FQT	10.779	#/SEC	BB9	0.08	IPS
WSQ	8.450	#/SEC	CSGV	66.6	DEG
CTIM	53	DEG F	TIMR_01	42 993.4	HOURS
WQJF_PR	177	RPM	S125N	-64.81	V DC
WXC	0.520	RATIO	TTXD1_1	1034	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

Do not use (Run stopped due to plant alarm)

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	993	DEG F	TTXD1_16	1006	DEG F
TTXD1_3	1006	DEG F	TTXC	1019	DEG F
TTXD1_4	1055	DEG F	TNH	100.0	% SPD
TTXD1_5	1033	DEG F	TNR	103.4	% SPD
TTXD1_6	1027	DEG F	DW	70.07	MW
TTXD1_7	1013	DEG F	FDG1	30.00	INH2O
TTXD1_8	1025	DEG F	FDG2	25.7	INH2O
TTXD1_9	1004	DEG F	LTTH1	123	DEG F
TTXD1_10	1046	DEG F	TTXSPL	320	DEG F
TTXD1_11	1022	DEG F	TTXSP1	63	DEG F
TTXD1_12	1006	DEG F	TTXSP2	60	DEG F
TTXD1_13	1001	DEG F	TTXSP3	55	DEG F
TTXD1_14	1055	DEG F	CTDA1	602	DEG F
TTXD1_15	995	DEG F	CTDA2	594	DEG F
TTXD1_16	1016	DEG F	HPA1	93.0	% HZ
TTXD1_17	1018	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

16 FEB 93 13:53:05.87 122 WATER VALVE LVDT TROUBLE NORMAL
16 FEB 93 13:53:05.87 123 WATER FLOW FEEDBACK TROUBLE NORMAL

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	52	DEG F	WQJ	8.923	#/SEC
CTIF2	52	DEG F	WXJ	0.749	RATIO
CPD	155.2	PSIG	FSR	61.2	% FSR
CTD	640	DEG F	WSQ	9.432	#/SEC
S125P	65.97	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	122	DEG F	BB3	0.23	IPS
FPS	3.48	V DC	BB4	0.10	IPS
FTG	61	DEG F	BB5	0.14	IPS
FQG	11.875	#/SEC	BB7	0.05	IPS
FPRG	197.5	PSIG	BB8	0.05	IPS
FQT	11.903	#/SEC	BB9	0.06	IPS
WSQ	9.432	#/SEC	CSGV	83.4	DEG
CTIM	52	DEG F	TIMR_01	42 993.6	HOURS
WQJF_PR	246	RPM	S125N	-64.81	V DC
WXC	0.718	RATIO	TTXD1_1	999	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	977	DEG F	TTXD1_18	991	DEG F
TTXD1_3	974	DEG F	TTXC	995	DEG F
TTXD1_4	1025	DEG F	TNH	100.0	% SPD
TTXD1_5	1001	DEG F	TNR	103.9	% SPD
TTXD1_6	998	DEG F	DW	79.12	MW
TTXD1_7	996	DEG F	FDG1	30.00	INH2O
TTXD1_8	999	DEG F	FDG2	30.3	INH2O
TTXD1_9	997	DEG F	LTTH1	122	DEG F
TTXD1_10	1027	DEG F	TTXSPL	126	DEG F
TTXD1_11	994	DEG F	TTXSP1	55	DEG F
TTXD1_12	988	DEG F	TTXSP2	51	DEG F
TTXD1_13	970	DEG F	TTXSP3	49	DEG F
TTXD1_14	1017	DEG F	CTDA1	640	DEG F
TTXD1_15	1004	DEG F	CTDA2	633	DEG F
TTXD1_16	986	DEG F	NPA1	92.9	% HZ
TTXD1_17	985	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

FQG = 11.863
WQJ = 8.714
DW = 78.52

Unit 2- Gas 2/16/93 End Run #3

DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	8.555	#/SEC
CTIF2	53	DEG F	WXJ	0.728	RATIO
CPD	154.7	PSIG	FSR	60.7	% FSR
CTD	641	DEG F	WSQ	9.327	#/SEC
S125P	66.05	V DC	BB1	0.11	IPS
S125N	-64.81	V DC	BB2	0.11	IPS
LTTH1	124	DEG F	BB3	0.25	IPS
FPG	3.48	V DC	BB4	0.10	IPS
FTG	63	DEG F	BB5	0.14	IPS
FQG	11.786	#/SEC	BB7	0.05	IPS
FPRG	177.4	PSIG	BB8	0.05	IPS
FQT	11.766	#/SEC	BB9	0.06	IPS
WSQ	9.327	#/SEC	CSGV	83.3	DEG
CTIM	53	DEG F	TIMR_01	42 993.9	HOURS
WQJF_PR	235	RPM	S125N	-64.81	V DC
WXC	0.705	RATIO	TTXD1_1	999	DEG F

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
TTXD1_2	973	DEG F	TTXD1_18	988	DEG F
TTXD1_3	976	DEG F	TTXC	994	DEG F
TTXD1_4	1024	DEG F	TNH	100.0	% SPD
TTXD1_5	996	DEG F	TNR	103.9	% SPD
TTXD1_6	994	DEG F	DW	70.87	MW
TTXD1_7	994	DEG F	FDG1	30.00	INH2O
TTXD1_8	999	DEG F	FDG2	79.1	INH2O
TTXD1_9	996	DEG F	LTTH1	124	DEG F
TTXD1_10	1031	DEG F	TTXSPL	126	DEG F
TTXD1_11	999	DEG F	TTXSP1	58	DEG F
TTXD1_12	988	DEG F	TTXSP2	56	DEG F
TTXD1_13	977	DEG F	TTXSP3	54	DEG F
TTXD1_14	1018	DEG F	CTDA1	641	DEG F
TTXD1_15	1001	DEG F	CTDA2	633	DEG F
TTXD1_16	980	DEG F	HPA1	92.9	% H2
TTXD1_17	981	DEG F			

REMOTE LINK HEALTHY

LOG PERIOD = 0015 MINUTES

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DEMAND DISPLAY

NAME	VALUE	UNITS	NAME	VALUE	UNITS
CTIF1	53	DEG F	WQJ	8.276	#/SEC
CTIF2	53	DEG F	WXJ	0.710	RATIO
CPD	154.4	PSIG	FSR	60.5	% FSR
CTD	641	DEG F	WSQ	9.155	#/SEC