

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

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

AP32 Section:	12.5.1
Background Chapter	3
Reference:	35
Title:	Air Emissions Test Report - Brandt Baghouse - Newport Steel Corporation, Newport, KY. Prepared for: Newport Steel Corporation, Newport, KY. PN 050101.0011. Prepared by: Environmental Quality Management, Inc. September 2000.



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COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

DIVISION FOR AIR QUALITY
803 SCHENKEL LN
FRANKFORT KY 40601-1403

October 23, 2000

Ms. Jennifer A. McDaniel
Manager, Environmental and
Safety Compliance
Newport Steel
Ninth & Lowell Streets, P.O. Box 1670
Newport, Kentucky 41072

Dear Ms. McDaniel:

On August 15 and 16, 2000, particulate, carbon monoxide, VOC, lead, NO_x, and SO₂ compliance tests were performed on the Electric Arc Furnace Brandt Baghouse at your Newport facility. FBT Testing and Environmental Services, Inc performed the testing. John Allen and John Jayne observed testing for the Division for Air Quality. Proper test methods were followed, and the test report was checked for completeness and accuracy. The results are summarized below.

PARAMETER	TEST RESULTS	PERMIT LIMIT
Particulate	0.00089 gr/dscf	0.0052 gr/dscf
Sulfur Dioxide	0.013 lb/hr	
Nitrogen Oxides (as NO ₂)	0.63lb/ton of steel	0.51 lb/ton of steel
Carbon Monoxide	251.3 lb/hr	
Lead	0.021 lb/hr	1.71 lb/hr

Therefore, this test report is accepted as proof of compliance for particulate, and lead. Nitrogen oxide emissions were above the permit level of 0.51 lbs/ton of steel produced. There is not a separate compliance limit for carbon monoxide and sulfur dioxide from the Brandt Baghouse. A copy of this letter is being sent to the Florence Regional Office for review. If you have any questions, please contact me at (502) 573-3382.

Sincerely,

Gerald Slucher, Supervisor
Source Testing Section
Technical Services Branch

GHS

cc: Edd Frazier
W. A. Clements
Florence Regional Office
Pat Johnston



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bcc: File: ID# 21-037-00006

NEWPORT STEEL

Facility Newport Steel
 Source Type Brandt Baghouse
 Performed By FBT Reg. by John Allen Rvwed. By Slucher
 Date Performed 8/15/00 Received 10/13/00 Reviewed 10/19/00
 =====
 PARTICULATE

	Run #1	Run #2	Run #3
Cp	0.84	0.84	0.84
Theta, min.	180	180	180
As, ft2	176.7	176.7	176.7
Ts, degF	167	190	197
Ps, in. Hg.	28.92	29.43	29.43
DELPSqrt	1.19	1.118	1.1458
Gamma	1.001	1.001	1.001
Tm, degF	96	81	89
Pbar, in. Hg.	29.2	29.68	29.68
Vlc, ml.	60.3	47.2	63.4
Vm, ft3.	121.805	120.239	120.635
DELH, in. H2O	1.4	1.4	1.4
CO2%	0.1	0.1	0.1
O2%	20.6	20.7	20.6
CO%	0	0	0
N2%	79.3	79.2	79.3
Vwstd, ft3	2.84013	2.22312	2.98614
Vmstd, ft3.	162.524936	153.197422	157.523896
Bws	0.01717491	0.0143039	0.01860407
Md	28.84	28.844	28.84
Ms	28.653824	28.6888885	28.6383319
vs1, ft/sec	74.3335538	70.4435271	72.6469049
Q1std, dscf/hr.	37826992.7	35291569.4	35850580.9

GASEOUS EMISSIONS

	Run #1	Run #2	Run #3

CARBON MONOXIDE			
Mol. Wt.	28.01		
ppm	100.3	89.4	115.1
lb/scf	7.28818E-06	6.4961E-06	8.3636E-06
lb/hr	275.6901151	229.259287	299.840275
NITROGEN OXIDES			
Mol. Wt.	46.01	46.01	46.01
ppm	3.3	2.7	4.2
lb/scf	3.94006E-07	3.2237E-07	5.0146E-07

NEWPORT STEEL

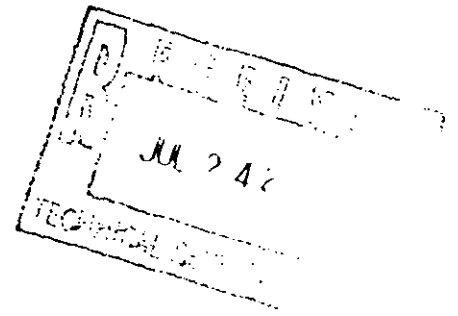
lb/hr	14.90407448	11.3769014	17.9777255
SULFUR DIOXIDE			
Mol. Wt.	64.06	64.06	64.06
ppm	0.68	0.88	0.8
lb/scf	1.13049E-07	1.463E-07	1.33E-07
lb/hr	4.276297154	5.16310304	4.69373004
Average lb/hr:			
CO	268.2632255		
NOx	14.75290044		
Sulfur Dioxide	4.71104341		



Oil Country Tubular Goods
Line Pipe - Piling

July 14, 2000

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, KY 40601-1403
Attn: Mr. Gerald Slucher



Re: Newport Steel Corporation (I.D.# 21-037-00006) Schedule for Stack Test

Dear Mr. Slucher,

This letter is to confirm our telephone conversation on 7/5/00 with myself and Thom Golatzki regarding the scheduling of our compliance testing. We have scheduled a stack test on the Brandt Baghouse for August 14, 15 and 16, 2000. As we discussed, test protocol will be the same as previously approved by the division. Please find a copy of the protocol attached.

If you have any further questions, please feel free to contact me at 859/292-7236.

Sincerely,

Jennifer A. McDaniel
Manager, Environmental and
Safety Compliance

Cc: Thom Golatzki

**AIR EMISSIONS SOURCE TESTING PROTOCOL
COMPLIANCE SAMPLING PROGRAM
NEWPORT STEEL CORPORATION
NEWPORT, KENTUCKY**

Prepared for:

Newport Steel Corporation
P.O. Box 1670
Ninth & Lowell Streets
Newport, Kentucky 41072

PN 050101.0011

Prepared by:

Environmental Quality Management, Inc.
1310 Kemper Meadow Drive
Cincinnati, Ohio 45240

July 2000

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SECTION I
INTRODUCTION

Environmental Quality Management, Inc. (EQ) has been retained by Newport Steel Corporation to plan and conduct an air sampling program on the Brandt Positive Pressure Baghouse servicing the electric arc furnace (EAF) and the EAF building. Sampling is being performed in accordance with the requirements of operating Permit Number F-98-014. Table 1-1 presents the sampling efforts to be performed at the baghouse exhaust.

The test program is scheduled to be conducted August 15 and 16, 2000.

TABLE 1-1. SAMPLING REQUIREMENTS

Test Point No.	Test Point Name	Parameter Tested	Test Method
1	Brandt Baghouse Inlet	Flow ¹ O ₂ /CO ₂ Moisture SO ₂ NO _x CO	EPA Method 1 for Velocity EPA Method 2 for Temperature EPA Method 3 EPA Method 4 EPA Method 6 EPA Method 7E EPA Method 10
2	Brandt Baghouse Outlet	PM Lead Visible Emissions	EPA Method 5D EPA Method 12 EPA Method 9

¹ Velocity profiles will be conducted at the inlet before and after each outlet Method 5D sample. Inlet velocity data will be used to calculate the outlet sample rate.

The plant contact is:

Ms. Jennifer McDaniel
Environmental Manager
Newport Steel Corporation
P.O. Box 1670
Newport, Kentucky 41070
(606) 292-7236

The EQ contacts are:

Mr. Tom Gerstle or Mr. Fred Hall
Environmental Quality Management, Inc.
1310 Kemper Meadow Drive, Suite 100
Cincinnati, Ohio 45240
(513) 825-7500
tgerstle@eqm.com
fhall@eqm.com

SECTION 2

SAMPLING AND ANALYTICAL PROCEDURES

The sampling and analytical procedures to be used in this test program conform to EPA Reference Methods 1-4, 5D, 6, 7E, 9, and 10 as published in the Federal Register. A brief description of each method follows:

LOCATION OF MEASUREMENT SITES

EPA Method 1, "Sample Velocity Traverses for Stationary Sources," will be used to select representative measurement sites. Exact measurements will be made on site and will meet the requirements of EPA Method 1. Selection of cells to be sampled and location of sampling points within the baghouse and at the baghouse inlet will follow guidelines in EPA Method 5D.

STACK GAS VOLUMETRIC FLOW RATE

EPA Method 2, "Determination of Stack Gas Velocity and Volumetric Flow Rates," will be used at each location to determine stack gas volumetric flow rates at the baghouse inlet. Standard and Type "S" pitot tubes, meeting the EPA specifications, and an inclined manometer will be used to measure velocity pressures. A calibrated Type "K" thermocouple, attached directly to the pitot tube, will be used to measure stack gas temperature. The stack gas velocity will be calculated from the average square root of the stack gas velocity pressure, average stack gas temperature, stack gas molecular weight, and absolute static pressure. The volumetric flow rate is the product of velocity and stack cross-sectional area.

STACK GAS DRY MOLECULAR WEIGHT

EPA Reference Method 3, "Gas Analysis for the Determination of Dry Molecular Weight," will be used to determine stack gas dry molecular weight. Bag samples will be collected and analyzed for each measurement run using Orsat combustion gas analyzers which read 0.1 percent concentrations of carbon dioxide and oxygen.

STACK GAS MOISTURE CONTENT

EPA Reference Method 4, "Determination of Moisture Content in Stack Gases," will be used to determine stack gas moisture content. This method will be conducted as part of each particulate measurement run. The initial and final contents of all impingers will be determined gravimetrically.

PARTICULATE MATTER

EPA Reference Method 5D, "Determination of Particulate Matter Emissions from Positive Pressure Fabric Filters," will be used to determine the particulate matter concentration and mass emission rates. The sample train will consist of a glass nozzle, glass probe and filter holder, glass fiber filter, and a series of impingers followed by a vacuum pump, dry gas meter, and calibrated orifice. The particulate sample will be withdrawn isokinetically and collected on the filter. Thermocouples will be used to monitor temperatures of the stack gas and impinger exit gas. A schematic of the sample train is shown in Figure 2-1.

Exhaust from the Brandt Baghouse is routed through 12 bag sections (cells). Following the guidelines presented in Method 5D, each sampling run will consist of six sample points per cell and four cells per test, for a total of 24 sample points per test run. At 10 minutes of sampling per point, this will result in a net sampling time of 4 hours per test run. After three test runs, all 12 of the cells will have been sampled. Each test run will be approximately 240 minutes in length, and will cover approximately three EAF heat cycles. Sampling point locations are detailed in Section 3. Determination of measurement sites, number and location of traverse points, and velocity determination will follow procedures in Method 5D. Isokinetic sampling rates will be calculated from the measurement of volumetric flow rates at each inlet, as specified in Method 5D.

VISIBLE EMISSION OBSERVATIONS

EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources" will be used to determine opacity from the baghouse exhaust as well as from the shop roof monitor. Observations will be conducted simultaneously with the particulate sampling runs.

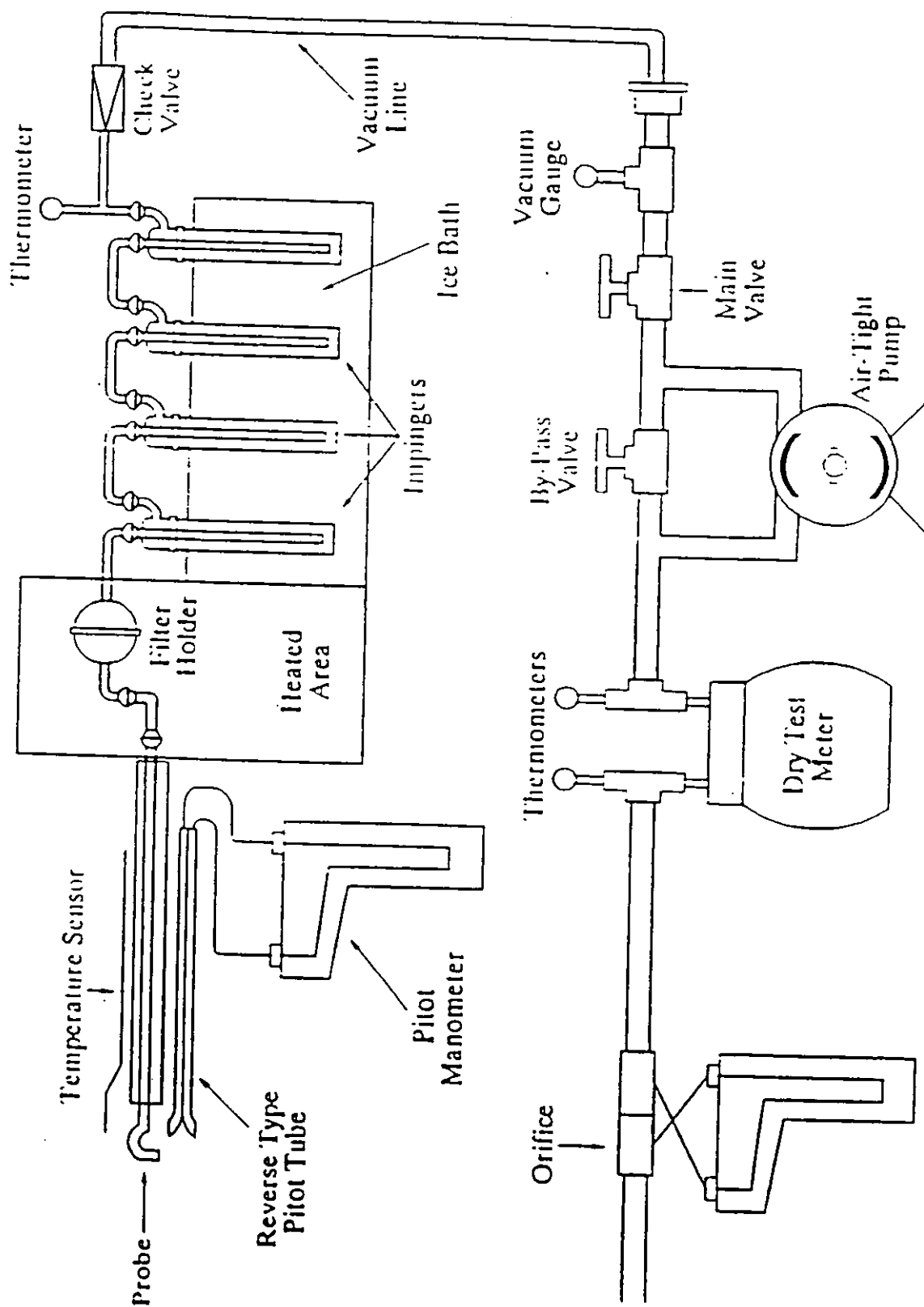


Figure 2-1. Schematic of EPA Method 5D Sampling Train - Baghouse Outlet

SO₂ EMISSIONS

The principles of EPA Method 6, "Determination of Sulfur Dioxide Emissions from Stationary Sources," will be used for this test program. The first impinger will contain 100 milliliters (ml) of an 80% isopropanol alcohol solution and the following two impingers of the impinger train will contain a 3% hydrogen peroxide solution. The large impingers in a Method 5 sampling train will be used in place of the midget impingers. A gas sample will be extracted from one sampling point in the stack. The sulfuric acid mist [including sulfur trioxide (SO₃)] and the SO₂ will be separated. A separate pump will be used to purge the sampling train. The SO₂ fraction will be analyzed by the barium-thorin titration method. The average of three 120-minute sampling runs will constitute the test.

LEAD EMISSIONS

The principles of EPA Method 12, "Determination of Inorganic Lead Emissions from Stationary Sources," will be used to measure lead emissions at the Brandt Baghouse. A gas sample will be withdrawn from the gas stream and collected on a glass-lined probe, on a glass-fiber filter, and in a series of glass impingers containing 0.1 N nitric acid. The Method 12 sample will be conducted utilizing the same train as the particulate sample. The impinger content volume will be measured after sampling to determine the moisture pickup. The average of three 240-minute sample runs constituted the test.

NO_x EMISSIONS

EPA Method 7E, "Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrument Analyzer Procedure)," will be used for this test program to determine NO_x emissions. A gas sample will be continuously extracted from the baghouse inlet duct and a portion of the sample conveyed to an NO_x analyzer. The analyzer will measure the NO_x concentration using the principles of chemiluminescence. The NO_x concentration will be recorded on a data logger once each minute. The average of the corresponding minute readings will be used to calculate the emissions for each sample run as nitrogen dioxides (NO₂).

CO EMISSIONS

The principles of EPA Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources," will be used for this program to determine CO emissions. A gas sample will be continuously extracted from the baghouse inlet duct using the same conveying system as the NO_x and VOC analyzer. The CO analyzer will measure the CO concentration using the principles of nondispersive infrared (NDIR) analysis. The sampling and data acquisition will be conducted simultaneously with and in the same manner as the NO_x sampling.

EAF AND BAGHOUSE OPERATION DATA

EAF and Brandt Baghouse operation data will include the following:

- EAF logs, including time and duration of each charge and tap, charge weights and tap weights, EAF Static Pressure Readings;
- Calculations of average hourly steel production rate for each test run;
- Charge carbon sample analyses (for sulfur content);
- Baghouse operations log;
- Baghouse pressure drops;
- Baghouse fan amperage and damper positions;
- LMF heat logs and calculation of LMF average hourly steel production rate.

SECTION 3

PROCESS DESCRIPTION/SAMPLING LOCATIONS

The processes operating in the Newport Steel Corporation Melt Shop are the electric arc furnace (EAF), ladle metallurgy furnace (LMF), and continuous slab caster. The structure containing the EAF is referred to as the EAF building and the structure containing the LMF and the Caster is referred to as the Main Melt Shop Building. The Brandt baghouse vents emissions from the EAF and the EAF building.

Figure 3-1 shows the process flow for the Newport electric arc furnace (EAF). The EAF is a batch process. Each process cycle consists of four distinct phases: charging, melting, slagging, and tapping. After the furnace is charged with scrap and other additives, the meltdown phase comprises the period from charging to the complete meltdown of the solid material. Melting is accomplished by the heat supplied by direct radiation from the arcs formed between the electrodes and the scrap metal, by direct radiation from the furnace lining, and electric resistance of the metal between arc paths. The EAF also has oxy-fuel burners to provide additional heat input to enhance scrap meltdown and oxygen/carbon lances to enhance meltdown, refining, and foamy slag practice.

When the melting phase is complete, chemistry and temperature samples are taken. Based on these samples, the steel composition is adjusted and when the proper steel temperature has been reached, the foamy slag is poured off the furnace. For tapping, the power is shut off, the electrodes are raised to clear the molten steel bath, and the molten steel is tapped into a ladle and transferred to the LMF. After steel tapping is completed, the melting cycle begins again (i.e., the charging phase begins).

The Brandt baghouse exhausts the electric arc furnace (EAF) and the EAF building by an exhaust system consisting of (1) a direct evacuation control (DEC), and (2) a roof canopy hood. The DEC - also called a "fourth hole" system or direct shell evacuation (DSE) - captures emissions generated during scrap meltdown while the EAF roof is in place directly from the

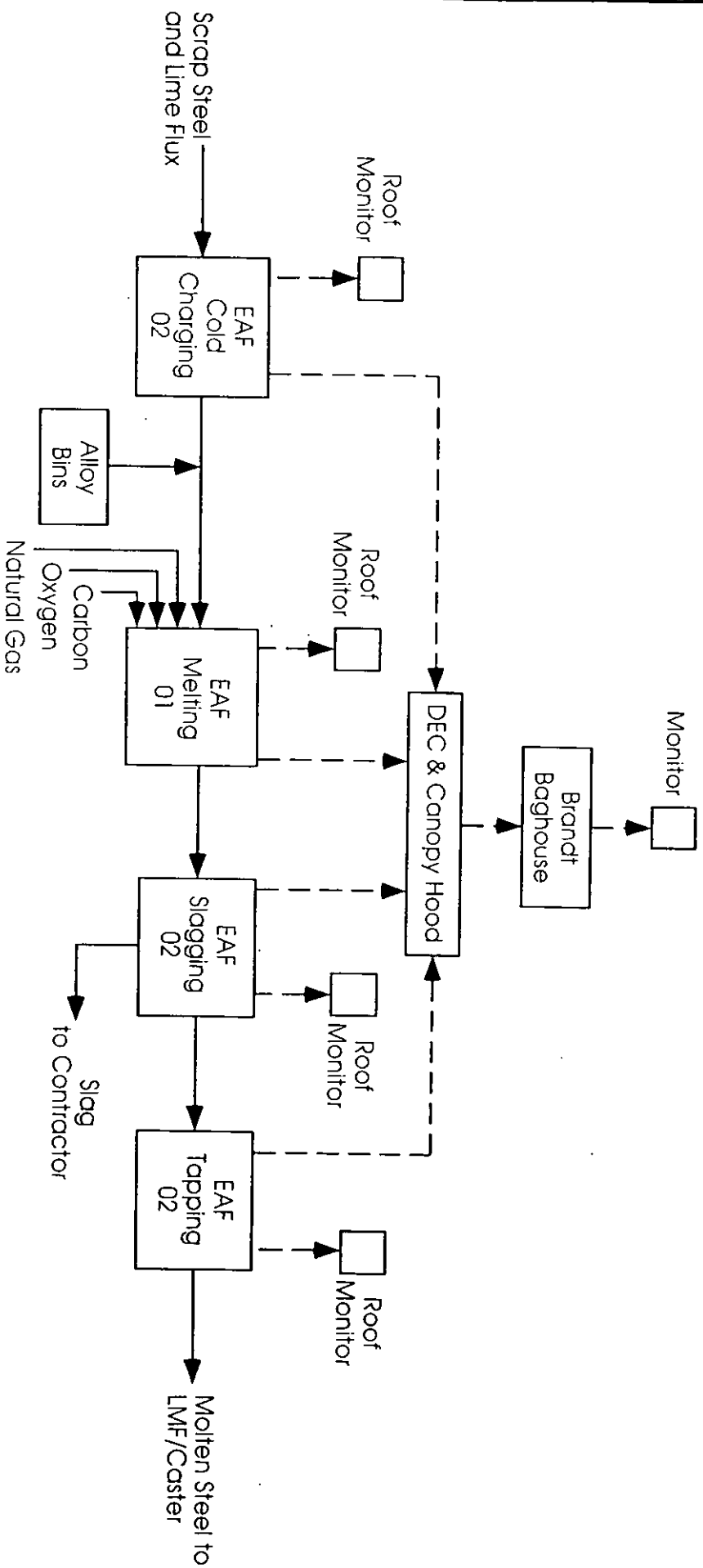


Figure 3-1. Process Flow Diagram
Melt Shop - Electric Arc Furnace (EAF)

— Material/Fuel Flow
- - - Emission Stream

Newport Steel, Inc.		EQ
Process Flow Diagram:		
Melt Shop - Electric Arc Furnace (EAF)		
Drawing No.:		
Scale: Not to Scale		
Drawn by: RJH	Revision: 0	
Checked by: FDH	Date: 2/9/98	

furnace vessel. The DEC is comprised of water-cooled ductwork to cool the hot EAF exhaust gases. Prior to the water-cooled section, a gap in the duct allows the entrainment of shop ambient air to assist in the combustion of carbon monoxide (CO) off-gases to carbon dioxide (CO₂). After passing sufficient distance to cool the exhaust, the DEC duct then merges with shop roof ductwork from the roof canopy hood. The overhead roof canopy hood collects fumes and gases that escape the furnace shell. The combined gas stream including EAF exhausts and melt shop ambient air is ducted to the Brandt baghouse.

Process information will be collected during the course of the sampling program and will include:

- A) Charge weights and materials, and tap weights and materials
- B) Heat times, including start and stop times, log of process operation including periods of no operation during testing
- C) Pressure drop across the baghouse, visual inspection of bags and control system fan amperes
- D) Fan/duct damper positions
- E) Fan amperes.

Data will be recorded at 15-minute intervals during testing.

SECTION 4

QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling quality assurance for this project includes the use of calibrated source sampling equipment, reference test methods, and traceability protocols for the recording and calculation of data. The analytical quality assurance includes use of validated analytical procedures, calibration of equipment, and analysis of control samples and blanks. The calibration and quality control procedures to be used for this test program are described in the following subsection.

CALIBRATION PROCEDURES AND FREQUENCY

All manual stack gas sampling equipment is calibrated before the test program in accordance with the procedures outlined in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume 111, EPA-600/4-72-027B. Summarized in Table 4-1 are the stack gas sampling equipment calibrations which will be performed in preparation for this project. The meter boxes will be re-calibrated after the test. Analyzer checks will be conducted directly to the instrument initially and then through the sampling system. Calibration checks will be conducted before and after each test run. EPA protocol gases will be used for calibrating the NO_x analyzer. The CO analyzer will be calibrated with Master Gas Certified calibration gases with a 2 percent accuracy.

Listed in Table 4-2 are the additional calibration checks which will be performed on the sampling equipment on site, just prior to the testing, to ensure that equipment was not damaged during transport.

TABLE 4-1. FIELD EQUIPMENT CALIBRATION SUMMARY*

Equipment	Calibrated Against	Allowable Error
Method 5 meter box	Reference test meter	Y $\pm$ 0.02Y Δ H @ $\pm$ 0.15 post-test Y $\pm$ 0.05 Y
Orsat	Certified cylinder gas	$\pm$ 0.5%
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	$\pm$ 1.5%
Impinger (or condenser thermometer)	ASTM-3F	$\pm$ 2°F
Dry gas thermometer	ASTM-3F	$\pm$ 5°F
Probe nozzles	Caliper	$\pm$ 0.004 in.
Barometer	NBS traceable barometer	$\pm$ 0.1 in. Hg

* As recommended in the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III. Stationary Source-Specific Methods. EPA-600/4-77-027b, August 1977.

TABLE 4-2. FIELD CHECKS OF SAMPLING EQUIPMENT

Equipment	Checked Against	Allowable Difference
Pitot tube	Inspection	No visible damage
Thermocouples	ASTM 2F or 3F	$\pm$ 1.5%
Probe Nozzles	Caliper	$\pm$ 0.004 in.

FIELD CHECKS OF CO AND NO_x ANALYZER

	Instrument Check	Acceptable Limit
Initial Calibration	CO & NO _x Calibration Error, % Span	$\pm$ 2%
	Sampling System Bias	< 5% of Span
Daily Calibration	CO & NO _x Calibration Error, % Span	$\pm$ 2%
	CO & NO, Drift, % Span	< 3 of Span

SECTION 5
PROJECT SCHEDULE

The following tentative schedule outlines the daily activities for this project. The order of sampling events may change based on production schedules.

SCHEDULE			
Day 1	August 14	Arrival at Plant / Safety Orientation / Set up equipment	
Day 2	August 15	Conduct 4-hour particulate sampling	2 Runs
Day 3	August 16	Conduct 4-hour particulate sampling	1 Run

SECTION 6
FINAL REPORT FORMAT

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	Stack Gas Dry Molecular Weight
	Stack Gas Moisture Content
	Particulate Concentration and Mass Emission Rates
SECTION 4	PROCESS DESCRIPTION/SAMPLING LOCATIONS
SECTION 5	QUALITY ASSURANCE/QUALITY CONTROL

APPENDICES

A	CALCULATIONS
B	RAW FIELD DATA
C	ANALYTICAL DATA
D	PROCESS DATA
E	QUALITY ASSURANCE/QUALITY CONTROL

APPENDIX A
COMPLIANCE TEST PROTOCOL FORMS

Commonwealth of Kentucky
Natural Resources & Environmental Protection
Department for Environmental Protection
Division for Air Quality

COMPLIANCE TEST PROTOCOL

I. CERTIFICATION	
I AM AUTHORIZED TO MAKE THIS SUBMISSION ON BEHALF OF THE OWNERS AND OPERATORS OF THE AFFECTED SOURCE OR AFFECTED UNITS FOR WHICH THIS SUBMISSION IS MADE. I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE STATEMENTS AND INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS AND CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THEY ARE TRUE, ACCURATE AND COMPLETE.	
SIGNATURE _____	
AFFILIATION AND TITLE _____	
II. SOURCE INFORMATION	
A. GENERAL INFORMATION	
PLANT NAME <u>Newport Steel</u>	PLANT FILE ID # <u>079-0520-0006</u>
ADDRESS <u>Route 8 South, Newport, KY 41072</u>	PERMIT ID # <u>F-98-014</u>
PLANT CONTACT <u>Jennifer McDaniel</u>	TELEPHONE # <u>(606) 292-7236</u>
AFFECTED FACILITIES TO BE TESTED: <u>1) Electric Arc Furnace (EAF) - Brandt Baghouse</u>	
TENTATIVE TEST DATE: <u>August 14-17, 2000</u>	
B. PROCESS INFORMATION	
MAXIMUM RATED CAPACITY: <u>EAF - 100 tons steel per hour</u>	
RATE TO BE RUN DURING TEST: <u>EAF - 90 tons steel per hour</u> (Permitted rate will be no more than 110% of average test rate)	
METHOD OF DETERMINING RATE <u>Monitoring of steel production during test; recordkeeping</u>	
NORMAL OPERATING CYCLES (e.g. 8 hr./day, soot blowing, etc.): <u>Average cycle time for EAF heat (batch) is 1.0 hour.</u>	
OPERATING CONDITIONS THAT TEND TO CAUSE "WORST CASE" POLLUTION EMISSIONS: <u>N/A</u>	
NORMAL MAINTENANCE SCHEDULE FOR EQUIPMENT AFFECTING EMISSIONS: <u>Regular baghouse and ductwork inspections routinely performed</u>	
INCLUDE A SIMPLIFIED PROCESS FLOW DIAGRAM	

COMPLIANCE TEST PROTOCOL CONTINUED

C. CONTROL EQUIPMENT DATA

TYPE AND MANUFACTURER OF ALL CONTROL EQUIPMENT:

Brandt Positive Pressure Baghouses

DATA TO BE MONITORED TO ENSURE REPRESENTATIVE OPERATION DURING TEST AND THEIR OPTIMUM VALUES:

Opacity, charge weights and materials, tap weights and materials; heat times (including start and stop times), log of process operations and static pressure inside the electric arc furnace. Control device operation log, including static pressure differentials and fan amperages.

OPERATIONAL CYCLES: Average EAF batch time is 1.0 hour.

CONTINUOUS MONITORS: N/A

NORMAL MAINTENANCE SCHEDULE ON CONTROL EQUIPMENT, AND THE LAST TIME THIS MAINTENANCE WAS PERFORMED:

Ongoing maintenance programs for baghouse

III SAMPLING DATA

TESTING FIRM NAME: Environmental Quality Management, Inc./PES, Inc.

ADDRESS: 1310 Kemper Meadow Drive, Cincinnati, Ohio 45240

PERSON TO CONTACT Tom Gerstle, Fred Hall, Dan Scheffel **TELEPHONE #** (513) 825-7500 (Fred and Tom); (513) 489-6611 (Dan)

LIST ALL AFFECTED FACILITIES TO BE SAMPLED AND GIVE THE INFORMATION REQUIRED BELOW:

Affected Facility	Pollutants	Total Time / Plant	No. of Tests (minimum of 3)	Test Methods to be Used
Electric Arc Furnace Brandt Baghouse	PM, NO _x , CO, SO ₂ , Pb	3.5-4 hours	3	5D, 6, 7E, 10, 12

INCLUDE A DIAGRAM OF THE SAMPLING LOCATION WITH DIMENSIONS, PORT LOCATIONS, NUMBER AND LOCATION OF TRAVERSE POINTS, DISTANCES FROM FLOW DISTURBANCES, AND ANY OTHER PHYSICAL OBSTACLES, IN OR AROUND THE STACK.

Electric Arc Furnace, Brandt Baghouse: Positive pressure baghouse. Methods 3, 4, and 5D will be performed inside baghouse (compartments). Particulate runs (front & back ½ will be analyzed for lead per Method 12. SO₂ will be measured by Method 6 at the inlet. Method 2 will be performed on the baghouse inlet duct. The inlet duct diameter is 15 feet. Test ports are located 150 feet downstream and 19 feet upstream from the nearest duct bend/diameter changes. Thus, a traverse of 24 points will be used for velocity since the test plane is 10 diameters downstream and 1.3 diameters upstream from the nearest flow disturbances. NO_x and CO will be sampled from a single point near the centroid of the inlet duct.

A. SAMPLING TRAIN INFORMATION

GIVE A DETAILED DESCRIPTION OF ANY SAMPLING OR SAMPLE RECOVERY AND TRANSPORT PROCEDURES WHICH DO NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JUSTIFICATION FOR DEVIATION.

LENGTH OF SAMPLING PROBE: Inlets - 12-17' Outlets - 3-4'

PROBE LINER MATERIAL OF CONSTRUCTION: Stainless Steel - Inlets; Glass Lined - Outlets

MANUFACTURER OF SAMPLING EQUIPMENT: Nutech - Meterbox, Sampling Train

AMOUNT OF CLEAN-UP OR ANALYSIS TO BE DONE ON-SITE: O₂/CO₂ by Fyrite, moisture by gravimetric/ volumetric, flows by calculation, continuous NO_x and CO analyzers

STACK TEMPERATURE 150°F (est) baghouse STACK % MOISTURE To be determined

STACK GAS VELOCITY 7-9 feet/sec - Brandt (est.)

STACK GAS COMPOSITION, INCLUDING APPROXIMATE CONCENTRATION OF ORGANICS

To be determined

FOR INSTRUMENTAL METHODS LIST EXPECTED CONCENTRATIONS, CONCENTRATIONS, INSTRUMENT SPANS, AND CAL GAS CONCENTRATIONS: No existing allowable gaseous pollutant

Concentrations. NO_x - 0 to 100, 500, and 1,000 ppm; NO_x - 0 ppm, 50 and 90 ppm, 250 and 490 ppm, 490 and 850 ppm (0%, 40-60% and 80-100% cal gas divider capability). CO - 0 to 1,000 ppm; CO - 0 ppm, 300 ppm, 600 ppm, and 890 ppm (0%, 30%, 60% cal gas divider capability)

COMPLIANCE TEST PROTOCOL CONTINUED

B. LABORATORY ANALYSIS

GIVE DETAILED DESCRIPTION OF ANY ANALYTICAL PROCEDURE AND/OR EQUIPMENT WHICH DOES NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JUSTIFICATION FOR DEVIATION.

HAVE YOU PARTICIPATED IN ANY EPA INTER-LAB SOURCE AUDITS IN THE LAST YEAR? No

IF SO, LIST THE TYPE OF AUDIT, THE DATE, AND THE RESULT _____

WHAT ARE YOUR CHAIN OF CUSTODY PROCEDURES AND METHOD OF DOCUMENTATION?

All changes of the person or organization having responsibility for custody of samples collected by EQ/PES are documented by the attached Chain of Custody form (COC). The project manager/test crew leader is charged with custody of all samples from the point of collection until release to a contractor laboratory. The project manager/test crew leader assures that all sample collection containers are labeled with the correct source location and run number before removal to the recovery area. At the recovery area all samples are placed in labeled containers for transportation either to EQ/PES laboratory or a contractor laboratory. The laboratory supervisor is responsible for assigning each sample a unique identification number. This number is recorded on the label affixed to the sample in the field and also recorded in the laboratory sample log book. The laboratory supervisor maintains a chain of custody forms file. If a sample must be released to a subcontractor laboratory this form documents that transfer of custody. COC's are included in final reports of all projects

ALL LABORATORY PROCEDURES SHALL HAVE PERTINENT QA DATA SUBMITTED WHETHER OR NOT THE WORK IS PERFORMED IN-HOUSE OR BY A THIRD PARTY.

C. DATA SHEETS

SUBMIT EXAMPLES OF ALL DATA SHEETS TO BE USED.

See attached example data sheets. Will use Rustrac Ranger Data Shuttle and PC with Pronto software to report NO_x and CO calibration, QA, and test data. Velocity, Fyrite, and moisture (Methods 2, 3, and 4) will be reported on PES Standard Field Data Sheets. See attached data sheets.

September 29, 2000

Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, KY 40601-1403
Attn: Mr. Gerald Slucher

Re: Stack Test Results for EAF Exhaust/Brandt Baghouse
Air Quality Permit (F-98-014)

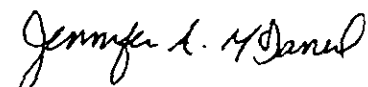
Dear Mr. Slucher,

Enclosed please find a copy of the, "Air Emissions Test Report -- Brandt Baghouse, Newport Steel Corporation, Newport, Kentucky."

The first three particulate test runs constitute a complete test as required by Newport Steel's Air Quality Permit (F-98-014) for Brandt Baghouse particulate emissions and described in the NSPS for Electric Arc Furnaces (40 CFR 60.275a). The fourth test run was optional and was terminated when operating problems occurred in the EAF. We believe that the particulate test results are representative of normal baghouse emissions. The NOx and CO data, however, are not representative because manual oxygen lancing was being performed during much of the test which resulted in lower than normal production and higher than normal NOx and CO emission factors on a pound of pollutant per ton of steel produced basis. A follow-up test for Nox, CO, and SO2 emissions is scheduled for next week, October 2 for setup and October 3 and 4 for testing.

If you have any further questions, please feel free to contact me at 859/292-7236.

Sincerely,
Newport Steel Corporation



Jennifer A. McDaniel
Manager, Environmental and
Safety Compliance

Cc: Thom Golatzki

NEWPORT STEEL

Facility Newport Steel
 Source Type Brandt Baghouse
 Performed By FBT
 Date Performed 8/15/00 Received 10/13/00 Reg. by John Allen Rvwed. By Slucher
 Reviewed 10/19/00
 =====

PARTICULATE

	Run #1	Run #2	Run #3
Cp	0.84	0.84	0.84
Theta,min.	240	240	240
Dn, in.	1.13	1.13	1.13
An,ft2.	0.00696441	0.00696441	0.00696441
As,ft2	187.68	187.68	187.68
Tsi,degF	134	125	184
Psi,in.Hg.	29.73	29.67	29.55
DELPSqrt	1.1238	1.1256	1.0661
Gamma	0.9931	0.9931	0.9931
Ts,degF	144	143	165
Tm,degF	98	115.4	93
Ps,in.Hg.	30.01	30.02	29.85
Pbar,in.Hg.	30.01	30.02	29.85
Vlc,ml.	109	93	78
Vm,ft3.	228.143	222.792	206.621
DELH,in.H2O	2.53	2.53	2.5
CO2%	0.3	0.43	0.34
O2%	20.6	20.68	20.43
CO%	0	0	0
N2%	79.1	78.89	79.23
Part.catch,mg	6.606	26.475	2.575
Vwstd,ft3	5.1339	4.3803	0.038
Vmstd,ft3.	216.278999	204.887252	196.585515
Bws	0.023187	0.02093158	0.00019326
Md	28.872	28.896	28.8716
Ms	28.619911	28.6679295	28.8694989
vs1,ft/sec	67.4287734	67.034702	66.5176832
Cs,g/dscf	3.0544E-05	0.00012922	1.3099E-05
Cs,gr/dscf	0.00047135	0.00199408	0.00020214
C,lb./dscf	6.7337E-08	2.8487E-07	2.8877E-08
Isokin. ratio	3.7364992	3.5452358	3.49921248
Q1std,dscf/hr.	39305790.7	39688600.8	36384480
E,Part,lb/hr	2.6467356	11.3061989	1.05068297
E, AVG, lb/hr	5.00120583		
Lead catch,mg	0.049	0.065	0.038
E, Lead lb/hr	0.01963216	0.02775837	0.01550522

NEWPORT STEEL

GASEOUS EMISSIONS

	Run #1	Run #2	Run #3

CARBON MONOXIDE			
Mol. Wt.	28.01	28.01	28.01
ppm	55.28	93.73	118.93
lb/scf	4.02023E-06	6.8165E-06	8.6492E-06
lb/hr	158.0184431	270.537587	314.695692
NITROGEN OXIDES			
Mol. Wt.	46.01	46.01	46.01
ppm	8.86	8.14	9.11
lb/scf	1.05785E-06	9.7188E-07	1.0877E-06
lb/hr	41.57952431	38.5726477	39.5752627
SULFUR DIOXIDE			
Mol. Wt.	64.06	64.06	64.06
ppm	0	0	0
lb/scf	0	0	0
lb/hr	0	0	0
Average lb/hr:			
CO	247.7505741		
NOx	39.9091449		
Sulfur Dioxide	0		

**AIR EMISSIONS TEST REPORT
BRANDT BAGHOUSE
NEWPORT STEEL CORPORATION
NEWPORT, KENTUCKY**

Prepared for:

Newport Steel Corporation
P.O. Box 1670
Ninth & Lowell Streets
Newport, Kentucky 41072

PN 050101.0011

Prepared by:

Environmental Quality Management, Inc.
1310 Kemper Meadow Drive
Cincinnati, Ohio 45240

September 2000

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SECTION 1

INTRODUCTION

On August 15 and 16, 2000 Environmental Quality Management, Inc. (EQ) and FBT Testing & Environmental Services (FBT) personnel conducted a compliance air emission program at Newport Steel Corporation. The air sampling program was performed on the Brandt Positive Pressure Baghouse servicing the electric arc furnace (EAF) and the EAF building. Sampling was performed in accordance with the requirements of operating Permit Number F-98-014 using EPA Reference Methods.. Table 1-1 presents the sampling conducted at the baghouse exhaust or the baghouse inlet.

TABLE 1-1. SAMPLING REQUIREMENTS

Test Point No.	Test Point Name	Parameter Tested	Test Method
1	Brandt Baghouse Inlet	Flow ¹ O ₂ /CO ₂ Moisture SO ₂ NO _x CO	EPA Method 1 for Velocity EPA Method 2 for Temperature EPA Method 3 EPA Method 4 EPA Method 6 EPA Method 7E EPA Method 10
2	Brandt Baghouse Outlet	PM Lead Visible Emissions	EPA Method 5D EPA Method 12 EPA Method 9

¹ Velocity profiles were conducted at the inlet before and after each outlet Method 5D sample. Inlet velocity data was be used to calculate the outlet sample rate.

Mr. Thom Golatzki of the NS Group, Ms. Jennifer McDaniel of Newport Steel, and Mr. Fred Hall of EQ monitored process operations for the purpose of testing. Mr. Tom Gerstle of EQ coordinated testing and process operations. Mr. John Jayne and Mr. John Allan of the Kentucky

Department of Environmental Protection observed process operations and sampling efforts.
Messrs. David Wetmore and Pete Hilty of FBT conducted sampling efforts.

SECTION 2

SUMMARY OF TEST RESULTS

Sampling of the Brandt baghouse was conducted on August 15 and 16, 2000. Three test runs, four to five hours in length, were conducted for velocity, moisture, O₂, and CO₂, particulate matter, SO₂, NO_x, CO, and lead. A fourth test run, for these same pollutants was aborted after 1 hour and 20 minutes due to EAF operating problems. Visible emission observations were also conducted at the baghouse and melt shop exhausts. Sampling was conducted following EPA Reference Methods 1-4, 5D, 6, 7E, 9, 10, and 12 (Table 1-1).

Table 2-1 summarizes the stack gas conditions measured for the three full sample periods at the inlet. Stack gas velocities averaged 67.2 feet per second (fps) at 148° F and 2.7 percent moisture. Stack gas composition averaged 0.4 percent CO₂ and 20.6 percent O₂. Volumetric flow rates averaged 775,735 actual cubic feet per minute (acfm) or 650,596 dry standard cubic feet minute (dscfm). Measurements were consistent for the three test runs.

**TABLE 2-1. SUMMARY OF STACK GAS CONDITIONS FOR
EAF EXHAUST/BRANDT BAGHOUSE INLET**

Run #	Date/Time	Exhaust Velocity (fps) ^a	Flow Rate		Exhaust Temp. ° F	H ₂ O %	O ₂ %	CO ₂ %
			(acfm) ^b	(dscfm) ^c				
1	8/15/00	67.6	790,454	675,327	134	3.0	20.6	0.3
2	8/15/00	67.2	785,137	681,273	125	3.0	20.6	0.5
3	8/16/00	66.7	751,613	595,188	184	2.2	20.7	0.5
Average		67.2	775,735	650,596	148	2.7	20.6	0.4

^a Velocity in feet per second

^b Stack gas volumetric flow rate in actual cubic feet per minute

^c Stack gas volumetric flow rate in dry standard cubic feet minute

Tables 2-2a and 2-2b summarize the pollutant concentrations and mass emission rates for Runs 1 to 3. The filterable particulate concentration averaged 0.00084 grains per dry standard cubic foot (gr/dscf), with an average mass emission rate of 5.45 pounds per hour (lb/hr). The NO_x (as NO₂) concentration averaged 8.7 ppm with an average mass emission rate of 35.7 lb/hr. The CO concentration averaged 89 ppm with an average mass emission rate of 251 lb/hr.

TABLE 2-2a. SUMMARY OF EAF NO_x AND CO EMISSIONS

Run #	Date/Time	NO _x as NO ₂		CO	
		ppm ^a	(lb/hr) ^b	ppm ^a	(lb/hr) ^b
1	8/15/00 0814-1214	8.9	27.77	55	161.7
2	8/15/00 1532-1754	8.1	39.40	94	276.1
3	08/16/00 1355 - 1755	9.1	39.81	119	316.2
Average		8.7	35.66	89	251.3

^a Concentration in parts per million

^b Emission rate in pounds per hour

TABLE 2-2b. SUMMARY OF PM/SULFUR DIOXIDE/LEAD EMISSIONS

Run #	Date/Time	PM Concentration		PM Emission Rate (lb/hr) ^c	Sulfur Dioxide		Lead Concentration		Er (lb/hr) ^c
		(gr/dscf) ^a	(lb/dscf) ^b		Cs (ppm) ^d	Er(lb/hr)	(gr/dscf) ^a	(lb/dscf) ^b	
1	8/15/00 0414-1300	4.70E-04	6.91E-08	2.862	0.0	0.0	3.49E-06	4.98382E-10	204E-02
2	8/15/00 1345-1828	1.98E-03	295E-07	12.326	0.0	0.0	4.86E-06	6.95197E-10	290E-02
3	8/16/00 0754-1214	2.01E-04	2.98E-08	1.205	0.0	0.04	2.96E-06	4.22966E-10	1.71E-02
Average		8.84E-4	1.32E-7	5.45	0.0	0.013	3.77E-06	5.38848E-10	2.22E-02

^a Concentration in grains per dry standard cubic foot

^b Concentration in pounds per dry standard cubic foot

^c Emission rate in pounds per hour

^d Concentration in parts per million

Table 2-3 summarizes the melt shop production during the three test runs along with the calculated emission factors for NO_x, CO, SO₂, and lead (Pb). The emission factors for NO_x

ranged from 0.465 to 0.728 lb/ton produced with an average of 0.562 lb/NO_x/ton steel. The calculated emission factors for CO ranged from 2.71 to 5.10 lb/ton with an average of 3.96 lb CO/ton steel produced. The emission factors for SO₂ and Pb averaged 0.0 lb SO₂/ton steel produced and 0.0003 lb Pb/ton steel produced, respectively.

TABLE 2-3. EMISSION FACTORS BASED ON BRANDT BAGHOUSE STACK TEST

Date	Steel Production, Tons/Hr	Emissions, lb/hr				Emission Factors, lb/ton steel			
		NO _x	CO	SO ₂	Pb	NO _x	CO	SO ₂	Pb
Test 1	59.7	27.77	161.7	0.00	0.0204	0.465	2.709	0.000	0.0003
Test 2	54.1	39.40	276.1	0.00	0.0290	0.728	5.104	0.000	0.0005
Test 3	76.7	39.81	316.2	0.04	0.0171	0.519	4.123	0.001	0.0002
Average	63.5	35.66	251.3	0.013	0.0222	0.562	3.958	0.000	0.0003

Table 2-4a and 2-4b presents the test results comparing the NO_x and CO concentrations measured by the EPA Reference Methods (RM) 7E and 10, respectively, and the NO_x and CO concentrations concurrently measured by the CEMs.

EPA Reference Method 9, "Visible Determination of the Opacity of Emissions from Stationary Sources" was used to determine opacity from the baghouse exhaust as well as from the shop roof monitor. Observations were conducted simultaneously at each source in conjunction with the particulate sampling runs. The observations were recorded separately for the baghouse exhaust and melt shop roof monitor. The baghouse observation data are provided in Table 2-5. The melt shop observation data is provided in Table 2-6. Both tables also present the rolling 6 minute averages.

The data are presented as a comparison in relative concentration. The RM CO and NO_x data were collected at the Brandt baghouse inlet duct. The CEM CO and NO_x data were collected at the baghouse roof monitor, downstream of the bags.

TABLE 2-4a. DATA COMPARISON - CO (ppm)

Run #	Date	Time	Values	
			RM	CEMS
1	08/15/00	0814-1300	55.28	59.51
2	08/15/00	1345-1659	93.73	114.90
3	08/16/00	0754-1214	118.93	142.77
4	08/16/00	1309-1509	96.00	85.87
Averages:			90.99	100.76

RM - Data collected at baghouse inlet using EPA Reference Method 10.
CEMS - Continuous emission monitoring data collected at the baghouse exhaust.

TABLE 2-4b. DATA COMPARISON - NO_x (ppm)

Run #	Date	Time	Values	
			RM	CEMS
1	08/15/00	0814-1300	8.86	10.67
2	08/16/00	1345-1659	8.14	9.83
3	08/16/00	0754-1214	9.11	6.85
4	08/16/00	1309-1509	10.30	11.06
Averages:			9.10	9.60

RM - Data collected at baghouse inlet using EPA Reference Method 7E.
CEMS - Continuous emission monitoring data collected at the baghouse exhaust.

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:15:00	0		13:55:00	0		7:55:00	0		12:40:00	0	
8:15:15	0		13:55:15	0		7:55:15	0		12:40:15	0	
8:15:30	0		13:55:30	0		7:55:30	0		12:40:30	0	
8:15:45	0		13:55:45	0		7:55:45	0		12:40:45	0	
8:16:00	0		13:56:00	0		7:56:00	0		12:41:00	0	
8:16:15	0		13:56:15	0		7:56:15	0		12:41:15	0	
8:16:30	0		13:56:30	0		7:56:30	0		12:41:30	0	
8:16:45	0		13:56:45	0		7:56:45	0		12:41:45	0	
8:17:00	0		13:57:00	0		7:57:00	0		12:42:00	0	
8:17:15	0		13:57:15	0		7:57:15	0		12:42:15	0	
8:17:30	0		13:57:30	0		7:57:30	0		12:42:30	0	
8:17:45	0		13:57:45	0		7:57:45	0		12:42:45	0	
8:18:00	0		13:58:00	0		7:58:00	0		12:43:00	0	
8:18:15	0		13:58:15	0		7:58:15	0		12:43:15	0	
8:18:30	0		13:58:30	0		7:58:30	0		12:43:30	0	
8:18:45	0		13:58:45	0		7:58:45	0		12:43:45	0	
8:19:00	0		13:59:00	0		7:59:00	0		12:44:00	0	
8:19:15	0		13:59:15	0		7:59:15	0		12:44:15	0	
8:19:30	0		13:59:30	0		7:59:30	0		12:44:30	0	
8:19:45	0		13:59:45	0		7:59:45	0		12:44:45	0	
8:20:00	0		14:00:00	0		8:00:00	0		12:45:00	0	
8:20:15	0		14:00:15	0		8:00:15	0		12:45:15	0	
8:20:30	0		14:00:30	0		8:00:30	0		12:45:30	0	
8:20:45	0	0.00	14:00:45	0	0.00	8:00:45	0	0.00	12:45:45	0	0.00
8:21:00	0	0.00	14:01:00	0	0.00	8:01:00	0	0.00	12:46:00	0	0.00
8:21:15	0	0.00	14:01:15	0	0.00	8:01:15	0	0.00	12:46:15	0	0.00
8:21:30	0	0.00	14:01:30	0	0.00	8:01:30	0	0.00	12:46:30	0	0.00
8:21:45	0	0.00	14:01:45	0	0.00	8:01:45	0	0.00	12:46:45	0	0.00
8:22:00	0	0.00	14:02:00	0	0.00	8:02:00	0	0.00	12:47:00	0	0.00
8:22:15	0	0.00	14:02:15	0	0.00	8:02:15	0	0.00	12:47:15	0	0.00
8:22:30	0	0.00	14:02:30	0	0.00	8:02:30	0	0.00	12:47:30	0	0.00
8:22:45	0	0.00	14:02:45	0	0.00	8:02:45	0	0.00	12:47:45	0	0.00
8:23:00	0	0.00	14:03:00	0	0.00	8:03:00	0	0.00	12:48:00	0	0.00
8:23:15	0	0.00	14:03:15	0	0.00	8:03:15	0	0.00	12:48:15	0	0.00
8:23:30	0	0.00	14:03:30	0	0.00	8:03:30	0	0.00	12:48:30	0	0.00
8:23:45	0	0.00	14:03:45	0	0.00	8:03:45	0	0.00	12:48:45	0	0.00
8:24:00	0	0.00	14:04:00	0	0.00	8:04:00	0	0.00	12:49:00	0	0.00
8:24:15	0	0.00	14:04:15	0	0.00	8:04:15	0	0.00	12:49:15	0	0.00
8:24:30	0	0.00	14:04:30	0	0.00	8:04:30	0	0.00	12:49:30	0	0.00
8:24:45	0	0.00	14:04:45	0	0.00	8:04:45	0	0.00	12:49:45	0	0.00
8:25:00	0	0.00	14:05:00	0	0.00	8:05:00	0	0.00	12:50:00	0	0.00
8:25:15	0	0.00	14:05:15	0	0.00	8:05:15	0	0.00	12:50:15	0	0.00
8:25:30	0	0.00	14:05:30	0	0.00	8:05:30	0	0.00	12:50:30	0	0.00
8:25:45	0	0.00	14:05:45	0	0.00	8:05:45	0	0.00	12:50:45	0	0.00
8:26:00	0	0.00	14:06:00	0	0.00	8:06:00	0	0.00	12:51:00	0	0.00
8:26:15	0	0.00	14:06:15	0	0.00	8:06:15	0	0.00	12:51:15	0	0.00
8:26:30	0	0.00	14:06:30	0	0.00	8:06:30	0	0.00	12:51:30	0	0.00
8:26:45	0	0.00	14:06:45	0	0.00	8:06:45	0	0.00	12:51:45	0	0.00
8:27:00	0	0.00	14:07:00	0	0.00	8:07:00	0	0.00	12:52:00	0	0.00
8:27:15	0	0.00	14:07:15	0	0.00	8:07:15	0	0.00	12:52:15	0	0.00
8:27:30	0	0.00	14:07:30	0	0.00	8:07:30	0	0.00	12:52:30	0	0.00
8:27:45	0	0.00	14:07:45	0	0.00	8:07:45	0	0.00	12:52:45	0	0.00
8:28:00	0	0.00	14:08:00	0	0.00	8:08:00	0	0.00	12:53:00	0	0.00
8:28:15	0	0.00	14:08:15	0	0.00	8:08:15	0	0.00	12:53:15	0	0.00
8:28:30	0	0.00	14:08:30	0	0.00	8:08:30	0	0.00	12:53:30	0	0.00
8:28:45	0	0.00	14:08:45	0	0.00	8:08:45	0	0.00	12:53:45	0	0.00
8:29:00	0	0.00	14:09:00	0	0.00	8:09:00	0	0.00	12:54:00	0	0.00
8:29:15	0	0.00	14:09:15	0	0.00	8:09:15	0	0.00	12:54:15	0	0.00
8:29:30	0	0.00	14:09:30	0	0.00	8:09:30	0	0.00	12:54:30	0	0.00
8:29:45	0	0.00	14:09:45	0	0.00	8:09:45	0	0.00	12:54:45	0	0.00
8:30:00	0	0.00	14:10:00	0	0.00	8:10:00	0	0.00	12:55:00	0	0.00
8:30:15	0	0.00	14:10:15	0	0.00	8:10:15	0	0.00	12:55:15	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:30:30	0	0.00	14:10:30	0	0.00	8:10:30	0	0.00	12:55:30	0	0.00
8:30:45	0	0.00	14:10:45	0	0.00	8:10:45	0	0.00	12:55:45	0	0.00
8:31:00	0	0.00	14:11:00	0	0.00	8:11:00	0	0.00	12:56:00	0	0.00
8:31:15	0	0.00	14:11:15	0	0.00	8:11:15	0	0.00	12:56:15	0	0.00
8:31:30	0	0.00	14:11:30	0	0.00	8:11:30	0	0.00	12:56:30	0	0.00
8:31:45	0	0.00	14:11:45	0	0.00	8:11:45	0	0.00	12:56:45	0	0.00
8:32:00	0	0.00	14:12:00	0	0.00	8:12:00	0	0.00	12:57:00	0	0.00
8:32:15	0	0.00	14:12:15	0	0.00	8:12:15	0	0.00	12:57:15	0	0.00
8:32:30	0	0.00	14:12:30	0	0.00	8:12:30	0	0.00	12:57:30	0	0.00
8:32:45	0	0.00	14:12:45	0	0.00	8:12:45	0	0.00	12:57:45	0	0.00
8:33:00	0	0.00	14:13:00	0	0.00	8:13:00	0	0.00	12:58:00	0	0.00
8:33:15	0	0.00	14:13:15	0	0.00	8:13:15	0	0.00	12:58:15	0	0.00
8:33:30	0	0.00	14:13:30	0	0.00	8:13:30	0	0.00	12:58:30	0	0.00
8:33:45	0	0.00	14:13:45	0	0.00	8:13:45	0	0.00	12:58:45	0	0.00
8:34:00	0	0.00	14:14:00	0	0.00	8:14:00	0	0.00	12:59:00	0	0.00
8:34:15	0	0.00	14:14:15	0	0.00	8:14:15	0	0.00	12:59:15	0	0.00
8:34:30	0	0.00	14:14:30	0	0.00	8:14:30	0	0.00	12:59:30	0	0.00
8:34:45	0	0.00	14:14:45	0	0.00	8:14:45	0	0.00	12:59:45	0	0.00
8:35:00	0	0.00	14:15:00	0	0.00	8:15:00	0	0.00	13:00:00	0	0.00
8:35:15	0	0.00	14:15:15	0	0.00	8:15:15	0	0.00	13:00:15	0	0.00
8:35:30	0	0.00	14:15:30	0	0.00	8:15:30	0	0.00	13:00:30	0	0.00
8:35:45	0	0.00	14:15:45	0	0.00	8:15:45	0	0.00	13:00:45	0	0.00
8:36:00	0	0.00	14:16:00	0	0.00	8:16:00	0	0.00	13:01:00	0	0.00
8:36:15	0	0.00	14:16:15	0	0.00	8:16:15	0	0.00	13:01:15	0	0.00
8:36:30	0	0.00	14:16:30	0	0.00	8:16:30	0	0.00	13:01:30	0	0.00
8:36:45	0	0.00	14:16:45	0	0.00	8:16:45	0	0.00	13:01:45	0	0.00
8:37:00	0	0.00	14:17:00	0	0.00	8:17:00	0	0.00	13:02:00	0	0.00
8:37:15	0	0.00	14:17:15	0	0.00	8:17:15	0	0.00	13:02:15	0	0.00
8:37:30	0	0.00	14:17:30	0	0.00	8:17:30	0	0.00	13:02:30	0	0.00
8:37:45	0	0.00	14:17:45	0	0.00	8:17:45	0	0.00	13:02:45	0	0.00
8:38:00	0	0.00	14:18:00	0	0.00	8:18:00	0	0.00	13:03:00	0	0.00
8:38:15	0	0.00	14:18:15	0	0.00	8:18:15	0	0.00	13:03:15	0	0.00
8:38:30	0	0.00	14:18:30	0	0.00	8:18:30	0	0.00	13:03:30	0	0.00
8:38:45	0	0.00	14:18:45	0	0.00	8:18:45	0	0.00	13:03:45	0	0.00
8:39:00	0	0.00	14:19:00	0	0.00	8:19:00	0	0.00	13:04:00	0	0.00
8:39:15	0	0.00	14:19:15	0	0.00	8:19:15	0	0.00	13:04:15	0	0.00
8:39:30	0	0.00	14:19:30	0	0.00	8:19:30	0	0.00	13:04:30	0	0.00
8:39:45	0	0.00	14:19:45	0	0.00	8:19:45	0	0.00	13:04:45	0	0.00
8:40:00	0	0.00	14:20:00	0	0.00	8:20:00	0	0.00	13:05:00	0	0.00
8:40:15	0	0.00	14:20:15	0	0.00	8:20:15	0	0.00	13:05:15	0	0.00
8:40:30	0	0.00	14:20:30	0	0.00	8:20:30	0	0.00	13:05:30	0	0.00
8:40:45	0	0.00	14:20:45	0	0.00	8:20:45	0	0.00	13:05:45	0	0.00
8:41:00	0	0.00	14:21:00	0	0.00	8:21:00	0	0.00	13:06:00	0	0.00
8:41:15	0	0.00	14:21:15	0	0.00	8:21:15	0	0.00	13:06:15	0	0.00
8:41:30	0	0.00	14:21:30	0	0.00	8:21:30	0	0.00	13:06:30	0	0.00
8:41:45	0	0.00	14:21:45	0	0.00	8:21:45	0	0.00	13:06:45	0	0.00
8:42:00	0	0.00	14:22:00	0	0.00	8:22:00	0	0.00	13:07:00	0	0.00
8:42:15	0	0.00	14:22:15	0	0.00	8:22:15	0	0.00	13:07:15	0	0.00
8:42:30	0	0.00	14:22:30	0	0.00	8:22:30	0	0.00	13:07:30	0	0.00
8:42:45	0	0.00	14:22:45	0	0.00	8:22:45	0	0.00	13:07:45	0	0.00
8:43:00	0	0.00	14:23:00	0	0.00	8:23:00	0	0.00	13:08:00	0	0.00
8:43:15	0	0.00	14:23:15	0	0.00	8:23:15	0	0.00	13:08:15	0	0.00
8:43:30	0	0.00	14:23:30	0	0.00	8:23:30	0	0.00	13:08:30	0	0.00
8:43:45	0	0.00	14:23:45	0	0.00	8:23:45	0	0.00	13:08:45	0	0.00
8:44:00	0	0.00	14:24:00	0	0.00	8:24:00	0	0.00	13:09:00	0	0.00
8:44:15	0	0.00	14:24:15	0	0.00	8:24:15	0	0.00	13:09:15	0	0.00
8:44:30	0	0.00	14:24:30	0	0.00	8:24:30	0	0.00	13:09:30	0	0.00
8:44:45	0	0.00	14:24:45	0	0.00	8:24:45	0	0.00	13:09:45	0	0.00
8:45:00	0	0.00	14:25:00	0	0.00	8:25:00	0	0.00	13:10:00	0	0.00
8:45:15	0	0.00	14:25:15	0	0.00	8:25:15	0	0.00	13:10:15	0	0.00
8:45:30	0	0.00	14:25:30	0	0.00	8:25:30	0	0.00	13:10:30	0	0.00
8:45:45	0	0.00	14:25:45	0	0.00	8:25:45	0	0.00	13:10:45	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:46:00	0	0.00	14:26:00	0	0.00	8:26:00	0	0.00	13:11:00	0	0.00
8:46:15	0	0.00	14:26:15	0	0.00	8:26:15	0	0.00	13:11:15	0	0.00
8:46:30	0	0.00	14:26:30	0	0.00	8:26:30	0	0.00	13:11:30	0	0.00
8:46:45	0	0.00	14:26:45	0	0.00	8:26:45	0	0.00	13:11:45	0	0.00
8:47:00	0	0.00	14:27:00	0	0.00	8:27:00	0	0.00	13:12:00	0	0.00
8:47:15	0	0.00	14:27:15	0	0.00	8:27:15	0	0.00	13:12:15	0	0.00
8:47:30	0	0.00	14:27:30	0	0.00	8:27:30	0	0.00	13:12:30	0	0.00
8:47:45	0	0.00	14:27:45	0	0.00	8:27:45	0	0.00	13:12:45	0	0.00
8:48:00	0	0.00	14:28:00	0	0.00	8:28:00	0	0.00	13:13:00	0	0.00
8:48:15	0	0.00	14:28:15	0	0.00	8:28:15	0	0.00	13:13:15	0	0.00
8:48:30	0	0.00	14:28:30	0	0.00	8:28:30	0	0.00	13:13:30	0	0.00
8:48:45	0	0.00	14:28:45	0	0.00	8:28:45	0	0.00	13:13:45	0	0.00
8:49:00	0	0.00	14:29:00	0	0.00	8:29:00	0	0.00	13:14:00	0	0.00
8:49:15	0	0.00	14:29:15	0	0.00	8:29:15	0	0.00	13:14:15	0	0.00
8:49:30	0	0.00	14:29:30	0	0.00	8:29:30	0	0.00	13:14:30	0	0.00
8:49:45	0	0.00	14:29:45	0	0.00	8:29:45	0	0.00	13:14:45	0	0.00
8:50:00	0	0.00	14:30:00	0	0.00	8:30:00	0	0.00	13:15:00	0	0.00
8:50:15	0	0.00	14:30:15	0	0.00	8:30:15	0	0.00	13:15:15	0	0.00
8:50:30	0	0.00	14:30:30	0	0.00	8:30:30	0	0.00	13:15:30	0	0.00
8:50:45	0	0.00	14:30:45	0	0.00	8:30:45	0	0.00	13:15:45	0	0.00
8:51:00	0	0.00	14:31:00	0	0.00	8:31:00	0	0.00	13:16:00	0	0.00
8:51:15	0	0.00	14:31:15	0	0.00	8:31:15	0	0.00	13:16:15	0	0.00
8:51:30	0	0.00	14:31:30	0	0.00	8:31:30	0	0.00	13:16:30	0	0.00
8:51:45	0	0.00	14:31:45	0	0.00	8:31:45	0	0.00	13:16:45	0	0.00
8:52:00	0	0.00	14:32:00	0	0.00	8:32:00	0	0.00	13:17:00	0	0.00
8:52:15	0	0.00	14:32:15	0	0.00	8:32:15	0	0.00	13:17:15	0	0.00
8:52:30	0	0.00	14:32:30	0	0.00	8:32:30	0	0.00	13:17:30	0	0.00
8:52:45	0	0.00	14:32:45	0	0.00	8:32:45	0	0.00	13:17:45	0	0.00
8:53:00	0	0.00	14:33:00	0	0.00	8:33:00	0	0.00	13:18:00	0	0.00
8:53:15	0	0.00	14:33:15	0	0.00	8:33:15	0	0.00	13:18:15	0	0.00
8:53:30	0	0.00	14:33:30	0	0.00	8:33:30	0	0.00	13:18:30	0	0.00
8:53:45	0	0.00	14:33:45	0	0.00	8:33:45	0	0.00	13:18:45	0	0.00
8:54:00	0	0.00	14:34:00	0	0.00	8:34:00	0	0.00	13:19:00	0	0.00
8:54:15	0	0.00	14:34:15	0	0.00	8:34:15	0	0.00	13:19:15	0	0.00
8:54:30	0	0.00	14:34:30	0	0.00	8:34:30	0	0.00	13:19:30	0	0.00
8:54:45	0	0.00	14:34:45	0	0.00	8:34:45	0	0.00	13:19:45	0	0.00
8:55:00	0	0.00	14:35:00	0	0.00	8:35:00	0	0.00	13:20:00	0	0.00
8:55:15	0	0.00	14:35:15	0	0.00	8:35:15	0	0.00	13:20:15	0	0.00
8:55:30	0	0.00	14:35:30	0	0.00	8:35:30	0	0.00	13:20:30	0	0.00
8:55:45	0	0.00	14:35:45	0	0.00	8:35:45	0	0.00	13:20:45	0	0.00
8:56:00	0	0.00	14:36:00	0	0.00	8:36:00	0	0.00	13:21:00	0	0.00
8:56:15	0	0.00	14:36:15	0	0.00	8:36:15	0	0.00	13:21:15	0	0.00
8:56:30	0	0.00	14:36:30	0	0.00	8:36:30	0	0.00	13:21:30	0	0.00
8:56:45	0	0.00	14:36:45	0	0.00	8:36:45	0	0.00	13:21:45	0	0.00
8:57:00	0	0.00	14:37:00	0	0.00	8:37:00	0	0.00	13:22:00	0	0.00
8:57:15	0	0.00	14:37:15	0	0.00	8:37:15	0	0.00	13:22:15	0	0.00
8:57:30	0	0.00	14:37:30	0	0.00	8:37:30	0	0.00	13:22:30	0	0.00
8:57:45	0	0.00	14:37:45	0	0.00	8:37:45	0	0.00	13:22:45	0	0.00
8:58:00	0	0.00	14:38:00	0	0.00	8:38:00	0	0.00	13:23:00	0	0.00
8:58:15	0	0.00	14:38:15	0	0.00	8:38:15	0	0.00	13:23:15	0	0.00
8:58:30	0	0.00	14:38:30	0	0.00	8:38:30	0	0.00	13:23:30	0	0.00
8:58:45	0	0.00	14:38:45	0	0.00	8:38:45	0	0.00	13:23:45	0	0.00
8:59:00	0	0.00	14:39:00	0	0.00	8:39:00	0	0.00	13:24:00	0	0.00
8:59:15	0	0.00	14:39:15	0	0.00	8:39:15	0	0.00	13:24:15	0	0.00
8:59:30	0	0.00	14:39:30	0	0.00	8:39:30	0	0.00	13:24:30	0	0.00
8:59:45	0	0.00	14:39:45	0	0.00	8:39:45	0	0.00	13:24:45	0	0.00
9:00:00	0	0.00	14:40:00	0	0.00	8:40:00	0	0.00	13:25:00	0	0.00
9:00:15	0	0.00	14:40:15	0	0.00	8:40:15	0	0.00	13:25:15	0	0.00
9:00:30	0	0.00	14:40:30	0	0.00	8:40:30	0	0.00	13:25:30	0	0.00
9:00:45	0	0.00	14:40:45	0	0.00	8:40:45	0	0.00	13:25:45	0	0.00
9:01:00	0	0.00	14:41:00	0	0.00	8:41:00	0	0.00	13:26:00	0	0.00
9:01:15	0	0.00	14:41:15	0	0.00	8:41:15	0	0.00	13:26:15	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
9:01:30	0	0.00	14:41:30	0	0.00	8:41:30	0	0.00	13:26:30	0	0.00
9:01:45	0	0.00	14:41:45	0	0.00	8:41:45	0	0.00	13:26:45	0	0.00
9:02:00	0	0.00	14:42:00	0	0.00	8:42:00	0	0.00	13:27:00	0	0.00
9:02:15	0	0.00	14:42:15	0	0.00	8:42:15	0	0.00	13:27:15	0	0.00
9:02:30	0	0.00	14:42:30	0	0.00	8:42:30	0	0.00	13:27:30	0	0.00
9:02:45	0	0.00	14:42:45	0	0.00	8:42:45	0	0.00	13:27:45	0	0.00
9:03:00	0	0.00	14:43:00	0	0.00	8:43:00	0	0.00	13:28:00	0	0.00
9:03:15	0	0.00	14:43:15	0	0.00	8:43:15	0	0.00	13:28:15	0	0.00
9:03:30	0	0.00	14:43:30	0	0.00	8:43:30	0	0.00	13:28:30	0	0.00
9:03:45	0	0.00	14:43:45	0	0.00	8:43:45	0	0.00	13:28:45	0	0.00
9:04:00	0	0.00	14:44:00	0	0.00	8:44:00	0	0.00	13:29:00	0	0.00
9:04:15	0	0.00	14:44:15	0	0.00	8:44:15	0	0.00	13:29:15	0	0.00
9:04:30	0	0.00	14:44:30	0	0.00	8:44:30	0	0.00	13:29:30	0	0.00
9:04:45	0	0.00	14:44:45	0	0.00	8:44:45	0	0.00	13:29:45	0	0.00
9:05:00	0	0.00	14:45:00	0	0.00	8:45:00	0	0.00	13:30:00	0	0.00
9:05:15	0	0.00	14:45:15	0	0.00	8:45:15	0	0.00	13:30:15	0	0.00
9:05:30	0	0.00	14:45:30	0	0.00	8:45:30	0	0.00	13:30:30	0	0.00
9:05:45	0	0.00	14:45:45	0	0.00	8:45:45	0	0.00	13:30:45	0	0.00
9:06:00	0	0.00	14:46:00	0	0.00	8:46:00	0	0.00	13:31:00	0	0.00
9:06:15	0	0.00	14:46:15	0	0.00	8:46:15	0	0.00	13:31:15	0	0.00
9:06:30	0	0.00	14:46:30	0	0.00	8:46:30	0	0.00	13:31:30	0	0.00
9:06:45	0	0.00	14:46:45	0	0.00	8:46:45	0	0.00	13:31:45	0	0.00
9:07:00	0	0.00	14:47:00	0	0.00	8:47:00	0	0.00	13:32:00	0	0.00
9:07:15	0	0.00	14:47:15	0	0.00	8:47:15	0	0.00	13:32:15	0	0.00
9:07:30	0	0.00	14:47:30	0	0.00	8:47:30	0	0.00	13:32:30	0	0.00
9:07:45	0	0.00	14:47:45	0	0.00	8:47:45	0	0.00	13:32:45	0	0.00
9:08:00	0	0.00	14:48:00	0	0.00	8:48:00	0	0.00	13:33:00	0	0.00
9:08:15	0	0.00	14:48:15	0	0.00	8:48:15	0	0.00	13:33:15	0	0.00
9:08:30	0	0.00	14:48:30	0	0.00	8:48:30	0	0.00	13:33:30	0	0.00
9:08:45	0	0.00	14:48:45	0	0.00	8:48:45	0	0.00	13:33:45	0	0.00
9:09:00	0	0.00	14:49:00	0	0.00	8:49:00	0	0.00	13:34:00	0	0.00
9:09:15	0	0.00	14:49:15	0	0.00	8:49:15	0	0.00	13:34:15	0	0.00
9:09:30	0	0.00	14:49:30	0	0.00	8:49:30	0	0.00	13:34:30	0	0.00
9:09:45	0	0.00	14:49:45	0	0.00	8:49:45	0	0.00	13:34:45	0	0.00
9:10:00	0	0.00	14:50:00	0	0.00	8:50:00	0	0.00	13:35:00	0	0.00
9:10:15	0	0.00	14:50:15	0	0.00	8:50:15	0	0.00	13:35:15	0	0.00
9:10:30	0	0.00	14:50:30	0	0.00	8:50:30	0	0.00	13:35:30	0	0.00
9:10:45	0	0.00	14:50:45	0	0.00	8:50:45	0	0.00	13:35:45	0	0.00
9:11:00	0	0.00	14:51:00	0	0.00	8:51:00	0	0.00	13:36:00	0	0.00
9:11:15	0	0.00	14:51:15	0	0.00	8:51:15	0	0.00	13:36:15	0	0.00
9:11:30	0	0.00	14:51:30	0	0.00	8:51:30	0	0.00	13:36:30	0	0.00
9:11:45	0	0.00	14:51:45	0	0.00	8:51:45	0	0.00	13:36:45	0	0.00
9:12:00	0	0.00	14:52:00	0	0.00	8:52:00	0	0.00	13:37:00	0	0.00
9:12:15	0	0.00	14:52:15	0	0.00	8:52:15	0	0.00	13:37:15	0	0.00
9:12:30	0	0.00	14:52:30	0	0.00	8:52:30	0	0.00	13:37:30	0	0.00
9:12:45	0	0.00	14:52:45	0	0.00	8:52:45	0	0.00	13:37:45	0	0.00
9:13:00	0	0.00	14:53:00	0	0.00	8:53:00	0	0.00	13:38:00	0	0.00
9:13:15	0	0.00	14:53:15	0	0.00	8:53:15	0	0.00	13:38:15	0	0.00
9:13:30	0	0.00	14:53:30	0	0.00	8:53:30	0	0.00	13:38:30	0	0.00
9:13:45	0	0.00	14:53:45	0	0.00	8:53:45	0	0.00	13:38:45	0	0.00
9:14:00	0	0.00	14:54:00	0	0.00	8:54:00	0	0.00	13:39:00	0	0.00
9:14:15	0	0.00	14:54:15	0	0.00	8:54:15	0	0.00	13:39:15	0	0.00
9:14:30	0	0.00	14:54:30	0	0.00	8:54:30	0	0.00	13:39:30	0	0.00
9:14:45	0	0.00	14:54:45	0	0.00	8:54:45	0	0.00	13:39:45	0	0.00
9:15:00	0	0.00	14:55:00	0	0.00	8:55:00	0	0.00	13:40:00	0	0.00
9:15:15	0	0.00	14:55:15	0	0.00	8:55:15	0	0.00	13:40:15	0	0.00
9:15:30	0	0.00	14:55:30	0	0.00	8:55:30	0	0.00	13:40:30	0	0.00
9:15:45	0	0.00	14:55:45	0	0.00	8:55:45	0	0.00	13:40:45	0	0.00
9:16:00	0	0.00	14:56:00	0	0.00	8:56:00	0	0.00	13:41:00	0	0.00
9:16:15	0	0.00	14:56:15	0	0.00	8:56:15	0	0.00	13:41:15	0	0.00
9:16:30	0	0.00	14:56:30	0	0.00	8:56:30	0	0.00	13:41:30	0	0.00
9:16:45	0	0.00	14:56:45	0	0.00	8:56:45	0	0.00	13:41:45	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
9:17:00	0	0.00	14:57:00	0	0.00	8:57:00	0	0.00	13:42:00	0	0.00
9:17:15	0	0.00	14:57:15	0	0.00	8:57:15	0	0.00	13:42:15	0	0.00
9:17:30	0	0.00	14:57:30	0	0.00	8:57:30	0	0.00	13:42:30	0	0.00
9:17:45	0	0.00	14:57:45	0	0.00	8:57:45	0	0.00	13:42:45	0	0.00
9:18:00	0	0.00	14:58:00	0	0.00	8:58:00	0	0.00	13:43:00	0	0.00
9:18:15	0	0.00	14:58:15	0	0.00	8:58:15	0	0.00	13:43:15	0	0.00
9:18:30	0	0.00	14:58:30	0	0.00	8:58:30	0	0.00	13:43:30	0	0.00
9:18:45	0	0.00	14:58:45	0	0.00	8:58:45	0	0.00	13:43:45	0	0.00
9:19:00	0	0.00	14:59:00	0	0.00	8:59:00	0	0.00	13:44:00	0	0.00
9:19:15	0	0.00	14:59:15	0	0.00	8:59:15	0	0.00	13:44:15	0	0.00
9:19:30	0	0.00	14:59:30	0	0.00	8:59:30	0	0.00	13:44:30	0	0.00
9:19:45	0	0.00	14:59:45	0	0.00	8:59:45	0	0.00	13:44:45	0	0.00
9:20:00	0	0.00	15:00:00	0	0.00	9:00:00	0	0.00	13:45:00	0	0.00
9:20:15	0	0.00	15:00:15	0	0.00	9:00:15	0	0.00	13:45:15	0	0.00
9:20:30	0	0.00	15:00:30	0	0.00	9:00:30	0	0.00	13:45:30	0	0.00
9:20:45	0	0.00	15:00:45	0	0.00	9:00:45	0	0.00	13:45:45	0	0.00
9:21:00	0	0.00	15:01:00	0	0.00	9:01:00	0	0.00	13:46:00	0	0.00
9:21:15	0	0.00	15:01:15	0	0.00	9:01:15	0	0.00	13:46:15	0	0.00
9:21:30	0	0.00	15:01:30	0	0.00	9:01:30	0	0.00	13:46:30	0	0.00
9:21:45	0	0.00	15:01:45	0	0.00	9:01:45	0	0.00	13:46:45	0	0.00
9:22:00	0	0.00	15:02:00	0	0.00	9:02:00	0	0.00	13:47:00	0	0.00
9:22:15	0	0.00	15:02:15	0	0.00	9:02:15	0	0.00	13:47:15	0	0.00
9:22:30	0	0.00	15:02:30	0	0.00	9:02:30	0	0.00	13:47:30	0	0.00
9:22:45	0	0.00	15:02:45	0	0.00	9:02:45	0	0.00	13:47:45	0	0.00
9:23:00	0	0.00	15:03:00	0	0.00	9:03:00	0	0.00	13:48:00	0	0.00
9:23:15	0	0.00	15:03:15	0	0.00	9:03:15	0	0.00	13:48:15	0	0.00
9:23:30	0	0.00	15:03:30	0	0.00	9:03:30	0	0.00	13:48:30	0	0.00
9:23:45	0	0.00	15:03:45	0	0.00	9:03:45	0	0.00	13:48:45	0	0.00
9:24:00	0	0.00	15:04:00	0	0.00	9:04:00	0	0.00	13:49:00	0	0.00
9:24:15	0	0.00	15:04:15	0	0.00	9:04:15	0	0.00	13:49:15	0	0.00
9:24:30	0	0.00	15:04:30	0	0.00	9:04:30	0	0.00	13:49:30	0	0.00
9:24:45	0	0.00	15:04:45	0	0.00	9:04:45	0	0.00	13:49:45	0	0.00
9:25:00	0	0.00	15:05:00	0	0.00	9:05:00	0	0.00	13:50:00	0	0.00
9:25:15	0	0.00	15:05:15	0	0.00	9:05:15	0	0.00	13:50:15	0	0.00
9:25:30	0	0.00	15:05:30	0	0.00	9:05:30	0	0.00	13:50:30	0	0.00
9:25:45	0	0.00	15:05:45	0	0.00	9:05:45	0	0.00	13:50:45	0	0.00
9:26:00	0	0.00	15:06:00	0	0.00	9:06:00	0	0.00	13:51:00	0	0.00
9:26:15	0	0.00	15:06:15	0	0.00	9:06:15	0	0.00	13:51:15	0	0.00
9:26:30	0	0.00	15:06:30	0	0.00	9:06:30	0	0.00	13:51:30	0	0.00
9:26:45	0	0.00	15:06:45	0	0.00	9:06:45	0	0.00	13:51:45	0	0.00
9:27:00	0	0.00	15:07:00	0	0.00	9:07:00	0	0.00	13:52:00	0	0.00
9:27:15	0	0.00	15:07:15	0	0.00	9:07:15	0	0.00	13:52:15	0	0.00
9:27:30	0	0.00	15:07:30	0	0.00	9:07:30	0	0.00	13:52:30	0	0.00
9:27:45	0	0.00	15:07:45	0	0.00	9:07:45	0	0.00	13:52:45	0	0.00
9:28:00	0	0.00	15:08:00	0	0.00	9:08:00	0	0.00	13:53:00	0	0.00
9:28:15	0	0.00	15:08:15	0	0.00	9:08:15	0	0.00	13:53:15	0	0.00
9:28:30	0	0.00	15:08:30	0	0.00	9:08:30	0	0.00	13:53:30	0	0.00
9:28:45	0	0.00	15:08:45	0	0.00	9:08:45	0	0.00	13:53:45	0	0.00
9:29:00	0	0.00	15:09:00	0	0.00	9:09:00	0	0.00	13:54:00	0	0.00
9:29:15	0	0.00	15:09:15	0	0.00	9:09:15	0	0.00	13:54:15	0	0.00
9:29:30	0	0.00	15:09:30	0	0.00	9:09:30	0	0.00	13:54:30	0	0.00
9:29:45	0	0.00	15:09:45	0	0.00	9:09:45	0	0.00	13:54:45	0	0.00
9:30:00	0	0.00	15:10:00	0	0.00	9:10:00	0	0.00	13:55:00	0	0.00
9:30:15	0	0.00	15:10:15	0	0.00	9:10:15	0	0.00	13:55:15	0	0.00
9:30:30	0	0.00	15:10:30	0	0.00	9:10:30	0	0.00	13:55:30	0	0.00
9:30:45	0	0.00	15:10:45	0	0.00	9:10:45	0	0.00	13:55:45	0	0.00
9:31:00	0	0.00	15:11:00	0	0.00	9:11:00	0	0.00	13:56:00	0	0.00
9:31:15	0	0.00	15:11:15	0	0.00	9:11:15	0	0.00	13:56:15	0	0.00
9:31:30	0	0.00	15:11:30	0	0.00	9:11:30	0	0.00	13:56:30	0	0.00
9:31:45	0	0.00	15:11:45	0	0.00	9:11:45	0	0.00	13:56:45	0	0.00
9:32:00	0	0.00	15:12:00	0	0.00	9:12:00	0	0.00	13:57:00	0	0.00
9:32:15	0	0.00	15:12:15	0	0.00	9:12:15	0	0.00	13:57:15	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
9:32:30	0	0.00	15:12:30	0	0.00	9:12:30	0	0.00	13:57:30	0	0.00
9:32:45	0	0.00	15:12:45	0	0.00	9:12:45	0	0.00	13:57:45	0	0.00
9:33:00	0	0.00	15:13:00	0	0.00	9:13:00	0	0.00	13:58:00	0	0.00
9:33:15	0	0.00	15:13:15	0	0.00	9:13:15	0	0.00	13:58:15	0	0.00
9:33:30	0	0.00	15:13:30	0	0.00	9:13:30	0	0.00	13:58:30	0	0.00
9:33:45	0	0.00	15:13:45	0	0.00	9:13:45	0	0.00	13:58:45	0	0.00
9:34:00	0	0.00	15:14:00	0	0.00	9:14:00	0	0.00	13:59:00	0	0.00
9:34:15	0	0.00	15:14:15	0	0.00	9:14:15	0	0.00	13:59:15	0	0.00
9:34:30	0	0.00	15:14:30	0	0.00	9:14:30	0	0.00	13:59:30	0	0.00
9:34:45	0	0.00	15:14:45	0	0.00	9:14:45	0	0.00	13:59:45	0	0.00
9:35:00	0	0.00	15:15:00	0	0.00	9:15:00	0	0.00	14:00:00	0	0.00
9:35:15	0	0.00	15:15:15	0	0.00	9:15:15	0	0.00	14:00:15	0	0.00
9:35:30	0	0.00	15:15:30	0	0.00	9:15:30	0	0.00	14:00:30	0	0.00
9:35:45	0	0.00	15:15:45	0	0.00	9:15:45	0	0.00	14:00:45	0	0.00
9:36:00	0	0.00	15:16:00	0	0.00	9:16:00	0	0.00	14:01:00	0	0.00
9:36:15	0	0.00	15:16:15	0	0.00	9:16:15	0	0.00	14:01:15	0	0.00
9:36:30	0	0.00	15:16:30	0	0.00	9:16:30	0	0.00	14:01:30	0	0.00
9:36:45	0	0.00	15:16:45	0	0.00	9:16:45	0	0.00	14:01:45	0	0.00
9:37:00	0	0.00	15:17:00	0	0.00	9:17:00	0	0.00	14:02:00	0	0.00
9:37:15	0	0.00	15:17:15	0	0.00	9:17:15	0	0.00	14:02:15	0	0.00
9:37:30	0	0.00	15:17:30	0	0.00	9:17:30	0	0.00	14:02:30	0	0.00
9:37:45	0	0.00	15:17:45	0	0.00	9:17:45	0	0.00	14:02:45	0	0.00
9:38:00	0	0.00	15:18:00	0	0.00	9:18:00	0	0.00	14:03:00	0	0.00
9:38:15	0	0.00	15:18:15	0	0.00	9:18:15	0	0.00	14:03:15	0	0.00
9:38:30	0	0.00	15:18:30	0	0.00	9:18:30	0	0.00	14:03:30	0	0.00
9:38:45	0	0.00	15:18:45	0	0.00	9:18:45	0	0.00	14:03:45	0	0.00
9:39:00	0	0.00	15:19:00	0	0.00	9:19:00	0	0.00	14:04:00	0	0.00
9:39:15	0	0.00	15:19:15	0	0.00	9:19:15	0	0.00	14:04:15	0	0.00
9:39:30	0	0.00	15:19:30	0	0.00	9:19:30	0	0.00	14:04:30	0	0.00
9:39:45	0	0.00	15:19:45	0	0.00	9:19:45	0	0.00	14:04:45	0	0.00
9:40:00	0	0.00	15:20:00	0	0.00	9:20:00	0	0.00	14:05:00	0	0.00
9:40:15	0	0.00	15:20:15	0	0.00	9:20:15	0	0.00	14:05:15	0	0.00
9:40:30	0	0.00	15:20:30	0	0.00	9:20:30	0	0.00	14:05:30	0	0.00
9:40:45	0	0.00	15:20:45	0	0.00	9:20:45	0	0.00	14:05:45	0	0.00
9:41:00	0	0.00	15:21:00	0	0.00	9:21:00	0	0.00	14:06:00	0	0.00
9:41:15	0	0.00	15:21:15	0	0.00	9:21:15	0	0.00	14:06:15	0	0.00
9:41:30	0	0.00	15:21:30	0	0.00	9:21:30	0	0.00	14:06:30	0	0.00
9:41:45	0	0.00	15:21:45	0	0.00	9:21:45	0	0.00	14:06:45	0	0.00
9:42:00	0	0.00	15:22:00	0	0.00	9:22:00	0	0.00	14:07:00	0	0.00
9:42:15	0	0.00	15:22:15	0	0.00	9:22:15	0	0.00	14:07:15	0	0.00
9:42:30	0	0.00	15:22:30	0	0.00	9:22:30	0	0.00	14:07:30	0	0.00
9:42:45	0	0.00	15:22:45	0	0.00	9:22:45	0	0.00	14:07:45	0	0.00
9:43:00	0	0.00	15:23:00	0	0.00	9:23:00	0	0.00	14:08:00	0	0.00
9:43:15	0	0.00	15:23:15	0	0.00	9:23:15	0	0.00	14:08:15	0	0.00
9:43:30	0	0.00	15:23:30	0	0.00	9:23:30	0	0.00	14:08:30	0	0.00
9:43:45	0	0.00	15:23:45	0	0.00	9:23:45	0	0.00	14:08:45	0	0.00
9:44:00	0	0.00	15:24:00	0	0.00	9:24:00	0	0.00	14:09:00	0	0.00
9:44:15	0	0.00	15:24:15	0	0.00	9:24:15	0	0.00	14:09:15	0	0.00
9:44:30	0	0.00	15:24:30	0	0.00	9:24:30	0	0.00	14:09:30	0	0.00
9:44:45	0	0.00	15:24:45	0	0.00	9:24:45	0	0.00	14:09:45	0	0.00
9:45:00	0	0.00	15:25:00	0	0.00	9:25:00	0	0.00	14:10:00	0	0.00
9:45:15	0	0.00	15:25:15	0	0.00	9:25:15	0	0.00	14:10:15	0	0.00
9:45:30	0	0.00	15:25:30	0	0.00	9:25:30	0	0.00	14:10:30	0	0.00
9:45:45	0	0.00	15:25:45	0	0.00	9:25:45	0	0.00	14:10:45	0	0.00
9:46:00	0	0.00	15:26:00	0	0.00	9:26:00	0	0.00	14:11:00	0	0.00
9:46:15	0	0.00	15:26:15	0	0.00	9:26:15	0	0.00	14:11:15	0	0.00
9:46:30	0	0.00	15:26:30	0	0.00	9:26:30	0	0.00	14:11:30	0	0.00
9:46:45	0	0.00	15:26:45	0	0.00	9:26:45	0	0.00	14:11:45	0	0.00
9:47:00	0	0.00	15:27:00	0	0.00	9:27:00	0	0.00	14:12:00	0	0.00
9:47:15	0	0.00	15:27:15	0	0.00	9:27:15	0	0.00	14:12:15	0	0.00
9:47:30	0	0.00	15:27:30	0	0.00	9:27:30	0	0.00	14:12:30	0	0.00
9:47:45	0	0.00	15:27:45	0	0.00	9:27:45	0	0.00	14:12:45	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
9:48:00	0	0.00	15:28:00	0	0.00	9:28:00	0	0.00	14:13:00	0	0.00
9:48:15	0	0.00	15:28:15	0	0.00	9:28:15	0	0.00	14:13:15	0	0.00
9:48:30	0	0.00	15:28:30	0	0.00	9:28:30	0	0.00	14:13:30	0	0.00
9:48:45	0	0.00	15:28:45	0	0.00	9:28:45	0	0.00	14:13:45	0	0.00
9:49:00	0	0.00	15:29:00	0	0.00	9:29:00	0	0.00	14:14:00	0	0.00
9:49:15	0	0.00	15:29:15	0	0.00	9:29:15	0	0.00	14:14:15	0	0.00
9:49:30	0	0.00	15:29:30	0	0.00	9:29:30	0	0.00	14:14:30	0	0.00
9:49:45	0	0.00	15:29:45	0	0.00	9:29:45	0	0.00	14:14:45	0	0.00
9:50:00	0	0.00	15:30:00	0	0.00	9:30:00	0	0.00	14:15:00	0	0.00
9:50:15	0	0.00	15:30:15	0	0.00	9:30:15	0	0.00	14:15:15	0	0.00
9:50:30	0	0.00	15:30:30	0	0.00	9:30:30	0	0.00	14:15:30	0	0.00
9:50:45	0	0.00	15:30:45	0	0.00	9:30:45	0	0.00	14:15:45	0	0.00
9:51:00	0	0.00	15:31:00	0	0.00	9:31:00	0	0.00	14:16:00	0	0.00
9:51:15	0	0.00	15:31:15	0	0.00	9:31:15	0	0.00	14:16:15	0	0.00
9:51:30	0	0.00	15:31:30	0	0.00	9:31:30	0	0.00	14:16:30	0	0.00
9:51:45	0	0.00	15:31:45	0	0.00	9:31:45	0	0.00	14:16:45	0	0.00
9:52:00	0	0.00	15:32:00	0	0.00	9:32:00	0	0.00	14:17:00	0	0.00
9:52:15	0	0.00	15:32:15	0	0.00	9:32:15	0	0.00	14:17:15	0	0.00
9:52:30	0	0.00	15:32:30	0	0.00	9:32:30	0	0.00	14:17:30	0	0.00
9:52:45	0	0.00	15:32:45	0	0.00	9:32:45	0	0.00	14:17:45	0	0.00
9:53:00	0	0.00	15:33:00	0	0.00	9:33:00	0	0.00	14:18:00	0	0.00
9:53:15	0	0.00	15:33:15	0	0.00	9:33:15	0	0.00	14:18:15	0	0.00
9:53:30	0	0.00	15:33:30	0	0.00	9:33:30	0	0.00	14:18:30	0	0.00
9:53:45	0	0.00	15:33:45	0	0.00	9:33:45	0	0.00	14:18:45	0	0.00
9:54:00	0	0.00	15:34:00	0	0.00	9:34:00	0	0.00	14:19:00	0	0.00
9:54:15	0	0.00	15:34:15	0	0.00	9:34:15	0	0.00	14:19:15	0	0.00
9:54:30	0	0.00	15:34:30	0	0.00	9:34:30	0	0.00	14:19:30	0	0.00
9:54:45	0	0.00	15:34:45	0	0.00	9:34:45	0	0.00	14:19:45	0	0.00
9:55:00	0	0.00	15:35:00	0	0.00	9:35:00	0	0.00	14:20:00	0	0.00
9:55:15	0	0.00	15:35:15	0	0.00	9:35:15	0	0.00	14:20:15	0	0.00
9:55:30	0	0.00	15:35:30	0	0.00	9:35:30	0	0.00	14:20:30	0	0.00
9:55:45	0	0.00	15:35:45	0	0.00	9:35:45	0	0.00	14:20:45	0	0.00
9:56:00	0	0.00	15:36:00	0	0.00	9:36:00	0	0.00	14:21:00	0	0.00
9:56:15	0	0.00	15:36:15	0	0.00	9:36:15	0	0.00	14:21:15	0	0.00
9:56:30	0	0.00	15:36:30	0	0.00	9:36:30	0	0.00	14:21:30	0	0.00
9:56:45	0	0.00	15:36:45	0	0.00	9:36:45	0	0.00	14:21:45	0	0.00
9:57:00	0	0.00	15:37:00	0	0.00	9:37:00	0	0.00	14:22:00	0	0.00
9:57:15	0	0.00	15:37:15	0	0.00	9:37:15	0	0.00	14:22:15	0	0.00
9:57:30	0	0.00	15:37:30	0	0.00	9:37:30	0	0.00	14:22:30	0	0.00
9:57:45	0	0.00	15:37:45	0	0.00	9:37:45	0	0.00	14:22:45	0	0.00
9:58:00	0	0.00	15:38:00	0	0.00	9:38:00	0	0.00	14:23:00	0	0.00
9:58:15	0	0.00	15:38:15	0	0.00	9:38:15	0	0.00	14:23:15	0	0.00
9:58:30	0	0.00	15:38:30	0	0.00	9:38:30	0	0.00	14:23:30	0	0.00
9:58:45	0	0.00	15:38:45	0	0.00	9:38:45	0	0.00	14:23:45	0	0.00
9:59:00	0	0.00	15:39:00	0	0.00	9:39:00	0	0.00	14:24:00	0	0.00
9:59:15	0	0.00	15:39:15	0	0.00	9:39:15	0	0.00	14:24:15	0	0.00
9:59:30	0	0.00	15:39:30	0	0.00	9:39:30	0	0.00	14:24:30	0	0.00
9:59:45	0	0.00	15:39:45	0	0.00	9:39:45	0	0.00	14:24:45	0	0.00
10:00:00	0	0.00	15:40:00	0	0.00	9:40:00	0	0.00	14:25:00	0	0.00
10:00:15	0	0.00	15:40:15	0	0.00	9:40:15	0	0.00	14:25:15	0	0.00
10:00:30	0	0.00	15:40:30	0	0.00	9:40:30	0	0.00	14:25:30	0	0.00
10:00:45	0	0.00	15:40:45	0	0.00	9:40:45	0	0.00	14:25:45	0	0.00
10:01:00	0	0.00	15:41:00	0	0.00	9:41:00	0	0.00	14:26:00	0	0.00
10:01:15	0	0.00	15:41:15	0	0.00	9:41:15	0	0.00	14:26:15	0	0.00
10:01:30	0	0.00	15:41:30	0	0.00	9:41:30	0	0.00	14:26:30	0	0.00
10:01:45	0	0.00	15:41:45	0	0.00	9:41:45	0	0.00	14:26:45	0	0.00
10:02:00	0	0.00	15:42:00	0	0.00	9:42:00	0	0.00	14:27:00	0	0.00
10:02:15	0	0.00	15:42:15	0	0.00	9:42:15	0	0.00	14:27:15	0	0.00
10:02:30	0	0.00	15:42:30	0	0.00	9:42:30	0	0.00	14:27:30	0	0.00
10:02:45	0	0.00	15:42:45	0	0.00	9:42:45	0	0.00	14:27:45	0	0.00
10:03:00	0	0.00	15:43:00	0	0.00	9:43:00	0	0.00	14:28:00	0	0.00
10:03:15	0	0.00	15:43:15	0	0.00	9:43:15	0	0.00	14:28:15	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
10:03:30	0	0.00	15:43:30	0	0.00	9:43:30	0	0.00	14:28:30	0	0.00
10:03:45	0	0.00	15:43:45	0	0.00	9:43:45	0	0.00	14:28:45	0	0.00
10:04:00	0	0.00	15:44:00	0	0.00	9:44:00	0	0.00	14:29:00	0	0.00
10:04:15	0	0.00	15:44:15	0	0.00	9:44:15	0	0.00	14:29:15	0	0.00
10:04:30	0	0.00	15:44:30	0	0.00	9:44:30	0	0.00	14:29:30	0	0.00
10:04:45	0	0.00	15:44:45	0	0.00	9:44:45	0	0.00	14:29:45	0	0.00
10:05:00	0	0.00	15:45:00	0	0.00	9:45:00	0	0.00	14:30:00	0	0.00
10:05:15	0	0.00	15:45:15	0	0.00	9:45:15	0	0.00	14:30:15	0	0.00
10:05:30	0	0.00	15:45:30	0	0.00	9:45:30	0	0.00	14:30:30	0	0.00
10:05:45	0	0.00	15:45:45	0	0.00	9:45:45	0	0.00	14:30:45	0	0.00
10:06:00	0	0.00	15:46:00	0	0.00	9:46:00	0	0.00	14:31:00	0	0.00
10:06:15	0	0.00	15:46:15	0	0.00	9:46:15	0	0.00	14:31:15	0	0.00
10:06:30	0	0.00	15:46:30	0	0.00	9:46:30	0	0.00	14:31:30	0	0.00
10:06:45	0	0.00	15:46:45	0	0.00	9:46:45	0	0.00	14:31:45	0	0.00
10:07:00	0	0.00	15:47:00	0	0.00	9:47:00	0	0.00	14:32:00	0	0.00
10:07:15	0	0.00	15:47:15	0	0.00	9:47:15	0	0.00	14:32:15	0	0.00
10:07:30	0	0.00	15:47:30	0	0.00	9:47:30	0	0.00	14:32:30	0	0.00
10:07:45	0	0.00	15:47:45	0	0.00	9:47:45	0	0.00	14:32:45	0	0.00
10:08:00	0	0.00	15:48:00	0	0.00	9:48:00	0	0.00	14:33:00	0	0.00
10:08:15	0	0.00	15:48:15	0	0.00	9:48:15	0	0.00	14:33:15	0	0.00
10:08:30	0	0.00	15:48:30	0	0.00	9:48:30	0	0.00	14:33:30	0	0.00
10:08:45	0	0.00	15:48:45	0	0.00	9:48:45	0	0.00	14:33:45	0	0.00
10:09:00	0	0.00	15:49:00	0	0.00	9:49:00	0	0.00	14:34:00	0	0.00
10:09:15	0	0.00	15:49:15	0	0.00	9:49:15	0	0.00	14:34:15	0	0.00
10:09:30	0	0.00	15:49:30	0	0.00	9:49:30	0	0.00	14:34:30	0	0.00
10:09:45	0	0.00	15:49:45	0	0.00	9:49:45	0	0.00	14:34:45	0	0.00
10:10:00	0	0.00	15:50:00	0	0.00	9:50:00	0	0.00	14:35:00	0	0.00
10:10:15	0	0.00	15:50:15	0	0.00	9:50:15	0	0.00	14:35:15	0	0.00
10:10:30	0	0.00	15:50:30	0	0.00	9:50:30	0	0.00	14:35:30	0	0.00
10:10:45	0	0.00	15:50:45	0	0.00	9:50:45	0	0.00	14:35:45	0	0.00
10:11:00	0	0.00	15:51:00	0	0.00	9:51:00	0	0.00	14:36:00	0	0.00
10:11:15	0	0.00	15:51:15	0	0.00	9:51:15	0	0.00	14:36:15	0	0.00
10:11:30	0	0.00	15:51:30	0	0.00	9:51:30	0	0.00	14:36:30	0	0.00
10:11:45	0	0.00	15:51:45	0	0.00	9:51:45	0	0.00	14:36:45	0	0.00
10:12:00	0	0.00	15:52:00	0	0.00	9:52:00	0	0.00	14:37:00	0	0.00
10:12:15	0	0.00	15:52:15	0	0.00	9:52:15	0	0.00	14:37:15	0	0.00
10:12:30	0	0.00	15:52:30	0	0.00	9:52:30	0	0.00	14:37:30	0	0.00
10:12:45	0	0.00	15:52:45	0	0.00	9:52:45	0	0.00	14:37:45	0	0.00
10:13:00	0	0.00	15:53:00	0	0.00	9:53:00	0	0.00	14:38:00	0	0.00
10:13:15	0	0.00	15:53:15	0	0.00	9:53:15	0	0.00	14:38:15	0	0.00
10:13:30	0	0.00	15:53:30	0	0.00	9:53:30	0	0.00	14:38:30	0	0.00
10:13:45	0	0.00	15:53:45	0	0.00	9:53:45	0	0.00	14:38:45	0	0.00
10:14:00	0	0.00	15:54:00	0	0.00	9:54:00	0	0.00	14:39:00	0	0.00
10:14:15	0	0.00	15:54:15	0	0.00	9:54:15	0	0.00	14:39:15	0	0.00
10:14:30	0	0.00	15:54:30	0	0.00	9:54:30	0	0.00	14:39:30	0	0.00
10:14:45	0	0.00	15:54:45	0	0.00	9:54:45	0	0.00	14:39:45	0	0.00
10:15:00	0	0.00	15:55:00	0	0.00	9:55:00	0	0.00	14:40:00	0	0.00
10:15:15	0	0.00	15:55:15	0	0.00	9:55:15	0	0.00	14:40:15	0	0.00
10:15:30	0	0.00	15:55:30	0	0.00	9:55:30	0	0.00	14:40:30	0	0.00
10:15:45	0	0.00	15:55:45	0	0.00	9:55:45	0	0.00	14:40:45	0	0.00
10:16:00	0	0.00	15:56:00	0	0.00	9:56:00	0	0.00	14:41:00	0	0.00
10:16:15	0	0.00	15:56:15	0	0.00	9:56:15	0	0.00	14:41:15	0	0.00
10:16:30	0	0.00	15:56:30	0	0.00	9:56:30	0	0.00	14:41:30	0	0.00
10:16:45	0	0.00	15:56:45	0	0.00	9:56:45	0	0.00	14:41:45	0	0.00
10:17:00	0	0.00	15:57:00	0	0.00	9:57:00	0	0.00	14:42:00	0	0.00
10:17:15	0	0.00	15:57:15	0	0.00	9:57:15	0	0.00	14:42:15	0	0.00
10:17:30	0	0.00	15:57:30	0	0.00	9:57:30	0	0.00	14:42:30	0	0.00
10:17:45	0	0.00	15:57:45	0	0.00	9:57:45	0	0.00	14:42:45	0	0.00
10:18:00	0	0.00	15:58:00	0	0.00	9:58:00	0	0.00	14:43:00	0	0.00
10:18:15	0	0.00	15:58:15	0	0.00	9:58:15	0	0.00	14:43:15	0	0.00
10:18:30	0	0.00	15:58:30	0	0.00	9:58:30	0	0.00	14:43:30	0	0.00
10:18:45	0	0.00	15:58:45	0	0.00	9:58:45	0	0.00	14:43:45	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1			TEST 2			TEST 3			TEST 4 (Incomplete)		
August 15, 2000			August 15, 2000			August 16, 2000			August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
10:19:00	0	0.00	15:59:00	0	0.00	9:59:00	0	0.00	14:44:00	0	0.00
10:19:15	0	0.00	15:59:15	0	0.00	9:59:15	0	0.00	14:44:15	0	0.00
10:19:30	0	0.00	15:59:30	0	0.00	9:59:30	0	0.00	14:44:30	0	0.00
10:19:45	0	0.00	15:59:45	0	0.00	9:59:45	0	0.00	14:44:45	0	0.00
10:20:00	0	0.00	16:00:00	0	0.00	10:00:00	0	0.00	14:45:00	0	0.00
10:20:15	0	0.00	16:00:15	0	0.00	10:00:15	0	0.00	14:45:15	0	0.00
10:20:30	0	0.00	16:00:30	0	0.00	10:00:30	0	0.00	14:45:30	0	0.00
10:20:45	0	0.00	16:00:45	0	0.00	10:00:45	0	0.00	14:45:45	0	0.00
10:21:00	0	0.00	16:01:00	0	0.00	10:01:00	0	0.00	14:46:00	0	0.00
10:21:15	0	0.00	16:01:15	0	0.00	10:01:15	0	0.00	14:46:15	0	0.00
10:21:30	0	0.00	16:01:30	0	0.00	10:01:30	0	0.00	14:46:30	0	0.00
10:21:45	0	0.00	16:01:45	0	0.00	10:01:45	0	0.00	14:46:45	0	0.00
10:22:00	0	0.00	16:02:00	0	0.00	10:02:00	0	0.00	14:47:00	0	0.00
10:22:15	0	0.00	16:02:15	0	0.00	10:02:15	0	0.00	14:47:15	0	0.00
10:22:30	0	0.00	16:02:30	0	0.00	10:02:30	0	0.00	14:47:30	0	0.00
10:22:45	0	0.00	16:02:45	0	0.00	10:02:45	0	0.00	14:47:45	0	0.00
10:23:00	0	0.00	16:03:00	0	0.00	10:03:00	0	0.00	14:48:00	0	0.00
10:23:15	0	0.00	16:03:15	0	0.00	10:03:15	0	0.00	14:48:15	0	0.00
10:23:30	0	0.00	16:03:30	0	0.00	10:03:30	0	0.00	14:48:30	0	0.00
10:23:45	0	0.00	16:03:45	0	0.00	10:03:45	0	0.00	14:48:45	0	0.00
10:24:00	0	0.00	16:04:00	0	0.00	10:04:00	0	0.00	14:49:00	0	0.00
10:24:15	0	0.00	16:04:15	0	0.00	10:04:15	0	0.00	14:49:15	0	0.00
10:24:30	0	0.00	16:04:30	0	0.00	10:04:30	0	0.00	14:49:30	0	0.00
10:24:45	0	0.00	16:04:45	0	0.00	10:04:45	0	0.00	14:49:45	0	0.00
10:25:00	0	0.00	16:05:00	0	0.00	10:05:00	0	0.00	14:50:00	0	0.00
10:25:15	0	0.00	16:05:15	0	0.00	10:05:15	0	0.00	14:50:15	0	0.00
10:25:30	0	0.00	16:05:30	0	0.00	10:05:30	0	0.00	14:50:30	0	0.00
10:25:45	0	0.00	16:05:45	0	0.00	10:05:45	0	0.00	14:50:45	0	0.00
10:26:00	0	0.00	16:06:00	0	0.00	10:06:00	0	0.00	14:51:00	0	0.00
10:26:15	0	0.00	16:06:15	0	0.00	10:06:15	0	0.00	14:51:15	0	0.00
10:26:30	0	0.00	16:06:30	0	0.00	10:06:30	0	0.00	14:51:30	0	0.00
10:26:45	0	0.00	16:06:45	0	0.00	10:06:45	0	0.00	14:51:45	0	0.00
10:27:00	0	0.00	16:07:00	0	0.00	10:07:00	0	0.00	14:52:00	0	0.00
10:27:15	0	0.00	16:07:15	0	0.00	10:07:15	0	0.00	14:52:15	0	0.00
10:27:30	0	0.00	16:07:30	0	0.00	10:07:30	0	0.00	14:52:30	0	0.00
10:27:45	0	0.00	16:07:45	0	0.00	10:07:45	0	0.00	14:52:45	0	0.00
10:28:00	0	0.00	16:08:00	0	0.00	10:08:00	0	0.00	14:53:00	0	0.00
10:28:15	0	0.00	16:08:15	0	0.00	10:08:15	0	0.00	14:53:15	0	0.00
10:28:30	0	0.00	16:08:30	0	0.00	10:08:30	0	0.00	14:53:30	0	0.00
10:28:45	0	0.00	16:08:45	0	0.00	10:08:45	0	0.00	14:53:45	0	0.00
10:29:00	0	0.00	16:09:00	0	0.00	10:09:00	0	0.00	14:54:00	0	0.00
10:29:15	0	0.00	16:09:15	0	0.00	10:09:15	0	0.00	14:54:15	0	0.00
10:29:30	0	0.00	16:09:30	0	0.00	10:09:30	0	0.00	14:54:30	0	0.00
10:29:45	0	0.00	16:09:45	0	0.00	10:09:45	0	0.00	14:54:45	0	0.00
10:30:00	0	0.00	16:10:00	0	0.00	10:10:00	0	0.00	14:55:00	0	0.00
10:30:15	0	0.00	16:10:15	0	0.00	10:10:15	0	0.00	14:55:15	0	0.00
10:30:30	0	0.00	16:10:30	0	0.00	10:10:30	0	0.00	14:55:30	0	0.00
10:30:45	0	0.00	16:10:45	0	0.00	10:10:45	0	0.00	14:55:45	0	0.00
10:31:00	0	0.00	16:11:00	0	0.00	10:11:00	0	0.00	14:56:00	0	0.00
10:31:15	0	0.00	16:11:15	0	0.00	10:11:15	0	0.00	14:56:15	0	0.00
10:31:30	0	0.00	16:11:30	0	0.00	10:11:30	0	0.00	14:56:30	0	0.00
10:31:45	0	0.00	16:11:45	0	0.00	10:11:45	0	0.00	14:56:45	0	0.00
10:32:00	0	0.00	16:12:00	0	0.00	10:12:00	0	0.00	14:57:00	0	0.00
10:32:15	0	0.00	16:12:15	0	0.00	10:12:15	0	0.00	14:57:15	0	0.00
10:32:30	0	0.00	16:12:30	0	0.00	10:12:30	0	0.00	14:57:30	0	0.00
10:32:45	0	0.00	16:12:45	0	0.00	10:12:45	0	0.00	14:57:45	0	0.00
10:33:00	0	0.00	16:13:00	0	0.00	10:13:00	0	0.00	14:58:00	0	0.00
10:33:15	0	0.00	16:13:15	0	0.00	10:13:15	0	0.00	14:58:15	0	0.00
10:33:30	0	0.00	16:13:30	0	0.00	10:13:30	0	0.00	14:58:30	0	0.00
10:33:45	0	0.00	16:13:45	0	0.00	10:13:45	0	0.00	14:58:45	0	0.00
10:34:00	0	0.00	16:14:00	0	0.00	10:14:00	0	0.00	14:59:00	0	0.00
10:34:15	0	0.00	16:14:15	0	0.00	10:14:15	0	0.00	14:59:15	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
10:34:30	0	0.00	16:14:30	0	0.00	10:14:30	0	0.00	14:59:30	0	0.00
10:34:45	0	0.00	16:14:45	0	0.00	10:14:45	0	0.00	14:59:45	0	0.00
10:35:00	0	0.00	16:15:00	0	0.00	10:15:00	0	0.00	15:00:00	0	0.00
10:35:15	0	0.00	16:15:15	0	0.00	10:15:15	0	0.00	15:00:15	0	0.00
10:35:30	0	0.00	16:15:30	0	0.00	10:15:30	0	0.00	15:00:30	0	0.00
10:35:45	0	0.00	16:15:45	0	0.00	10:15:45	0	0.00	15:00:45	0	0.00
10:36:00	0	0.00	16:16:00	0	0.00	10:16:00	0	0.00	15:01:00	0	0.00
10:36:15	0	0.00	16:16:15	0	0.00	10:16:15	0	0.00	15:01:15	0	0.00
10:36:30	0	0.00	16:16:30	0	0.00	10:16:30	0	0.00	15:01:30	0	0.00
10:36:45	0	0.00	16:16:45	0	0.00	10:16:45	0	0.00	15:01:45	0	0.00
10:37:00	0	0.00	16:17:00	0	0.00	10:17:00	0	0.00	15:02:00	0	0.00
10:37:15	0	0.00	16:17:15	0	0.00	10:17:15	0	0.00	15:02:15	0	0.00
10:37:30	0	0.00	16:17:30	0	0.00	10:17:30	0	0.00	15:02:30	0	0.00
10:37:45	0	0.00	16:17:45	0	0.00	10:17:45	0	0.00	15:02:45	0	0.00
10:38:00	0	0.00	16:18:00	0	0.00	10:18:00	0	0.00	Test Terminated		
10:38:15	0	0.00	16:18:15	0	0.00	10:18:15	0	0.00			
10:38:30	0	0.00	16:18:30	0	0.00	10:18:30	0	0.00			
10:38:45	0	0.00	16:18:45	0	0.00	10:18:45	0	0.00			
10:39:00	0	0.00	16:19:00	0	0.00	10:19:00	0	0.00			
10:39:15	0	0.00	16:19:15	0	0.00	10:19:15	0	0.00			
10:39:30	0	0.00	16:19:30	0	0.00	10:19:30	0	0.00			
10:39:45	0	0.00	16:19:45	0	0.00	10:19:45	0	0.00			
10:40:00	0	0.00	16:20:00	0	0.00	10:20:00	0	0.00			
10:40:15	0	0.00	16:20:15	0	0.00	10:20:15	0	0.00			
10:40:30	0	0.00	16:20:30	0	0.00	10:20:30	0	0.00			
10:40:45	0	0.00	16:20:45	0	0.00	10:20:45	0	0.00			
10:41:00	0	0.00	16:21:00	0	0.00	10:21:00	0	0.00			
10:41:15	0	0.00	16:21:15	0	0.00	10:21:15	0	0.00			
10:41:30	0	0.00	16:21:30	0	0.00	10:21:30	0	0.00			
10:41:45	0	0.00	16:21:45	0	0.00	10:21:45	0	0.00			
10:42:00	0	0.00	16:22:00	0	0.00	10:22:00	0	0.00			
10:42:15	0	0.00	16:22:15	0	0.00	10:22:15	0	0.00			
10:42:30	0	0.00	16:22:30	0	0.00	10:22:30	0	0.00			
10:42:45	0	0.00	16:22:45	0	0.00	10:22:45	0	0.00			
10:43:00	0	0.00	16:23:00	0	0.00	10:23:00	0	0.00			
10:43:15	0	0.00	16:23:15	0	0.00	10:23:15	0	0.00			
10:43:30	0	0.00	16:23:30	0	0.00	10:23:30	0	0.00			
10:43:45	0	0.00	16:23:45	0	0.00	10:23:45	0	0.00			
10:44:00	0	0.00	16:24:00	0	0.00	10:24:00	0	0.00			
10:44:15	0	0.00	16:24:15	0	0.00	10:24:15	0	0.00			
10:44:30	0	0.00	16:24:30	0	0.00	10:24:30	0	0.00			
10:44:45	0	0.00	16:24:45	0	0.00	10:24:45	0	0.00			
10:45:00	0	0.00	16:25:00	0	0.00	10:25:00	0	0.00			
10:45:15	0	0.00	16:25:15	0	0.00	10:25:15	0	0.00			
10:45:30	0	0.00	16:25:30	0	0.00	10:25:30	0	0.00			
10:45:45	0	0.00	16:25:45	0	0.00	10:25:45	0	0.00			
10:46:00	0	0.00	16:26:00	0	0.00	10:26:00	0	0.00			
10:46:15	0	0.00	16:26:15	0	0.00	10:26:15	0	0.00			
10:46:30	0	0.00	16:26:30	0	0.00	10:26:30	0	0.00			
10:46:45	0	0.00	16:26:45	0	0.00	10:26:45	0	0.00			
10:47:00	0	0.00	16:27:00	0	0.00	10:27:00	0	0.00			
10:47:15	0	0.00	16:27:15	0	0.00	10:27:15	0	0.00			
10:47:30	0	0.00	16:27:30	0	0.00	10:27:30	0	0.00			
10:47:45	0	0.00	16:27:45	0	0.00	10:27:45	0	0.00			
10:48:00	0	0.00	16:28:00	0	0.00	10:28:00	0	0.00			
10:48:15	0	0.00	16:28:15	0	0.00	10:28:15	0	0.00			
10:48:30	0	0.00	16:28:30	0	0.00	10:28:30	0	0.00			
10:48:45	0	0.00	16:28:45	0	0.00	10:28:45	0	0.00			
10:49:00	0	0.00	16:29:00	0	0.00	10:29:00	0	0.00			
10:49:15	0	0.00	16:29:15	0	0.00	10:29:15	0	0.00			
10:49:30	0	0.00	16:29:30	0	0.00	10:29:30	0	0.00			
10:49:45	0	0.00	16:29:45	0	0.00	10:29:45	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
10:50:00	0	0.00	16:30:00	0	0.00	10:30:00	0	0.00			
10:50:15	0	0.00	16:30:15	0	0.00	10:30:15	0	0.00			
10:50:30	0	0.00	16:30:30	0	0.00	10:30:30	0	0.00			
10:50:45	0	0.00	16:30:45	0	0.00	10:30:45	0	0.00			
10:51:00	0	0.00	16:31:00	0	0.00	10:31:00	0	0.00			
10:51:15	0	0.00	16:31:15	0	0.00	10:31:15	0	0.00			
10:51:30	0	0.00	16:31:30	0	0.00	10:31:30	0	0.00			
10:51:45	0	0.00	16:31:45	0	0.00	10:31:45	0	0.00			
10:52:00	0	0.00	16:32:00	0	0.00	10:32:00	0	0.00			
10:52:15	0	0.00	16:32:15	0	0.00	10:32:15	0	0.00			
10:52:30	0	0.00	16:32:30	0	0.00	10:32:30	0	0.00			
10:52:45	0	0.00	16:32:45	0	0.00	10:32:45	0	0.00			
10:53:00	0	0.00	16:33:00	0	0.00	10:33:00	0	0.00			
10:53:15	0	0.00	16:33:15	0	0.00	10:33:15	0	0.00			
10:53:30	0	0.00	16:33:30	0	0.00	10:33:30	0	0.00			
10:53:45	0	0.00	16:33:45	0	0.00	10:33:45	0	0.00			
10:54:00	0	0.00	16:34:00	0	0.00	10:34:00	0	0.00			
10:54:15	0	0.00	16:34:15	0	0.00	10:34:15	0	0.00			
10:54:30	0	0.00	16:34:30	0	0.00	10:34:30	0	0.00			
10:54:45	0	0.00	16:34:45	0	0.00	10:34:45	0	0.00			
10:55:00	0	0.00	16:35:00	0	0.00	10:35:00	0	0.00			
10:55:15	0	0.00	16:35:15	0	0.00	10:35:15	0	0.00			
10:55:30	0	0.00	16:35:30	0	0.00	10:35:30	0	0.00			
10:55:45	0	0.00	16:35:45	0	0.00	10:35:45	0	0.00			
10:56:00	0	0.00	16:36:00	0	0.00	10:36:00	0	0.00			
10:56:15	0	0.00	16:36:15	0	0.00	10:36:15	0	0.00			
10:56:30	0	0.00	16:36:30	0	0.00	10:36:30	0	0.00			
10:56:45	0	0.00	16:36:45	0	0.00	10:36:45	0	0.00			
10:57:00	0	0.00	16:37:00	0	0.00	10:37:00	0	0.00			
10:57:15	0	0.00	16:37:15	0	0.00	10:37:15	0	0.00			
10:57:30	0	0.00	16:37:30	0	0.00	10:37:30	0	0.00			
10:57:45	0	0.00	16:37:45	0	0.00	10:37:45	0	0.00			
10:58:00	0	0.00	16:38:00	0	0.00	10:38:00	0	0.00			
10:58:15	0	0.00	16:38:15	0	0.00	10:38:15	0	0.00			
10:58:30	0	0.00	16:38:30	0	0.00	10:38:30	0	0.00			
10:58:45	0	0.00	16:38:45	0	0.00	10:38:45	0	0.00			
10:59:00	0	0.00	16:39:00	0	0.00	10:39:00	0	0.00			
10:59:15	0	0.00	16:39:15	0	0.00	10:39:15	0	0.00			
10:59:30	0	0.00	16:39:30	0	0.00	10:39:30	0	0.00			
10:59:45	0	0.00	16:39:45	0	0.00	10:39:45	0	0.00			
11:00:00	0	0.00	16:40:00	0	0.00	10:40:00	0	0.00			
11:00:15	0	0.00	16:40:15	0	0.00	10:40:15	0	0.00			
11:00:30	0	0.00	16:40:30	0	0.00	10:40:30	0	0.00			
11:00:45	0	0.00	16:40:45	0	0.00	10:40:45	0	0.00			
11:01:00	0	0.00	16:41:00	0	0.00	10:41:00	0	0.00			
11:01:15	0	0.00	16:41:15	0	0.00	10:41:15	0	0.00			
11:01:30	0	0.00	16:41:30	0	0.00	10:41:30	0	0.00			
11:01:45	0	0.00	16:41:45	0	0.00	10:41:45	0	0.00			
11:02:00	0	0.00	16:42:00	0	0.00	10:42:00	0	0.00			
11:02:15	0	0.00	16:42:15	0	0.00	10:42:15	0	0.00			
11:02:30	0	0.00	16:42:30	0	0.00	10:42:30	0	0.00			
11:02:45	0	0.00	16:42:45	0	0.00	10:42:45	0	0.00			
11:03:00	0	0.00	16:43:00	0	0.00	10:43:00	0	0.00			
11:03:15	0	0.00	16:43:15	0	0.00	10:43:15	0	0.00			
11:03:30	0	0.00	16:43:30	0	0.00	10:43:30	0	0.00			
11:03:45	0	0.00	16:43:45	0	0.00	10:43:45	0	0.00			
11:04:00	0	0.00	16:44:00	0	0.00	10:44:00	0	0.00			
11:04:15	0	0.00	16:44:15	0	0.00	10:44:15	0	0.00			
11:04:30	0	0.00	16:44:30	0	0.00	10:44:30	0	0.00			
11:04:45	0	0.00	16:44:45	0	0.00	10:44:45	0	0.00			
11:05:00	0	0.00	16:45:00	0	0.00	10:45:00	0	0.00			
11:05:15	0	0.00	16:45:15	0	0.00	10:45:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:05:30	0	0.00	16:45:30	0	0.00	10:45:30	0	0.00			
11:05:45	0	0.00	16:45:45	0	0.00	10:45:45	0	0.00			
11:06:00	0	0.00	16:46:00	0	0.00	10:46:00	0	0.00			
11:06:15	0	0.00	16:46:15	0	0.00	10:46:15	0	0.00			
11:06:30	0	0.00	16:46:30	0	0.00	10:46:30	0	0.00			
11:06:45	0	0.00	16:46:45	0	0.00	10:46:45	0	0.00			
11:07:00	0	0.00	16:47:00	0	0.00	10:47:00	0	0.00			
11:07:15	0	0.00	16:47:15	0	0.00	10:47:15	0	0.00			
11:07:30	0	0.00	16:47:30	0	0.00	10:47:30	0	0.00			
11:07:45	0	0.00	16:47:45	0	0.00	10:47:45	0	0.00			
11:08:00	0	0.00	16:48:00	0	0.00	10:48:00	0	0.00			
11:08:15	0	0.00	16:48:15	0	0.00	10:48:15	0	0.00			
11:08:30	0	0.00	16:48:30	0	0.00	10:48:30	0	0.00			
11:08:45	0	0.00	16:48:45	0	0.00	10:48:45	0	0.00			
11:09:00	0	0.00	16:49:00	0	0.00	10:49:00	0	0.00			
11:09:15	0	0.00	16:49:15	0	0.00	10:49:15	0	0.00			
11:09:30	0	0.00	16:49:30	0	0.00	10:49:30	0	0.00			
11:09:45	0	0.00	16:49:45	0	0.00	10:49:45	0	0.00			
11:10:00	0	0.00	16:50:00	0	0.00	10:50:00	0	0.00			
11:10:15	0	0.00	16:50:15	0	0.00	10:50:15	0	0.00			
11:10:30	0	0.00	16:50:30	0	0.00	10:50:30	0	0.00			
11:10:45	0	0.00	16:50:45	0	0.00	10:50:45	0	0.00			
11:11:00	0	0.00	16:51:00	0	0.00	10:51:00	0	0.00			
11:11:15	0	0.00	16:51:15	0	0.00	10:51:15	0	0.00			
11:11:30	0	0.00	16:51:30	0	0.00	10:51:30	0	0.00			
11:11:45	0	0.00	16:51:45	0	0.00	10:51:45	0	0.00			
11:12:00	0	0.00	16:52:00	0	0.00	10:52:00	0	0.00			
11:12:15	0	0.00	16:52:15	0	0.00	10:52:15	0	0.00			
11:12:30	0	0.00	16:52:30	0	0.00	10:52:30	0	0.00			
11:12:45	0	0.00	16:52:45	0	0.00	10:52:45	0	0.00			
11:13:00	0	0.00	16:53:00	0	0.00	10:53:00	0	0.00			
11:13:15	0	0.00	16:53:15	0	0.00	10:53:15	0	0.00			
11:13:30	0	0.00	16:53:30	0	0.00	10:53:30	0	0.00			
11:13:45	0	0.00	16:53:45	0	0.00	10:53:45	0	0.00			
11:14:00	0	0.00	16:54:00	0	0.00	10:54:00	0	0.00			
11:14:15	0	0.00	16:54:15	0	0.00	10:54:15	0	0.00			
11:14:30	0	0.00	16:54:30	0	0.00	10:54:30	0	0.00			
11:14:45	0	0.00	16:54:45	0	0.00	10:54:45	0	0.00			
11:15:00	0	0.00	16:55:00	0	0.00	10:55:00	0	0.00			
11:15:15	0	0.00	16:55:15	0	0.00	10:55:15	0	0.00			
11:15:30	0	0.00	16:55:30	0	0.00	10:55:30	0	0.00			
11:15:45	0	0.00	16:55:45	0	0.00	10:55:45	0	0.00			
11:16:00	0	0.00	16:56:00	0	0.00	10:56:00	0	0.00			
11:16:15	0	0.00	16:56:15	0	0.00	10:56:15	0	0.00			
11:16:30	0	0.00	16:56:30	0	0.00	10:56:30	0	0.00			
11:16:45	0	0.00	16:56:45	0	0.00	10:56:45	0	0.00			
11:17:00	0	0.00	16:57:00	0	0.00	10:57:00	0	0.00			
11:17:15	0	0.00	16:57:15	0	0.00	10:57:15	0	0.00			
11:17:30	0	0.00	16:57:30	0	0.00	10:57:30	0	0.00			
11:17:45	0	0.00	16:57:45	0	0.00	10:57:45	0	0.00			
11:18:00	0	0.00	16:58:00	0	0.00	10:58:00	0	0.00			
11:18:15	0	0.00	16:58:15	0	0.00	10:58:15	0	0.00			
11:18:30	0	0.00	16:58:30	0	0.00	10:58:30	0	0.00			
11:18:45	0	0.00	16:58:45	0	0.00	10:58:45	0	0.00			
11:19:00	0	0.00	16:59:00	0	0.00	10:59:00	0	0.00			
11:19:15	0	0.00	16:59:15	0	0.00	10:59:15	0	0.00			
11:19:30	0	0.00	16:59:30	0	0.00	10:59:30	0	0.00			
11:19:45	0	0.00	16:59:45	0	0.00	10:59:45	0	0.00			
11:20:00	0	0.00	17:00:00	0	0.00	11:00:00	0	0.00			
11:20:15	0	0.00	17:00:15	0	0.00	11:00:15	0	0.00			
11:20:30	0	0.00	17:00:30	0	0.00	11:00:30	0	0.00			
11:20:45	0	0.00	17:00:45	0	0.00	11:00:45	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:21:00	0	0.00	17:01:00	0	0.00	11:01:00	0	0.00			
11:21:15	0	0.00	17:01:15	0	0.00	11:01:15	0	0.00			
11:21:30	0	0.00	17:01:30	0	0.00	11:01:30	0	0.00			
11:21:45	0	0.00	17:01:45	0	0.00	11:01:45	0	0.00			
11:22:00	0	0.00	17:02:00	0	0.00	11:02:00	0	0.00			
11:22:15	0	0.00	17:02:15	0	0.00	11:02:15	0	0.00			
11:22:30	0	0.00	17:02:30	0	0.00	11:02:30	0	0.00			
11:22:45	0	0.00	17:02:45	0	0.00	11:02:45	0	0.00			
11:23:00	0	0.00	17:03:00	0	0.00	11:03:00	0	0.00			
11:23:15	0	0.00	17:03:15	0	0.00	11:03:15	0	0.00			
11:23:30	0	0.00	17:03:30	0	0.00	11:03:30	0	0.00			
11:23:45	0	0.00	17:03:45	0	0.00	11:03:45	0	0.00			
11:24:00	0	0.00	17:04:00	0	0.00	11:04:00	0	0.00			
11:24:15	0	0.00	17:04:15	0	0.00	11:04:15	0	0.00			
11:24:30	0	0.00	17:04:30	0	0.00	11:04:30	0	0.00			
11:24:45	0	0.00	17:04:45	0	0.00	11:04:45	0	0.00			
11:25:00	0	0.00	17:05:00	0	0.00	11:05:00	0	0.00			
11:25:15	0	0.00	17:05:15	0	0.00	11:05:15	0	0.00			
11:25:30	0	0.00	17:05:30	0	0.00	11:05:30	0	0.00			
11:25:45	0	0.00	17:05:45	0	0.00	11:05:45	0	0.00			
11:26:00	0	0.00	17:06:00	0	0.00	11:06:00	0	0.00			
11:26:15	0	0.00	17:06:15	0	0.00	11:06:15	0	0.00			
11:26:30	0	0.00	17:06:30	0	0.00	11:06:30	0	0.00			
11:26:45	0	0.00	17:06:45	0	0.00	11:06:45	0	0.00			
11:27:00	0	0.00	17:07:00	0	0.00	11:07:00	0	0.00			
11:27:15	0	0.00	17:07:15	0	0.00	11:07:15	0	0.00			
11:27:30	0	0.00	17:07:30	0	0.00	11:07:30	0	0.00			
11:27:45	0	0.00	17:07:45	0	0.00	11:07:45	0	0.00			
11:28:00	0	0.00	17:08:00	0	0.00	11:08:00	0	0.00			
11:28:15	0	0.00	17:08:15	0	0.00	11:08:15	0	0.00			
11:28:30	0	0.00	17:08:30	0	0.00	11:08:30	0	0.00			
11:28:45	0	0.00	17:08:45	0	0.00	11:08:45	0	0.00			
11:29:00	0	0.00	17:09:00	0	0.00	11:09:00	0	0.00			
11:29:15	0	0.00	17:09:15	0	0.00	11:09:15	0	0.00			
11:29:30	0	0.00	17:09:30	0	0.00	11:09:30	0	0.00			
11:29:45	0	0.00	17:09:45	0	0.00	11:09:45	0	0.00			
11:30:00	0	0.00	17:10:00	0	0.00	11:10:00	0	0.00			
11:30:15	0	0.00	17:10:15	0	0.00	11:10:15	0	0.00			
11:30:30	0	0.00	17:10:30	0	0.00	11:10:30	0	0.00			
11:30:45	0	0.00	17:10:45	0	0.00	11:10:45	0	0.00			
11:31:00	0	0.00	17:11:00	0	0.00	11:11:00	0	0.00			
11:31:15	0	0.00	17:11:15	0	0.00	11:11:15	0	0.00			
11:31:30	0	0.00	17:11:30	0	0.00	11:11:30	0	0.00			
11:31:45	0	0.00	17:11:45	0	0.00	11:11:45	0	0.00			
11:32:00	0	0.00	17:12:00	0	0.00	11:12:00	0	0.00			
11:32:15	0	0.00	17:12:15	0	0.00	11:12:15	0	0.00			
11:32:30	0	0.00	17:12:30	0	0.00	11:12:30	0	0.00			
11:32:45	0	0.00	17:12:45	0	0.00	11:12:45	0	0.00			
11:33:00	0	0.00	17:13:00	0	0.00	11:13:00	0	0.00			
11:33:15	0	0.00	17:13:15	0	0.00	11:13:15	0	0.00			
11:33:30	0	0.00	17:13:30	0	0.00	11:13:30	0	0.00			
11:33:45	0	0.00	17:13:45	0	0.00	11:13:45	0	0.00			
11:34:00	0	0.00	17:14:00	0	0.00	11:14:00	0	0.00			
11:34:15	0	0.00	17:14:15	0	0.00	11:14:15	0	0.00			
11:34:30	0	0.00	17:14:30	0	0.00	11:14:30	0	0.00			
11:34:45	0	0.00	17:14:45	0	0.00	11:14:45	0	0.00			
11:35:00	0	0.00	17:15:00	0	0.00	11:15:00	0	0.00			
11:35:15	0	0.00	17:15:15	0	0.00	11:15:15	0	0.00			
11:35:30	0	0.00	17:15:30	0	0.00	11:15:30	0	0.00			
11:35:45	0	0.00	17:15:45	0	0.00	11:15:45	0	0.00			
11:36:00	0	0.00	17:16:00	0	0.00	11:16:00	0	0.00			
11:36:15	0	0.00	17:16:15	0	0.00	11:16:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:36:30	0	0.00	17:16:30	0	0.00	11:16:30	0	0.00			
11:36:45	0	0.00	17:16:45	0	0.00	11:16:45	0	0.00			
11:37:00	0	0.00	17:17:00	0	0.00	11:17:00	0	0.00			
11:37:15	0	0.00	17:17:15	0	0.00	11:17:15	0	0.00			
11:37:30	0	0.00	17:17:30	0	0.00	11:17:30	0	0.00			
11:37:45	0	0.00	17:17:45	0	0.00	11:17:45	0	0.00			
11:38:00	0	0.00	17:18:00	0	0.00	11:18:00	0	0.00			
11:38:15	0	0.00	17:18:15	0	0.00	11:18:15	0	0.00			
11:38:30	0	0.00	17:18:30	0	0.00	11:18:30	0	0.00			
11:38:45	0	0.00	17:18:45	0	0.00	11:18:45	0	0.00			
11:39:00	0	0.00	17:19:00	0	0.00	11:19:00	0	0.00			
11:39:15	0	0.00	17:19:15	0	0.00	11:19:15	0	0.00			
11:39:30	0	0.00	17:19:30	0	0.00	11:19:30	0	0.00			
11:39:45	0	0.00	17:19:45	0	0.00	11:19:45	0	0.00			
11:40:00	0	0.00	17:20:00	0	0.00	11:20:00	0	0.00			
11:40:15	0	0.00	17:20:15	0	0.00	11:20:15	0	0.00			
11:40:30	0	0.00	17:20:30	0	0.00	11:20:30	0	0.00			
11:40:45	0	0.00	17:20:45	0	0.00	11:20:45	0	0.00			
11:41:00	0	0.00	17:21:00	0	0.00	11:21:00	0	0.00			
11:41:15	0	0.00	17:21:15	0	0.00	11:21:15	0	0.00			
11:41:30	0	0.00	17:21:30	0	0.00	11:21:30	0	0.00			
11:41:45	0	0.00	17:21:45	0	0.00	11:21:45	0	0.00			
11:42:00	0	0.00	17:22:00	0	0.00	11:22:00	0	0.00			
11:42:15	0	0.00	17:22:15	0	0.00	11:22:15	0	0.00			
11:42:30	0	0.00	17:22:30	0	0.00	11:22:30	0	0.00			
11:42:45	0	0.00	17:22:45	0	0.00	11:22:45	0	0.00			
11:43:00	0	0.00	17:23:00	0	0.00	11:23:00	0	0.00			
11:43:15	0	0.00	17:23:15	0	0.00	11:23:15	0	0.00			
11:43:30	0	0.00	17:23:30	0	0.00	11:23:30	0	0.00			
11:43:45	0	0.00	17:23:45	0	0.00	11:23:45	0	0.00			
11:44:00	0	0.00	17:24:00	0	0.00	11:24:00	0	0.00			
11:44:15	0	0.00	17:24:15	0	0.00	11:24:15	0	0.00			
11:44:30	0	0.00	17:24:30	0	0.00	11:24:30	0	0.00			
11:44:45	0	0.00	17:24:45	0	0.00	11:24:45	0	0.00			
11:45:00	0	0.00	17:25:00	0	0.00	11:25:00	0	0.00			
11:45:15	0	0.00	17:25:15	0	0.00	11:25:15	0	0.00			
11:45:30	0	0.00	17:25:30	0	0.00	11:25:30	0	0.00			
11:45:45	0	0.00	17:25:45	0	0.00	11:25:45	0	0.00			
11:46:00	0	0.00	17:26:00	0	0.00	11:26:00	0	0.00			
11:46:15	0	0.00	17:26:15	0	0.00	11:26:15	0	0.00			
11:46:30	0	0.00	17:26:30	0	0.00	11:26:30	0	0.00			
11:46:45	0	0.00	17:26:45	0	0.00	11:26:45	0	0.00			
11:47:00	0	0.00	17:27:00	0	0.00	11:27:00	0	0.00			
11:47:15	0	0.00	17:27:15	0	0.00	11:27:15	0	0.00			
11:47:30	0	0.00	17:27:30	0	0.00	11:27:30	0	0.00			
11:47:45	0	0.00	17:27:45	0	0.00	11:27:45	0	0.00			
11:48:00	0	0.00	17:28:00	0	0.00	11:28:00	0	0.00			
11:48:15	0	0.00	17:28:15	0	0.00	11:28:15	0	0.00			
11:48:30	0	0.00	17:28:30	0	0.00	11:28:30	0	0.00			
11:48:45	0	0.00	17:28:45	0	0.00	11:28:45	0	0.00			
11:49:00	0	0.00	17:29:00	0	0.00	11:29:00	0	0.00			
11:49:15	0	0.00	17:29:15	0	0.00	11:29:15	0	0.00			
11:49:30	0	0.00	17:29:30	0	0.00	11:29:30	0	0.00			
11:49:45	0	0.00	17:29:45	0	0.00	11:29:45	0	0.00			
11:50:00	0	0.00	17:30:00	0	0.00	11:30:00	0	0.00			
11:50:15	0	0.00	17:30:15	0	0.00	11:30:15	0	0.00			
11:50:30	0	0.00	17:30:30	0	0.00	11:30:30	0	0.00			
11:50:45	0	0.00	17:30:45	0	0.00	11:30:45	0	0.00			
11:51:00	0	0.00	17:31:00	0	0.00	11:31:00	0	0.00			
11:51:15	0	0.00	17:31:15	0	0.00	11:31:15	0	0.00			
11:51:30	0	0.00	17:31:30	0	0.00	11:31:30	0	0.00			
11:51:45	0	0.00	17:31:45	0	0.00	11:31:45	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:52:00	0	0.00	17:32:00	0	0.00	11:32:00	0	0.00			
11:52:15	0	0.00	17:32:15	0	0.00	11:32:15	0	0.00			
11:52:30	0	0.00	17:32:30	0	0.00	11:32:30	0	0.00			
11:52:45	0	0.00	17:32:45	0	0.00	11:32:45	0	0.00			
11:53:00	0	0.00	17:33:00	0	0.00	11:33:00	0	0.00			
11:53:15	0	0.00	17:33:15	0	0.00	11:33:15	0	0.00			
11:53:30	0	0.00	17:33:30	0	0.00	11:33:30	0	0.00			
11:53:45	0	0.00	17:33:45	0	0.00	11:33:45	0	0.00			
11:54:00	0	0.00	17:34:00	0	0.00	11:34:00	0	0.00			
11:54:15	0	0.00	17:34:15	0	0.00	11:34:15	0	0.00			
11:54:30	0	0.00	17:34:30	0	0.00	11:34:30	0	0.00			
11:54:45	0	0.00	17:34:45	0	0.00	11:34:45	0	0.00			
11:55:00	0	0.00	17:35:00	0	0.00	11:35:00	0	0.00			
11:55:15	0	0.00	17:35:15	0	0.00	11:35:15	0	0.00			
11:55:30	0	0.00	17:35:30	0	0.00	11:35:30	0	0.00			
11:55:45	0	0.00	17:35:45	0	0.00	11:35:45	0	0.00			
11:56:00	0	0.00	17:36:00	0	0.00	11:36:00	0	0.00			
11:56:15	0	0.00	17:36:15	0	0.00	11:36:15	0	0.00			
11:56:30	0	0.00	17:36:30	0	0.00	11:36:30	0	0.00			
11:56:45	0	0.00	17:36:45	0	0.00	11:36:45	0	0.00			
11:57:00	0	0.00	17:37:00	0	0.00	11:37:00	0	0.00			
11:57:15	0	0.00	17:37:15	0	0.00	11:37:15	0	0.00			
11:57:30	0	0.00	17:37:30	0	0.00	11:37:30	0	0.00			
11:57:45	0	0.00	17:37:45	0	0.00	11:37:45	0	0.00			
11:58:00	0	0.00	17:38:00	0	0.00	11:38:00	0	0.00			
11:58:15	0	0.00	17:38:15	0	0.00	11:38:15	0	0.00			
11:58:30	0	0.00	17:38:30	0	0.00	11:38:30	0	0.00			
11:58:45	0	0.00	17:38:45	0	0.00	11:38:45	0	0.00			
11:59:00	0	0.00	17:39:00	0	0.00	11:39:00	0	0.00			
11:59:15	0	0.00	17:39:15	0	0.00	11:39:15	0	0.00			
11:59:30	0	0.00	17:39:30	0	0.00	11:39:30	0	0.00			
11:59:45	0	0.00	17:39:45	0	0.00	11:39:45	0	0.00			
12:00:00	0	0.00	17:40:00	0	0.00	11:40:00	0	0.00			
12:00:15	0	0.00	17:40:15	0	0.00	11:40:15	0	0.00			
12:00:30	0	0.00	17:40:30	0	0.00	11:40:30	0	0.00			
12:00:45	0	0.00	17:40:45	0	0.00	11:40:45	0	0.00			
12:01:00	0	0.00	17:41:00	0	0.00	11:41:00	0	0.00			
12:01:15	0	0.00	17:41:15	0	0.00	11:41:15	0	0.00			
12:01:30	0	0.00	17:41:30	0	0.00	11:41:30	0	0.00			
12:01:45	0	0.00	17:41:45	0	0.00	11:41:45	0	0.00			
12:02:00	0	0.00	17:42:00	0	0.00	11:42:00	0	0.00			
12:02:15	0	0.00	17:42:15	0	0.00	11:42:15	0	0.00			
12:02:30	0	0.00	17:42:30	0	0.00	11:42:30	0	0.00			
12:02:45	0	0.00	17:42:45	0	0.00	11:42:45	0	0.00			
12:03:00	0	0.00	17:43:00	0	0.00	11:43:00	0	0.00			
12:03:15	0	0.00	17:43:15	0	0.00	11:43:15	0	0.00			
12:03:30	0	0.00	17:43:30	0	0.00	11:43:30	0	0.00			
12:03:45	0	0.00	17:43:45	0	0.00	11:43:45	0	0.00			
12:04:00	0	0.00	17:44:00	0	0.00	11:44:00	0	0.00			
12:04:15	0	0.00	17:44:15	0	0.00	11:44:15	0	0.00			
12:04:30	0	0.00	17:44:30	0	0.00	11:44:30	0	0.00			
12:04:45	0	0.00	17:44:45	0	0.00	11:44:45	0	0.00			
12:05:00	0	0.00	17:45:00	0	0.00	11:45:00	0	0.00			
12:05:15	0	0.00	17:45:15	0	0.00	11:45:15	0	0.00			
12:05:30	0	0.00	17:45:30	0	0.00	11:45:30	0	0.00			
12:05:45	0	0.00	17:45:45	0	0.00	11:45:45	0	0.00			
12:06:00	0	0.00	17:46:00	0	0.00	11:46:00	0	0.00			
12:06:15	0	0.00	17:46:15	0	0.00	11:46:15	0	0.00			
12:06:30	0	0.00	17:46:30	0	0.00	11:46:30	0	0.00			
12:06:45	0	0.00	17:46:45	0	0.00	11:46:45	0	0.00			
12:07:00	0	0.00	17:47:00	0	0.00	11:47:00	0	0.00			
12:07:15	0	0.00	17:47:15	0	0.00	11:47:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
12:07:30	0	0.00	17:47:30	0	0.00	11:47:30	0	0.00			
12:07:45	0	0.00	17:47:45	0	0.00	11:47:45	0	0.00			
12:08:00	0	0.00	17:48:00	0	0.00	11:48:00	0	0.00			
12:08:15	0	0.00	17:48:15	0	0.00	11:48:15	0	0.00			
12:08:30	0	0.00	17:48:30	0	0.00	11:48:30	0	0.00			
12:08:45	0	0.00	17:48:45	0	0.00	11:48:45	0	0.00			
12:09:00	0	0.00	17:49:00	0	0.00	11:49:00	0	0.00			
12:09:15	0	0.00	17:49:15	0	0.00	11:49:15	0	0.00			
12:09:30	0	0.00	17:49:30	0	0.00	11:49:30	0	0.00			
12:09:45	0	0.00	17:49:45	0	0.00	11:49:45	0	0.00			
12:10:00	0	0.00	17:50:00	0	0.00	11:50:00	0	0.00			
12:10:15	0	0.00	17:50:15	0	0.00	11:50:15	0	0.00			
12:10:30	0	0.00	17:50:30	0	0.00	11:50:30	0	0.00			
12:10:45	0	0.00	17:50:45	0	0.00	11:50:45	0	0.00			
12:11:00	0	0.00	17:51:00	0	0.00	11:51:00	0	0.00			
12:11:15	0	0.00	17:51:15	0	0.00	11:51:15	0	0.00			
12:11:30	0	0.00	17:51:30	0	0.00	11:51:30	0	0.00			
12:11:45	0	0.00	17:51:45	0	0.00	11:51:45	0	0.00			
12:12:00	0	0.00	17:52:00	0	0.00	11:52:00	0	0.00			
12:12:15	0	0.00	17:52:15	0	0.00	11:52:15	0	0.00			
12:12:30	0	0.00	17:52:30	0	0.00	11:52:30	0	0.00			
12:12:45	0	0.00	17:52:45	0	0.00	11:52:45	0	0.00			
12:13:00	0	0.00	17:53:00	0	0.00	11:53:00	0	0.00			
12:13:15	0	0.00	17:53:15	0	0.00	11:53:15	0	0.00			
12:13:30	0	0.00	17:53:30	0	0.00	11:53:30	0	0.00			
12:13:45	0	0.00	17:53:45	0	0.00	11:53:45	0	0.00			
12:14:00	0	0.00	17:54:00	0	0.00	11:54:00	0	0.00			
12:14:15	0	0.00	17:54:15	0	0.00	11:54:15	0	0.00			
12:14:30	0	0.00	17:54:30	0	0.00	11:54:30	0	0.00			
12:14:45	0	0.00	17:54:45	0	0.00	11:54:45	0	0.00			
VE Readings Completed			VE Readings Completed			VE Readings Completed					

TABLE 2-6. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL MELT SHOP

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:15:00	0		13:55:00	0		7:55:00	0		12:40:00	0	
8:15:15	0		13:55:15	0		7:55:15	0		12:40:15	0	
8:15:30	0		13:55:30	0		7:55:30	0		12:40:30	0	
8:15:45	0		13:55:45	0		7:55:45	0		12:40:45	0	
8:16:00	0		13:56:00	0		7:56:00	0		12:41:00	0	
8:16:15	0		13:56:15	0		7:56:15	0		12:41:15	0	
8:16:30	0		13:56:30	0		7:56:30	0		12:41:30	0	
8:16:45	0		13:56:45	0		7:56:45	0		12:41:45	0	
8:17:00	0		13:57:00	0		7:57:00	0		12:42:00	0	
8:17:15	0		13:57:15	0		7:57:15	0		12:42:15	0	
8:17:30	0		13:57:30	0		7:57:30	0		12:42:30	0	
8:17:45	0		13:57:45	0		7:57:45	0		12:42:45	0	
8:18:00	0		13:58:00	0		7:58:00	0		12:43:00	0	
8:18:15	0		13:58:15	0		7:58:15	0		12:43:15	0	
8:18:30	0		13:58:30	0		7:58:30	0		12:43:30	0	
8:18:45	0		13:58:45	0		7:58:45	0		12:43:45	0	
8:19:00	0		13:59:00	0		7:59:00	0		12:44:00	0	
8:19:15	0		13:59:15	0		7:59:15	0		12:44:15	0	
8:19:30	0		13:59:30	0		7:59:30	0		12:44:30	0	
8:19:45	0		13:59:45	0		7:59:45	0		12:44:45	0	
8:20:00	0		14:00:00	0		8:00:00	0		12:45:00	0	
8:20:15	0		14:00:15	0		8:00:15	0		12:45:15	0	
8:20:30	0		14:00:30	0		8:00:30	0		12:45:30	0	
8:20:45	0	0.00	14:00:45	0	0.00	8:00:45	0	0.00	12:45:45	0	0.00
8:21:00	0	0.00	14:01:00	0	0.00	8:01:00	0	0.00	12:46:00	0	0.00
8:21:15	0	0.00	14:01:15	0	0.00	8:01:15	0	0.00	12:46:15	0	0.00
8:21:30	0	0.00	14:01:30	0	0.00	8:01:30	0	0.00	12:46:30	0	0.00
8:21:45	0	0.00	14:01:45	0	0.00	8:01:45	0	0.00	12:46:45	0	0.00
8:22:00	0	0.00	14:02:00	0	0.00	8:02:00	0	0.00	12:47:00	0	0.00
8:22:15	0	0.00	14:02:15	0	0.00	8:02:15	0	0.00	12:47:15	0	0.00
8:22:30	0	0.00	14:02:30	0	0.00	8:02:30	0	0.00	12:47:30	0	0.00
8:22:45	0	0.00	14:02:45	0	0.00	8:02:45	0	0.00	12:47:45	0	0.00
8:23:00	0	0.00	14:03:00	0	0.00	8:03:00	0	0.00	12:48:00	0	0.00
8:23:15	0	0.00	14:03:15	0	0.00	8:03:15	0	0.00	12:48:15	0	0.00
8:23:30	0	0.00	14:03:30	0	0.00	8:03:30	0	0.00	12:48:30	0	0.00
8:23:45	0	0.00	14:03:45	0	0.00	8:03:45	0	0.00	12:48:45	0	0.00
8:24:00	0	0.00	14:04:00	0	0.00	8:04:00	0	0.00	12:49:00	0	0.00
8:24:15	0	0.00	14:04:15	0	0.00	8:04:15	0	0.00	12:49:15	0	0.00
8:24:30	0	0.00	14:04:30	0	0.00	8:04:30	0	0.00	12:49:30	0	0.00
8:24:45	0	0.00	14:04:45	0	0.00	8:04:45	0	0.00	12:49:45	0	0.00
8:25:00	0	0.00	14:05:00	0	0.00	8:05:00	0	0.00	12:50:00	0	0.00
8:25:15	0	0.00	14:05:15	0	0.00	8:05:15	0	0.00	12:50:15	0	0.00
8:25:30	0	0.00	14:05:30	0	0.00	8:05:30	0	0.00	12:50:30	0	0.00
8:25:45	0	0.00	14:05:45	0	0.00	8:05:45	0	0.00	12:50:45	0	0.00
8:26:00	0	0.00	14:06:00	0	0.00	8:06:00	0	0.00	12:51:00	0	0.00
8:26:15	0	0.00	14:06:15	0	0.00	8:06:15	0	0.00	12:51:15	0	0.00
8:26:30	0	0.00	14:06:30	0	0.00	8:06:30	0	0.00	12:51:30	0	0.00
8:26:45	0	0.00	14:06:45	0	0.00	8:06:45	0	0.00	12:51:45	0	0.00
8:27:00	0	0.00	14:07:00	0	0.00	8:07:00	0	0.00	12:52:00	0	0.00
8:27:15	0	0.00	14:07:15	0	0.00	8:07:15	0	0.00	12:52:15	0	0.00
8:27:30	0	0.00	14:07:30	0	0.00	8:07:30	0	0.00	12:52:30	0	0.00
8:27:45	0	0.00	14:07:45	0	0.00	8:07:45	0	0.00	12:52:45	0	0.00
8:28:00	0	0.00	14:08:00	0	0.00	8:08:00	0	0.00	12:53:00	0	0.00
8:28:15	0	0.00	14:08:15	0	0.00	8:08:15	0	0.00	12:53:15	0	0.00
8:28:30	0	0.00	14:08:30	0	0.00	8:08:30	0	0.00	12:53:30	0	0.00
8:28:45	0	0.00	14:08:45	0	0.00	8:08:45	0	0.00	12:53:45	0	0.00
8:29:00	0	0.00	14:09:00	0	0.00	8:09:00	0	0.00	12:54:00	0	0.00
8:29:15	0	0.00	14:09:15	0	0.00	8:09:15	0	0.00	12:54:15	0	0.00
8:29:30	0	0.00	14:09:30	0	0.00	8:09:30	0	0.00	12:54:30	0	0.00
8:29:45	0	0.00	14:09:45	0	0.00	8:09:45	0	0.00	12:54:45	0	0.00
8:30:00	0	0.00	14:10:00	0	0.00	8:10:00	0	0.00	12:55:00	0	0.00
8:30:15	0	0.00	14:10:15	0	0.00	8:10:15	0	0.00	12:55:15	0	0.00

TABLE 2-6. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL MELT SHOP

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:30:30	0	0.00	14:10:30	0	0.00	8:10:30	0	0.00	12:55:30	0	0.00
8:30:45	0	0.00	14:10:45	0	0.00	8:10:45	0	0.00	12:55:45	0	0.00
8:31:00	0	0.00	14:11:00	0	0.00	8:11:00	0	0.00	12:56:00	0	0.00
8:31:15	0	0.00	14:11:15	0	0.00	8:11:15	0	0.00	12:56:15	0	0.00
8:31:30	0	0.00	14:11:30	0	0.00	8:11:30	0	0.00	12:56:30	0	0.00
8:31:45	0	0.00	14:11:45	0	0.00	8:11:45	0	0.00	12:56:45	0	0.00
8:32:00	0	0.00	14:12:00	0	0.00	8:12:00	0	0.00	12:57:00	0	0.00
8:32:15	0	0.00	14:12:15	0	0.00	8:12:15	0	0.00	12:57:15	0	0.00
8:32:30	0	0.00	14:12:30	0	0.00	8:12:30	0	0.00	12:57:30	0	0.00
8:32:45	0	0.00	14:12:45	0	0.00	8:12:45	0	0.00	12:57:45	0	0.00
8:33:00	0	0.00	14:13:00	0	0.00	8:13:00	0	0.00	12:58:00	0	0.00
8:33:15	0	0.00	14:13:15	0	0.00	8:13:15	0	0.00	12:58:15	0	0.00
8:33:30	0	0.00	14:13:30	0	0.00	8:13:30	0	0.00	12:58:30	0	0.00
8:33:45	0	0.00	14:13:45	0	0.00	8:13:45	0	0.00	12:58:45	0	0.00
8:34:00	0	0.00	14:14:00	0	0.00	8:14:00	0	0.00	12:59:00	0	0.00
8:34:15	0	0.00	14:14:15	0	0.00	8:14:15	0	0.00	12:59:15	0	0.00
8:34:30	0	0.00	14:14:30	0	0.00	8:14:30	0	0.00	12:59:30	0	0.00
8:34:45	0	0.00	14:14:45	0	0.00	8:14:45	0	0.00	12:59:45	0	0.00
8:35:00	0	0.00	14:15:00	0	0.00	8:15:00	0	0.00	13:00:00	0	0.00
8:35:15	0	0.00	14:15:15	0	0.00	8:15:15	0	0.00	13:00:15	0	0.00
8:35:30	0	0.00	14:15:30	0	0.00	8:15:30	0	0.00	13:00:30	0	0.00
8:35:45	0	0.00	14:15:45	0	0.00	8:15:45	0	0.00	13:00:45	0	0.00
8:36:00	0	0.00	14:16:00	0	0.00	8:16:00	0	0.00	13:01:00	0	0.00
8:36:15	0	0.00	14:16:15	0	0.00	8:16:15	0	0.00	13:01:15	0	0.00
8:36:30	0	0.00	14:16:30	0	0.00	8:16:30	0	0.00	13:01:30	0	0.00
8:36:45	0	0.00	14:16:45	0	0.00	8:16:45	0	0.00	13:01:45	0	0.00
8:37:00	0	0.00	14:17:00	0	0.00	8:17:00	0	0.00	13:02:00	0	0.00
8:37:15	0	0.00	14:17:15	0	0.00	8:17:15	0	0.00	13:02:15	0	0.00
8:37:30	0	0.00	14:17:30	0	0.00	8:17:30	0	0.00	13:02:30	0	0.00
8:37:45	0	0.00	14:17:45	0	0.00	8:17:45	0	0.00	13:02:45	0	0.00
8:38:00	0	0.00	14:18:00	0	0.00	8:18:00	0	0.00	13:03:00	0	0.00
8:38:15	0	0.00	14:18:15	0	0.00	8:18:15	0	0.00	13:03:15	0	0.00
8:38:30	0	0.00	14:18:30	0	0.00	8:18:30	0	0.00	13:03:30	0	0.00
8:38:45	0	0.00	14:18:45	0	0.00	8:18:45	0	0.00	13:03:45	0	0.00
8:39:00	0	0.00	14:19:00	0	0.00	8:19:00	0	0.00	13:04:00	0	0.00
8:39:15	0	0.00	14:19:15	0	0.00	8:19:15	0	0.00	13:04:15	0	0.00
8:39:30	0	0.00	14:19:30	0	0.00	8:19:30	0	0.00	13:04:30	0	0.00
8:39:45	0	0.00	14:19:45	0	0.00	8:19:45	0	0.00	13:04:45	0	0.00
8:40:00	0	0.00	14:20:00	0	0.00	8:20:00	0	0.00	13:05:00	0	0.00
8:40:15	0	0.00	14:20:15	0	0.00	8:20:15	0	0.00	13:05:15	0	0.00
8:40:30	0	0.00	14:20:30	0	0.00	8:20:30	0	0.00	13:05:30	0	0.00
8:40:45	0	0.00	14:20:45	0	0.00	8:20:45	0	0.00	13:05:45	0	0.00
8:41:00	0	0.00	14:21:00	0	0.00	8:21:00	0	0.00	13:06:00	0	0.00
8:41:15	0	0.00	14:21:15	0	0.00	8:21:15	0	0.00	13:06:15	0	0.00
8:41:30	0	0.00	14:21:30	0	0.00	8:21:30	0	0.00	13:06:30	0	0.00
8:41:45	0	0.00	14:21:45	0	0.00	8:21:45	0	0.00	13:06:45	0	0.00
8:42:00	0	0.00	14:22:00	0	0.00	8:22:00	0	0.00	13:07:00	0	0.00
8:42:15	0	0.00	14:22:15	0	0.00	8:22:15	0	0.00	13:07:15	0	0.00
8:42:30	0	0.00	14:22:30	0	0.00	8:22:30	0	0.00	13:07:30	0	0.00
8:42:45	0	0.00	14:22:45	0	0.00	8:22:45	0	0.00	13:07:45	0	0.00
8:43:00	0	0.00	14:23:00	0	0.00	8:23:00	0	0.00	13:08:00	0	0.00
8:43:15	0	0.00	14:23:15	0	0.00	8:23:15	0	0.00	13:08:15	0	0.00
8:43:30	0	0.00	14:23:30	0	0.00	8:23:30	0	0.00	13:08:30	0	0.00
8:43:45	0	0.00	14:23:45	0	0.00	8:23:45	0	0.00	13:08:45	0	0.00
8:44:00	0	0.00	14:24:00	0	0.00	8:24:00	0	0.00	13:09:00	0	0.00
8:44:15	0	0.00	14:24:15	0	0.00	8:24:15	0	0.00	13:09:15	0	0.00
8:44:30	0	0.00	14:24:30	0	0.00	8:24:30	0	0.00	13:09:30	0	0.00
8:44:45	0	0.00	14:24:45	0	0.00	8:24:45	0	0.00	13:09:45	0	0.00
8:45:00	0	0.00	14:25:00	0	0.00	8:25:00	0	0.00	13:10:00	0	0.00
8:45:15	0	0.00	14:25:15	0	0.00	8:25:15	0	0.00	13:10:15	0	0.00
8:45:30	0	0.00	14:25:30	0	0.00	8:25:30	0	0.00	13:10:30	0	0.00
8:45:45	0	0.00	14:25:45	0	0.00	8:25:45	0	0.00	13:10:45	0	0.00

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
10:50:00	0	0.00	16:30:00	0	0.00	10:30:00	0	0.00			
10:50:15	0	0.00	16:30:15	0	0.00	10:30:15	0	0.00			
10:50:30	0	0.00	16:30:30	0	0.00	10:30:30	0	0.00			
10:50:45	0	0.00	16:30:45	0	0.00	10:30:45	0	0.00			
10:51:00	0	0.00	16:31:00	0	0.00	10:31:00	0	0.00			
10:51:15	0	0.00	16:31:15	0	0.00	10:31:15	0	0.00			
10:51:30	0	0.00	16:31:30	0	0.00	10:31:30	0	0.00			
10:51:45	0	0.00	16:31:45	0	0.00	10:31:45	0	0.00			
10:52:00	0	0.00	16:32:00	0	0.00	10:32:00	0	0.00			
10:52:15	0	0.00	16:32:15	0	0.00	10:32:15	0	0.00			
10:52:30	0	0.00	16:32:30	0	0.00	10:32:30	0	0.00			
10:52:45	0	0.00	16:32:45	0	0.00	10:32:45	0	0.00			
10:53:00	0	0.00	16:33:00	0	0.00	10:33:00	0	0.00			
10:53:15	0	0.00	16:33:15	0	0.00	10:33:15	0	0.00			
10:53:30	0	0.00	16:33:30	0	0.00	10:33:30	0	0.00			
10:53:45	0	0.00	16:33:45	0	0.00	10:33:45	0	0.00			
10:54:00	0	0.00	16:34:00	0	0.00	10:34:00	0	0.00			
10:54:15	0	0.00	16:34:15	0	0.00	10:34:15	0	0.00			
10:54:30	0	0.00	16:34:30	0	0.00	10:34:30	0	0.00			
10:54:45	0	0.00	16:34:45	0	0.00	10:34:45	0	0.00			
10:55:00	0	0.00	16:35:00	0	0.00	10:35:00	0	0.00			
10:55:15	0	0.00	16:35:15	0	0.00	10:35:15	0	0.00			
10:55:30	0	0.00	16:35:30	0	0.00	10:35:30	0	0.00			
10:55:45	0	0.00	16:35:45	0	0.00	10:35:45	0	0.00			
10:56:00	0	0.00	16:36:00	0	0.00	10:36:00	0	0.00			
10:56:15	0	0.00	16:36:15	0	0.00	10:36:15	0	0.00			
10:56:30	0	0.00	16:36:30	0	0.00	10:36:30	0	0.00			
10:56:45	0	0.00	16:36:45	0	0.00	10:36:45	0	0.00			
10:57:00	0	0.00	16:37:00	0	0.00	10:37:00	0	0.00			
10:57:15	0	0.00	16:37:15	0	0.00	10:37:15	0	0.00			
10:57:30	0	0.00	16:37:30	0	0.00	10:37:30	0	0.00			
10:57:45	0	0.00	16:37:45	0	0.00	10:37:45	0	0.00			
10:58:00	0	0.00	16:38:00	0	0.00	10:38:00	0	0.00			
10:58:15	0	0.00	16:38:15	0	0.00	10:38:15	0	0.00			
10:58:30	0	0.00	16:38:30	0	0.00	10:38:30	0	0.00			
10:58:45	0	0.00	16:38:45	0	0.00	10:38:45	0	0.00			
10:59:00	0	0.00	16:39:00	0	0.00	10:39:00	0	0.00			
10:59:15	0	0.00	16:39:15	0	0.00	10:39:15	0	0.00			
10:59:30	0	0.00	16:39:30	0	0.00	10:39:30	0	0.00			
10:59:45	0	0.00	16:39:45	0	0.00	10:39:45	0	0.00			
11:00:00	0	0.00	16:40:00	0	0.00	10:40:00	0	0.00			
11:00:15	0	0.00	16:40:15	0	0.00	10:40:15	0	0.00			
11:00:30	0	0.00	16:40:30	0	0.00	10:40:30	0	0.00			
11:00:45	0	0.00	16:40:45	0	0.00	10:40:45	0	0.00			
11:01:00	0	0.00	16:41:00	0	0.00	10:41:00	0	0.00			
11:01:15	0	0.00	16:41:15	0	0.00	10:41:15	0	0.00			
11:01:30	0	0.00	16:41:30	0	0.00	10:41:30	0	0.00			
11:01:45	0	0.00	16:41:45	0	0.00	10:41:45	0	0.00			
11:02:00	0	0.00	16:42:00	0	0.00	10:42:00	0	0.00			
11:02:15	0	0.00	16:42:15	0	0.00	10:42:15	0	0.00			
11:02:30	0	0.00	16:42:30	0	0.00	10:42:30	0	0.00			
11:02:45	0	0.00	16:42:45	0	0.00	10:42:45	0	0.00			
11:03:00	0	0.00	16:43:00	0	0.00	10:43:00	0	0.00			
11:03:15	0	0.00	16:43:15	0	0.00	10:43:15	0	0.00			
11:03:30	0	0.00	16:43:30	0	0.00	10:43:30	0	0.00			
11:03:45	0	0.00	16:43:45	0	0.00	10:43:45	0	0.00			
11:04:00	0	0.00	16:44:00	0	0.00	10:44:00	0	0.00			
11:04:15	0	0.00	16:44:15	0	0.00	10:44:15	0	0.00			
11:04:30	0	0.00	16:44:30	0	0.00	10:44:30	0	0.00			
11:04:45	0	0.00	16:44:45	0	0.00	10:44:45	0	0.00			
11:05:00	0	0.00	16:45:00	0	0.00	10:45:00	0	0.00			
11:05:15	0	0.00	16:45:15	0	0.00	10:45:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:05:30	0	0.00	16:45:30	0	0.00	10:45:30	0	0.00			
11:05:45	0	0.00	16:45:45	0	0.00	10:45:45	0	0.00			
11:06:00	0	0.00	16:46:00	0	0.00	10:46:00	0	0.00			
11:06:15	0	0.00	16:46:15	0	0.00	10:46:15	0	0.00			
11:06:30	0	0.00	16:46:30	0	0.00	10:46:30	0	0.00			
11:06:45	0	0.00	16:46:45	0	0.00	10:46:45	0	0.00			
11:07:00	0	0.00	16:47:00	0	0.00	10:47:00	0	0.00			
11:07:15	0	0.00	16:47:15	0	0.00	10:47:15	0	0.00			
11:07:30	0	0.00	16:47:30	0	0.00	10:47:30	0	0.00			
11:07:45	0	0.00	16:47:45	0	0.00	10:47:45	0	0.00			
11:08:00	0	0.00	16:48:00	0	0.00	10:48:00	0	0.00			
11:08:15	0	0.00	16:48:15	0	0.00	10:48:15	0	0.00			
11:08:30	0	0.00	16:48:30	0	0.00	10:48:30	0	0.00			
11:08:45	0	0.00	16:48:45	0	0.00	10:48:45	0	0.00			
11:09:00	0	0.00	16:49:00	0	0.00	10:49:00	0	0.00			
11:09:15	0	0.00	16:49:15	0	0.00	10:49:15	0	0.00			
11:09:30	0	0.00	16:49:30	0	0.00	10:49:30	0	0.00			
11:09:45	0	0.00	16:49:45	0	0.00	10:49:45	0	0.00			
11:10:00	0	0.00	16:50:00	0	0.00	10:50:00	0	0.00			
11:10:15	0	0.00	16:50:15	0	0.00	10:50:15	0	0.00			
11:10:30	0	0.00	16:50:30	0	0.00	10:50:30	0	0.00			
11:10:45	0	0.00	16:50:45	0	0.00	10:50:45	0	0.00			
11:11:00	0	0.00	16:51:00	0	0.00	10:51:00	0	0.00			
11:11:15	0	0.00	16:51:15	0	0.00	10:51:15	0	0.00			
11:11:30	0	0.00	16:51:30	0	0.00	10:51:30	0	0.00			
11:11:45	0	0.00	16:51:45	0	0.00	10:51:45	0	0.00			
11:12:00	0	0.00	16:52:00	0	0.00	10:52:00	0	0.00			
11:12:15	0	0.00	16:52:15	0	0.00	10:52:15	0	0.00			
11:12:30	0	0.00	16:52:30	0	0.00	10:52:30	0	0.00			
11:12:45	0	0.00	16:52:45	0	0.00	10:52:45	0	0.00			
11:13:00	0	0.00	16:53:00	0	0.00	10:53:00	0	0.00			
11:13:15	0	0.00	16:53:15	0	0.00	10:53:15	0	0.00			
11:13:30	0	0.00	16:53:30	0	0.00	10:53:30	0	0.00			
11:13:45	0	0.00	16:53:45	0	0.00	10:53:45	0	0.00			
11:14:00	0	0.00	16:54:00	0	0.00	10:54:00	0	0.00			
11:14:15	0	0.00	16:54:15	0	0.00	10:54:15	0	0.00			
11:14:30	0	0.00	16:54:30	0	0.00	10:54:30	0	0.00			
11:14:45	0	0.00	16:54:45	0	0.00	10:54:45	0	0.00			
11:15:00	0	0.00	16:55:00	0	0.00	10:55:00	0	0.00			
11:15:15	0	0.00	16:55:15	0	0.00	10:55:15	0	0.00			
11:15:30	0	0.00	16:55:30	0	0.00	10:55:30	0	0.00			
11:15:45	0	0.00	16:55:45	0	0.00	10:55:45	0	0.00			
11:16:00	0	0.00	16:56:00	0	0.00	10:56:00	0	0.00			
11:16:15	0	0.00	16:56:15	0	0.00	10:56:15	0	0.00			
11:16:30	0	0.00	16:56:30	0	0.00	10:56:30	0	0.00			
11:16:45	0	0.00	16:56:45	0	0.00	10:56:45	0	0.00			
11:17:00	0	0.00	16:57:00	0	0.00	10:57:00	0	0.00			
11:17:15	0	0.00	16:57:15	0	0.00	10:57:15	0	0.00			
11:17:30	0	0.00	16:57:30	0	0.00	10:57:30	0	0.00			
11:17:45	0	0.00	16:57:45	0	0.00	10:57:45	0	0.00			
11:18:00	0	0.00	16:58:00	0	0.00	10:58:00	0	0.00			
11:18:15	0	0.00	16:58:15	0	0.00	10:58:15	0	0.00			
11:18:30	0	0.00	16:58:30	0	0.00	10:58:30	0	0.00			
11:18:45	0	0.00	16:58:45	0	0.00	10:58:45	0	0.00			
11:19:00	0	0.00	16:59:00	0	0.00	10:59:00	0	0.00			
11:19:15	0	0.00	16:59:15	0	0.00	10:59:15	0	0.00			
11:19:30	0	0.00	16:59:30	0	0.00	10:59:30	0	0.00			
11:19:45	0	0.00	16:59:45	0	0.00	10:59:45	0	0.00			
11:20:00	0	0.00	17:00:00	0	0.00	11:00:00	0	0.00			
11:20:15	0	0.00	17:00:15	0	0.00	11:00:15	0	0.00			
11:20:30	0	0.00	17:00:30	0	0.00	11:00:30	0	0.00			
11:20:45	0	0.00	17:00:45	0	0.00	11:00:45	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:21:00	0	0.00	17:01:00	0	0.00	11:01:00	0	0.00			
11:21:15	0	0.00	17:01:15	0	0.00	11:01:15	0	0.00			
11:21:30	0	0.00	17:01:30	0	0.00	11:01:30	0	0.00			
11:21:45	0	0.00	17:01:45	0	0.00	11:01:45	0	0.00			
11:22:00	0	0.00	17:02:00	0	0.00	11:02:00	0	0.00			
11:22:15	0	0.00	17:02:15	0	0.00	11:02:15	0	0.00			
11:22:30	0	0.00	17:02:30	0	0.00	11:02:30	0	0.00			
11:22:45	0	0.00	17:02:45	0	0.00	11:02:45	0	0.00			
11:23:00	0	0.00	17:03:00	0	0.00	11:03:00	0	0.00			
11:23:15	0	0.00	17:03:15	0	0.00	11:03:15	0	0.00			
11:23:30	0	0.00	17:03:30	0	0.00	11:03:30	0	0.00			
11:23:45	0	0.00	17:03:45	0	0.00	11:03:45	0	0.00			
11:24:00	0	0.00	17:04:00	0	0.00	11:04:00	0	0.00			
11:24:15	0	0.00	17:04:15	0	0.00	11:04:15	0	0.00			
11:24:30	0	0.00	17:04:30	0	0.00	11:04:30	0	0.00			
11:24:45	0	0.00	17:04:45	0	0.00	11:04:45	0	0.00			
11:25:00	0	0.00	17:05:00	0	0.00	11:05:00	0	0.00			
11:25:15	0	0.00	17:05:15	0	0.00	11:05:15	0	0.00			
11:25:30	0	0.00	17:05:30	0	0.00	11:05:30	0	0.00			
11:25:45	0	0.00	17:05:45	0	0.00	11:05:45	0	0.00			
11:26:00	0	0.00	17:06:00	0	0.00	11:06:00	0	0.00			
11:26:15	0	0.00	17:06:15	0	0.00	11:06:15	0	0.00			
11:26:30	0	0.00	17:06:30	0	0.00	11:06:30	0	0.00			
11:26:45	0	0.00	17:06:45	0	0.00	11:06:45	0	0.00			
11:27:00	0	0.00	17:07:00	0	0.00	11:07:00	0	0.00			
11:27:15	0	0.00	17:07:15	0	0.00	11:07:15	0	0.00			
11:27:30	0	0.00	17:07:30	0	0.00	11:07:30	0	0.00			
11:27:45	0	0.00	17:07:45	0	0.00	11:07:45	0	0.00			
11:28:00	0	0.00	17:08:00	0	0.00	11:08:00	0	0.00			
11:28:15	0	0.00	17:08:15	0	0.00	11:08:15	0	0.00			
11:28:30	0	0.00	17:08:30	0	0.00	11:08:30	0	0.00			
11:28:45	0	0.00	17:08:45	0	0.00	11:08:45	0	0.00			
11:29:00	0	0.00	17:09:00	0	0.00	11:09:00	0	0.00			
11:29:15	0	0.00	17:09:15	0	0.00	11:09:15	0	0.00			
11:29:30	0	0.00	17:09:30	0	0.00	11:09:30	0	0.00			
11:29:45	0	0.00	17:09:45	0	0.00	11:09:45	0	0.00			
11:30:00	0	0.00	17:10:00	0	0.00	11:10:00	0	0.00			
11:30:15	0	0.00	17:10:15	0	0.00	11:10:15	0	0.00			
11:30:30	0	0.00	17:10:30	0	0.00	11:10:30	0	0.00			
11:30:45	0	0.00	17:10:45	0	0.00	11:10:45	0	0.00			
11:31:00	0	0.00	17:11:00	0	0.00	11:11:00	0	0.00			
11:31:15	0	0.00	17:11:15	0	0.00	11:11:15	0	0.00			
11:31:30	0	0.00	17:11:30	0	0.00	11:11:30	0	0.00			
11:31:45	0	0.00	17:11:45	0	0.00	11:11:45	0	0.00			
11:32:00	0	0.00	17:12:00	0	0.00	11:12:00	0	0.00			
11:32:15	0	0.00	17:12:15	0	0.00	11:12:15	0	0.00			
11:32:30	0	0.00	17:12:30	0	0.00	11:12:30	0	0.00			
11:32:45	0	0.00	17:12:45	0	0.00	11:12:45	0	0.00			
11:33:00	0	0.00	17:13:00	0	0.00	11:13:00	0	0.00			
11:33:15	0	0.00	17:13:15	0	0.00	11:13:15	0	0.00			
11:33:30	0	0.00	17:13:30	0	0.00	11:13:30	0	0.00			
11:33:45	0	0.00	17:13:45	0	0.00	11:13:45	0	0.00			
11:34:00	0	0.00	17:14:00	0	0.00	11:14:00	0	0.00			
11:34:15	0	0.00	17:14:15	0	0.00	11:14:15	0	0.00			
11:34:30	0	0.00	17:14:30	0	0.00	11:14:30	0	0.00			
11:34:45	0	0.00	17:14:45	0	0.00	11:14:45	0	0.00			
11:35:00	0	0.00	17:15:00	0	0.00	11:15:00	0	0.00			
11:35:15	0	0.00	17:15:15	0	0.00	11:15:15	0	0.00			
11:35:30	0	0.00	17:15:30	0	0.00	11:15:30	0	0.00			
11:35:45	0	0.00	17:15:45	0	0.00	11:15:45	0	0.00			
11:36:00	0	0.00	17:16:00	0	0.00	11:16:00	0	0.00			
11:36:15	0	0.00	17:16:15	0	0.00	11:16:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:36:30	0	0.00	17:16:30	0	0.00	11:16:30	0	0.00			
11:36:45	0	0.00	17:16:45	0	0.00	11:16:45	0	0.00			
11:37:00	0	0.00	17:17:00	0	0.00	11:17:00	0	0.00			
11:37:15	0	0.00	17:17:15	0	0.00	11:17:15	0	0.00			
11:37:30	0	0.00	17:17:30	0	0.00	11:17:30	0	0.00			
11:37:45	0	0.00	17:17:45	0	0.00	11:17:45	0	0.00			
11:38:00	0	0.00	17:18:00	0	0.00	11:18:00	0	0.00			
11:38:15	0	0.00	17:18:15	0	0.00	11:18:15	0	0.00			
11:38:30	0	0.00	17:18:30	0	0.00	11:18:30	0	0.00			
11:38:45	0	0.00	17:18:45	0	0.00	11:18:45	0	0.00			
11:39:00	0	0.00	17:19:00	0	0.00	11:19:00	0	0.00			
11:39:15	0	0.00	17:19:15	0	0.00	11:19:15	0	0.00			
11:39:30	0	0.00	17:19:30	0	0.00	11:19:30	0	0.00			
11:39:45	0	0.00	17:19:45	0	0.00	11:19:45	0	0.00			
11:40:00	0	0.00	17:20:00	0	0.00	11:20:00	0	0.00			
11:40:15	0	0.00	17:20:15	0	0.00	11:20:15	0	0.00			
11:40:30	0	0.00	17:20:30	0	0.00	11:20:30	0	0.00			
11:40:45	0	0.00	17:20:45	0	0.00	11:20:45	0	0.00			
11:41:00	0	0.00	17:21:00	0	0.00	11:21:00	0	0.00			
11:41:15	0	0.00	17:21:15	0	0.00	11:21:15	0	0.00			
11:41:30	0	0.00	17:21:30	0	0.00	11:21:30	0	0.00			
11:41:45	0	0.00	17:21:45	0	0.00	11:21:45	0	0.00			
11:42:00	0	0.00	17:22:00	0	0.00	11:22:00	0	0.00			
11:42:15	0	0.00	17:22:15	0	0.00	11:22:15	0	0.00			
11:42:30	0	0.00	17:22:30	0	0.00	11:22:30	0	0.00			
11:42:45	0	0.00	17:22:45	0	0.00	11:22:45	0	0.00			
11:43:00	0	0.00	17:23:00	0	0.00	11:23:00	0	0.00			
11:43:15	0	0.00	17:23:15	0	0.00	11:23:15	0	0.00			
11:43:30	0	0.00	17:23:30	0	0.00	11:23:30	0	0.00			
11:43:45	0	0.00	17:23:45	0	0.00	11:23:45	0	0.00			
11:44:00	0	0.00	17:24:00	0	0.00	11:24:00	0	0.00			
11:44:15	0	0.00	17:24:15	0	0.00	11:24:15	0	0.00			
11:44:30	0	0.00	17:24:30	0	0.00	11:24:30	0	0.00			
11:44:45	0	0.00	17:24:45	0	0.00	11:24:45	0	0.00			
11:45:00	0	0.00	17:25:00	0	0.00	11:25:00	0	0.00			
11:45:15	0	0.00	17:25:15	0	0.00	11:25:15	0	0.00			
11:45:30	0	0.00	17:25:30	0	0.00	11:25:30	0	0.00			
11:45:45	0	0.00	17:25:45	0	0.00	11:25:45	0	0.00			
11:46:00	0	0.00	17:26:00	0	0.00	11:26:00	0	0.00			
11:46:15	0	0.00	17:26:15	0	0.00	11:26:15	0	0.00			
11:46:30	0	0.00	17:26:30	0	0.00	11:26:30	0	0.00			
11:46:45	0	0.00	17:26:45	0	0.00	11:26:45	0	0.00			
11:47:00	0	0.00	17:27:00	0	0.00	11:27:00	0	0.00			
11:47:15	0	0.00	17:27:15	0	0.00	11:27:15	0	0.00			
11:47:30	0	0.00	17:27:30	0	0.00	11:27:30	0	0.00			
11:47:45	0	0.00	17:27:45	0	0.00	11:27:45	0	0.00			
11:48:00	0	0.00	17:28:00	0	0.00	11:28:00	0	0.00			
11:48:15	0	0.00	17:28:15	0	0.00	11:28:15	0	0.00			
11:48:30	0	0.00	17:28:30	0	0.00	11:28:30	0	0.00			
11:48:45	0	0.00	17:28:45	0	0.00	11:28:45	0	0.00			
11:49:00	0	0.00	17:29:00	0	0.00	11:29:00	0	0.00			
11:49:15	0	0.00	17:29:15	0	0.00	11:29:15	0	0.00			
11:49:30	0	0.00	17:29:30	0	0.00	11:29:30	0	0.00			
11:49:45	0	0.00	17:29:45	0	0.00	11:29:45	0	0.00			
11:50:00	0	0.00	17:30:00	0	0.00	11:30:00	0	0.00			
11:50:15	0	0.00	17:30:15	0	0.00	11:30:15	0	0.00			
11:50:30	0	0.00	17:30:30	0	0.00	11:30:30	0	0.00			
11:50:45	0	0.00	17:30:45	0	0.00	11:30:45	0	0.00			
11:51:00	0	0.00	17:31:00	0	0.00	11:31:00	0	0.00			
11:51:15	0	0.00	17:31:15	0	0.00	11:31:15	0	0.00			
11:51:30	0	0.00	17:31:30	0	0.00	11:31:30	0	0.00			
11:51:45	0	0.00	17:31:45	0	0.00	11:31:45	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
11:52:00	0	0.00	17:32:00	0	0.00	11:32:00	0	0.00			
11:52:15	0	0.00	17:32:15	0	0.00	11:32:15	0	0.00			
11:52:30	0	0.00	17:32:30	0	0.00	11:32:30	0	0.00			
11:52:45	0	0.00	17:32:45	0	0.00	11:32:45	0	0.00			
11:53:00	0	0.00	17:33:00	0	0.00	11:33:00	0	0.00			
11:53:15	0	0.00	17:33:15	0	0.00	11:33:15	0	0.00			
11:53:30	0	0.00	17:33:30	0	0.00	11:33:30	0	0.00			
11:53:45	0	0.00	17:33:45	0	0.00	11:33:45	0	0.00			
11:54:00	0	0.00	17:34:00	0	0.00	11:34:00	0	0.00			
11:54:15	0	0.00	17:34:15	0	0.00	11:34:15	0	0.00			
11:54:30	0	0.00	17:34:30	0	0.00	11:34:30	0	0.00			
11:54:45	0	0.00	17:34:45	0	0.00	11:34:45	0	0.00			
11:55:00	0	0.00	17:35:00	0	0.00	11:35:00	0	0.00			
11:55:15	0	0.00	17:35:15	0	0.00	11:35:15	0	0.00			
11:55:30	0	0.00	17:35:30	0	0.00	11:35:30	0	0.00			
11:55:45	0	0.00	17:35:45	0	0.00	11:35:45	0	0.00			
11:56:00	0	0.00	17:36:00	0	0.00	11:36:00	0	0.00			
11:56:15	0	0.00	17:36:15	0	0.00	11:36:15	0	0.00			
11:56:30	0	0.00	17:36:30	0	0.00	11:36:30	0	0.00			
11:56:45	0	0.00	17:36:45	0	0.00	11:36:45	0	0.00			
11:57:00	0	0.00	17:37:00	0	0.00	11:37:00	0	0.00			
11:57:15	0	0.00	17:37:15	0	0.00	11:37:15	0	0.00			
11:57:30	0	0.00	17:37:30	0	0.00	11:37:30	0	0.00			
11:57:45	0	0.00	17:37:45	0	0.00	11:37:45	0	0.00			
11:58:00	0	0.00	17:38:00	0	0.00	11:38:00	0	0.00			
11:58:15	0	0.00	17:38:15	0	0.00	11:38:15	0	0.00			
11:58:30	0	0.00	17:38:30	0	0.00	11:38:30	0	0.00			
11:58:45	0	0.00	17:38:45	0	0.00	11:38:45	0	0.00			
11:59:00	0	0.00	17:39:00	0	0.00	11:39:00	0	0.00			
11:59:15	0	0.00	17:39:15	0	0.00	11:39:15	0	0.00			
11:59:30	0	0.00	17:39:30	0	0.00	11:39:30	0	0.00			
11:59:45	0	0.00	17:39:45	0	0.00	11:39:45	0	0.00			
12:00:00	0	0.00	17:40:00	0	0.00	11:40:00	0	0.00			
12:00:15	0	0.00	17:40:15	0	0.00	11:40:15	0	0.00			
12:00:30	0	0.00	17:40:30	0	0.00	11:40:30	0	0.00			
12:00:45	0	0.00	17:40:45	0	0.00	11:40:45	0	0.00			
12:01:00	0	0.00	17:41:00	0	0.00	11:41:00	0	0.00			
12:01:15	0	0.00	17:41:15	0	0.00	11:41:15	0	0.00			
12:01:30	0	0.00	17:41:30	0	0.00	11:41:30	0	0.00			
12:01:45	0	0.00	17:41:45	0	0.00	11:41:45	0	0.00			
12:02:00	0	0.00	17:42:00	0	0.00	11:42:00	0	0.00			
12:02:15	0	0.00	17:42:15	0	0.00	11:42:15	0	0.00			
12:02:30	0	0.00	17:42:30	0	0.00	11:42:30	0	0.00			
12:02:45	0	0.00	17:42:45	0	0.00	11:42:45	0	0.00			
12:03:00	0	0.00	17:43:00	0	0.00	11:43:00	0	0.00			
12:03:15	0	0.00	17:43:15	0	0.00	11:43:15	0	0.00			
12:03:30	0	0.00	17:43:30	0	0.00	11:43:30	0	0.00			
12:03:45	0	0.00	17:43:45	0	0.00	11:43:45	0	0.00			
12:04:00	0	0.00	17:44:00	0	0.00	11:44:00	0	0.00			
12:04:15	0	0.00	17:44:15	0	0.00	11:44:15	0	0.00			
12:04:30	0	0.00	17:44:30	0	0.00	11:44:30	0	0.00			
12:04:45	0	0.00	17:44:45	0	0.00	11:44:45	0	0.00			
12:05:00	0	0.00	17:45:00	0	0.00	11:45:00	0	0.00			
12:05:15	0	0.00	17:45:15	0	0.00	11:45:15	0	0.00			
12:05:30	0	0.00	17:45:30	0	0.00	11:45:30	0	0.00			
12:05:45	0	0.00	17:45:45	0	0.00	11:45:45	0	0.00			
12:06:00	0	0.00	17:46:00	0	0.00	11:46:00	0	0.00			
12:06:15	0	0.00	17:46:15	0	0.00	11:46:15	0	0.00			
12:06:30	0	0.00	17:46:30	0	0.00	11:46:30	0	0.00			
12:06:45	0	0.00	17:46:45	0	0.00	11:46:45	0	0.00			
12:07:00	0	0.00	17:47:00	0	0.00	11:47:00	0	0.00			
12:07:15	0	0.00	17:47:15	0	0.00	11:47:15	0	0.00			

TABLE 2-5. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL BRANDT BAGHOUSE

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
12:07:30	0	0.00	17:47:30	0	0.00	11:47:30	0	0.00			
12:07:45	0	0.00	17:47:45	0	0.00	11:47:45	0	0.00			
12:08:00	0	0.00	17:48:00	0	0.00	11:48:00	0	0.00			
12:08:15	0	0.00	17:48:15	0	0.00	11:48:15	0	0.00			
12:08:30	0	0.00	17:48:30	0	0.00	11:48:30	0	0.00			
12:08:45	0	0.00	17:48:45	0	0.00	11:48:45	0	0.00			
12:09:00	0	0.00	17:49:00	0	0.00	11:49:00	0	0.00			
12:09:15	0	0.00	17:49:15	0	0.00	11:49:15	0	0.00			
12:09:30	0	0.00	17:49:30	0	0.00	11:49:30	0	0.00			
12:09:45	0	0.00	17:49:45	0	0.00	11:49:45	0	0.00			
12:10:00	0	0.00	17:50:00	0	0.00	11:50:00	0	0.00			
12:10:15	0	0.00	17:50:15	0	0.00	11:50:15	0	0.00			
12:10:30	0	0.00	17:50:30	0	0.00	11:50:30	0	0.00			
12:10:45	0	0.00	17:50:45	0	0.00	11:50:45	0	0.00			
12:11:00	0	0.00	17:51:00	0	0.00	11:51:00	0	0.00			
12:11:15	0	0.00	17:51:15	0	0.00	11:51:15	0	0.00			
12:11:30	0	0.00	17:51:30	0	0.00	11:51:30	0	0.00			
12:11:45	0	0.00	17:51:45	0	0.00	11:51:45	0	0.00			
12:12:00	0	0.00	17:52:00	0	0.00	11:52:00	0	0.00			
12:12:15	0	0.00	17:52:15	0	0.00	11:52:15	0	0.00			
12:12:30	0	0.00	17:52:30	0	0.00	11:52:30	0	0.00			
12:12:45	0	0.00	17:52:45	0	0.00	11:52:45	0	0.00			
12:13:00	0	0.00	17:53:00	0	0.00	11:53:00	0	0.00			
12:13:15	0	0.00	17:53:15	0	0.00	11:53:15	0	0.00			
12:13:30	0	0.00	17:53:30	0	0.00	11:53:30	0	0.00			
12:13:45	0	0.00	17:53:45	0	0.00	11:53:45	0	0.00			
12:14:00	0	0.00	17:54:00	0	0.00	11:54:00	0	0.00			
12:14:15	0	0.00	17:54:15	0	0.00	11:54:15	0	0.00			
12:14:30	0	0.00	17:54:30	0	0.00	11:54:30	0	0.00			
12:14:45	0	0.00	17:54:45	0	0.00	11:54:45	0	0.00			
VE Readings Completed			VE Readings Completed			VE Readings Completed					

TABLE 2-6. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL MELT SHOP

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:15:00	0		13:55:00	0		7:55:00	0		12:40:00	0	
8:15:15	0		13:55:15	0		7:55:15	0		12:40:15	0	
8:15:30	0		13:55:30	0		7:55:30	0		12:40:30	0	
8:15:45	0		13:55:45	0		7:55:45	0		12:40:45	0	
8:16:00	0		13:56:00	0		7:56:00	0		12:41:00	0	
8:16:15	0		13:56:15	0		7:56:15	0		12:41:15	0	
8:16:30	0		13:56:30	0		7:56:30	0		12:41:30	0	
8:16:45	0		13:56:45	0		7:56:45	0		12:41:45	0	
8:17:00	0		13:57:00	0		7:57:00	0		12:42:00	0	
8:17:15	0		13:57:15	0		7:57:15	0		12:42:15	0	
8:17:30	0		13:57:30	0		7:57:30	0		12:42:30	0	
8:17:45	0		13:57:45	0		7:57:45	0		12:42:45	0	
8:18:00	0		13:58:00	0		7:58:00	0		12:43:00	0	
8:18:15	0		13:58:15	0		7:58:15	0		12:43:15	0	
8:18:30	0		13:58:30	0		7:58:30	0		12:43:30	0	
8:18:45	0		13:58:45	0		7:58:45	0		12:43:45	0	
8:19:00	0		13:59:00	0		7:59:00	0		12:44:00	0	
8:19:15	0		13:59:15	0		7:59:15	0		12:44:15	0	
8:19:30	0		13:59:30	0		7:59:30	0		12:44:30	0	
8:19:45	0		13:59:45	0		7:59:45	0		12:44:45	0	
8:20:00	0		14:00:00	0		8:00:00	0		12:45:00	0	
8:20:15	0		14:00:15	0		8:00:15	0		12:45:15	0	
8:20:30	0		14:00:30	0		8:00:30	0		12:45:30	0	
8:20:45	0	0.00	14:00:45	0	0.00	8:00:45	0	0.00	12:45:45	0	0.00
8:21:00	0	0.00	14:01:00	0	0.00	8:01:00	0	0.00	12:46:00	0	0.00
8:21:15	0	0.00	14:01:15	0	0.00	8:01:15	0	0.00	12:46:15	0	0.00
8:21:30	0	0.00	14:01:30	0	0.00	8:01:30	0	0.00	12:46:30	0	0.00
8:21:45	0	0.00	14:01:45	0	0.00	8:01:45	0	0.00	12:46:45	0	0.00
8:22:00	0	0.00	14:02:00	0	0.00	8:02:00	0	0.00	12:47:00	0	0.00
8:22:15	0	0.00	14:02:15	0	0.00	8:02:15	0	0.00	12:47:15	0	0.00
8:22:30	0	0.00	14:02:30	0	0.00	8:02:30	0	0.00	12:47:30	0	0.00
8:22:45	0	0.00	14:02:45	0	0.00	8:02:45	0	0.00	12:47:45	0	0.00
8:23:00	0	0.00	14:03:00	0	0.00	8:03:00	0	0.00	12:48:00	0	0.00
8:23:15	0	0.00	14:03:15	0	0.00	8:03:15	0	0.00	12:48:15	0	0.00
8:23:30	0	0.00	14:03:30	0	0.00	8:03:30	0	0.00	12:48:30	0	0.00
8:23:45	0	0.00	14:03:45	0	0.00	8:03:45	0	0.00	12:48:45	0	0.00
8:24:00	0	0.00	14:04:00	0	0.00	8:04:00	0	0.00	12:49:00	0	0.00
8:24:15	0	0.00	14:04:15	0	0.00	8:04:15	0	0.00	12:49:15	0	0.00
8:24:30	0	0.00	14:04:30	0	0.00	8:04:30	0	0.00	12:49:30	0	0.00
8:24:45	0	0.00	14:04:45	0	0.00	8:04:45	0	0.00	12:49:45	0	0.00
8:25:00	0	0.00	14:05:00	0	0.00	8:05:00	0	0.00	12:50:00	0	0.00
8:25:15	0	0.00	14:05:15	0	0.00	8:05:15	0	0.00	12:50:15	0	0.00
8:25:30	0	0.00	14:05:30	0	0.00	8:05:30	0	0.00	12:50:30	0	0.00
8:25:45	0	0.00	14:05:45	0	0.00	8:05:45	0	0.00	12:50:45	0	0.00
8:26:00	0	0.00	14:06:00	0	0.00	8:06:00	0	0.00	12:51:00	0	0.00
8:26:15	0	0.00	14:06:15	0	0.00	8:06:15	0	0.00	12:51:15	0	0.00
8:26:30	0	0.00	14:06:30	0	0.00	8:06:30	0	0.00	12:51:30	0	0.00
8:26:45	0	0.00	14:06:45	0	0.00	8:06:45	0	0.00	12:51:45	0	0.00
8:27:00	0	0.00	14:07:00	0	0.00	8:07:00	0	0.00	12:52:00	0	0.00
8:27:15	0	0.00	14:07:15	0	0.00	8:07:15	0	0.00	12:52:15	0	0.00
8:27:30	0	0.00	14:07:30	0	0.00	8:07:30	0	0.00	12:52:30	0	0.00
8:27:45	0	0.00	14:07:45	0	0.00	8:07:45	0	0.00	12:52:45	0	0.00
8:28:00	0	0.00	14:08:00	0	0.00	8:08:00	0	0.00	12:53:00	0	0.00
8:28:15	0	0.00	14:08:15	0	0.00	8:08:15	0	0.00	12:53:15	0	0.00
8:28:30	0	0.00	14:08:30	0	0.00	8:08:30	0	0.00	12:53:30	0	0.00
8:28:45	0	0.00	14:08:45	0	0.00	8:08:45	0	0.00	12:53:45	0	0.00
8:29:00	0	0.00	14:09:00	0	0.00	8:09:00	0	0.00	12:54:00	0	0.00
8:29:15	0	0.00	14:09:15	0	0.00	8:09:15	0	0.00	12:54:15	0	0.00
8:29:30	0	0.00	14:09:30	0	0.00	8:09:30	0	0.00	12:54:30	0	0.00
8:29:45	0	0.00	14:09:45	0	0.00	8:09:45	0	0.00	12:54:45	0	0.00
8:30:00	0	0.00	14:10:00	0	0.00	8:10:00	0	0.00	12:55:00	0	0.00
8:30:15	0	0.00	14:10:15	0	0.00	8:10:15	0	0.00	12:55:15	0	0.00

TABLE 2-6. VE READINGS AND ROLLING 6-MINUTE VE AVERAGES FOR NEWPORT STEEL MELT SHOP

TEST 1 August 15, 2000			TEST 2 August 15, 2000			TEST 3 August 16, 2000			TEST 4 (Incomplete) August 16, 2000		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
8:30:30	0	0.00	14:10:30	0	0.00	8:10:30	0	0.00	12:55:30	0	0.00
8:30:45	0	0.00	14:10:45	0	0.00	8:10:45	0	0.00	12:55:45	0	0.00
8:31:00	0	0.00	14:11:00	0	0.00	8:11:00	0	0.00	12:56:00	0	0.00
8:31:15	0	0.00	14:11:15	0	0.00	8:11:15	0	0.00	12:56:15	0	0.00
8:31:30	0	0.00	14:11:30	0	0.00	8:11:30	0	0.00	12:56:30	0	0.00
8:31:45	0	0.00	14:11:45	0	0.00	8:11:45	0	0.00	12:56:45	0	0.00
8:32:00	0	0.00	14:12:00	0	0.00	8:12:00	0	0.00	12:57:00	0	0.00
8:32:15	0	0.00	14:12:15	0	0.00	8:12:15	0	0.00	12:57:15	0	0.00
8:32:30	0	0.00	14:12:30	0	0.00	8:12:30	0	0.00	12:57:30	0	0.00
8:32:45	0	0.00	14:12:45	0	0.00	8:12:45	0	0.00	12:57:45	0	0.00
8:33:00	0	0.00	14:13:00	0	0.00	8:13:00	0	0.00	12:58:00	0	0.00
8:33:15	0	0.00	14:13:15	0	0.00	8:13:15	0	0.00	12:58:15	0	0.00
8:33:30	0	0.00	14:13:30	0	0.00	8:13:30	0	0.00	12:58:30	0	0.00
8:33:45	0	0.00	14:13:45	0	0.00	8:13:45	0	0.00	12:58:45	0	0.00
8:34:00	0	0.00	14:14:00	0	0.00	8:14:00	0	0.00	12:59:00	0	0.00
8:34:15	0	0.00	14:14:15	0	0.00	8:14:15	0	0.00	12:59:15	0	0.00
8:34:30	0	0.00	14:14:30	0	0.00	8:14:30	0	0.00	12:59:30	0	0.00
8:34:45	0	0.00	14:14:45	0	0.00	8:14:45	0	0.00	12:59:45	0	0.00
8:35:00	0	0.00	14:15:00	0	0.00	8:15:00	0	0.00	13:00:00	0	0.00
8:35:15	0	0.00	14:15:15	0	0.00	8:15:15	0	0.00	13:00:15	0	0.00
8:35:30	0	0.00	14:15:30	0	0.00	8:15:30	0	0.00	13:00:30	0	0.00
8:35:45	0	0.00	14:15:45	0	0.00	8:15:45	0	0.00	13:00:45	0	0.00
8:36:00	0	0.00	14:16:00	0	0.00	8:16:00	0	0.00	13:01:00	0	0.00
8:36:15	0	0.00	14:16:15	0	0.00	8:16:15	0	0.00	13:01:15	0	0.00
8:36:30	0	0.00	14:16:30	0	0.00	8:16:30	0	0.00	13:01:30	0	0.00
8:36:45	0	0.00	14:16:45	0	0.00	8:16:45	0	0.00	13:01:45	0	0.00
8:37:00	0	0.00	14:17:00	0	0.00	8:17:00	0	0.00	13:02:00	0	0.00
8:37:15	0	0.00	14:17:15	0	0.00	8:17:15	0	0.00	13:02:15	0	0.00
8:37:30	0	0.00	14:17:30	0	0.00	8:17:30	0	0.00	13:02:30	0	0.00
8:37:45	0	0.00	14:17:45	0	0.00	8:17:45	0	0.00	13:02:45	0	0.00
8:38:00	0	0.00	14:18:00	0	0.00	8:18:00	0	0.00	13:03:00	0	0.00
8:38:15	0	0.00	14:18:15	0	0.00	8:18:15	0	0.00	13:03:15	0	0.00
8:38:30	0	0.00	14:18:30	0	0.00	8:18:30	0	0.00	13:03:30	0	0.00
8:38:45	0	0.00	14:18:45	0	0.00	8:18:45	0	0.00	13:03:45	0	0.00
8:39:00	0	0.00	14:19:00	0	0.00	8:19:00	0	0.00	13:04:00	0	0.00
8:39:15	0	0.00	14:19:15	0	0.00	8:19:15	0	0.00	13:04:15	0	0.00
8:39:30	0	0.00	14:19:30	0	0.00	8:19:30	0	0.00	13:04:30	0	0.00
8:39:45	0	0.00	14:19:45	0	0.00	8:19:45	0	0.00	13:04:45	0	0.00
8:40:00	0	0.00	14:20:00	0	0.00	8:20:00	0	0.00	13:05:00	0	0.00
8:40:15	0	0.00	14:20:15	0	0.00	8:20:15	0	0.00	13:05:15	0	0.00
8:40:30	0	0.00	14:20:30	0	0.00	8:20:30	0	0.00	13:05:30	0	0.00
8:40:45	0	0.00	14:20:45	0	0.00	8:20:45	0	0.00	13:05:45	0	0.00
8:41:00	0	0.00	14:21:00	0	0.00	8:21:00	0	0.00	13:06:00	0	0.00
8:41:15	0	0.00	14:21:15	0	0.00	8:21:15	0	0.00	13:06:15	0	0.00
8:41:30	0	0.00	14:21:30	0	0.00	8:21:30	0	0.00	13:06:30	0	0.00
8:41:45	0	0.00	14:21:45	0	0.00	8:21:45	0	0.00	13:06:45	0	0.00
8:42:00	0	0.00	14:22:00	0	0.00	8:22:00	0	0.00	13:07:00	0	0.00
8:42:15	0	0.00	14:22:15	0	0.00	8:22:15	0	0.00	13:07:15	0	0.00
8:42:30	0	0.00	14:22:30	0	0.00	8:22:30	0	0.00	13:07:30	0	0.00
8:42:45	0	0.00	14:22:45	0	0.00	8:22:45	0	0.00	13:07:45	0	0.00
8:43:00	0	0.00	14:23:00	0	0.00	8:23:00	0	0.00	13:08:00	0	0.00
8:43:15	0	0.00	14:23:15	0	0.00	8:23:15	0	0.00	13:08:15	0	0.00
8:43:30	0	0.00	14:23:30	0	0.00	8:23:30	0	0.00	13:08:30	0	0.00
8:43:45	0	0.00	14:23:45	0	0.00	8:23:45	0	0.00	13:08:45	0	0.00
8:44:00	0	0.00	14:24:00	0	0.00	8:24:00	0	0.00	13:09:00	0	0.00
8:44:15	0	0.00	14:24:15	0	0.00	8:24:15	0	0.00	13:09:15	0	0.00
8:44:30	0	0.00	14:24:30	0	0.00	8:24:30	0	0.00	13:09:30	0	0.00
8:44:45	0	0.00	14:24:45	0	0.00	8:24:45	0	0.00	13:09:45	0	0.00
8:45:00	0	0.00	14:25:00	0	0.00	8:25:00	0	0.00	13:10:00	0	0.00
8:45:15	0	0.00	14:25:15	0	0.00	8:25:15	0	0.00	13:10:15	0	0.00
8:45:30	0	0.00	14:25:30	0	0.00	8:25:30	0	0.00	13:10:30	0	0.00
8:45:45	0	0.00	14:25:45	0	0.00	8:25:45	0	0.00	13:10:45	0	0.00

SECTION 3

SAMPLING PROCEDURES

The sampling and analytical procedures used conform to the most recent revisions of U.S. EPA Reference Methods for stationary sources. Specifically, U.S. EPA Reference Methods 1, 2, 3, 4, 5D, 6, 7E, 9, 10 and 12 were used. A brief description of each procedure is included below:

3.1 Measurement Sites

The location of measurement sites and the number of traverse points were determined as specified in U.S. EPA Reference Method 1, "Sample and Velocity Traverses for Stationary Sources."

Exhaust from the Brandt Baghouse is routed through 12 bag sections (cells). Following the guidelines presented in Method 5D, each sampling run consisted of six sample points per cell and four cells per test, for a total of 24 sample points per test run. At 10 minutes of sampling per point, this resulted in a net sampling time of 4 hours per test run. After three test runs, all 12 of the cells were sampled. Each test run was 240 minutes in length. Sampling point locations are detailed in Section 3. Isokinetic sampling rates were calculated from the measurement of volumetric flow rates at each inlet, as specified in Method 5D.

3.2 Velocity and Volumetric Flow Rates

The stack gas velocities and volumetric flow rates were determined using U.S. EPA Reference Method 2, "Determination of Stack Gas Velocity and Volumetric Flow Rate." Velocities were measured with an "s" type pitot tube and stack gas temperatures were measured with a calibrated Type "K" thermocouple.

3.3 Dry Molecular Weight (Method 3 / 3A)

Dry molecular weight was determined using U.S. EPA Method 3A, "Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight (Instrumental Analyzer Method)." A continuous sample was withdrawn and analyzed for O₂/CO₂ using instrumental analyzers. The instruments were calibrated with zero nitrogen and 2 span gases, in order to demonstrate linearity. Due to the amount of dilution air that the collection system receives, the dry molecular weight is essentially that of ambient air. Figure 3-1 depicts the sample train.

3.4 Moisture

Moisture content was determined using U.S. EPA Method 4 "Determination of Moisture Content of Stack Gases" in conjunction with the RM/Lead sampling.

3.5 Particulate Matter

EPA Reference Method 5D, "Determination of Particulate Matter Emissions from Positive Pressure Fabric Filters," was used to determine the particulate matter concentration and mass emission rates. The sample train consisted of a glass nozzle, glass probe and filter holder, glass fiber filter, and a series of impingers followed by a vacuum pump, dry gas meter, and calibrated orifice. The particulate sample will be withdrawn isokinetically and collected on the filter. Thermocouples will be used to monitor temperatures of the stack gas and impinger exit gas.

Exhaust from the Brandt Baghouse is routed through 12 bag sections (cells). Following the guidelines presented in Method 5D, each sampling run consisted of six sample points per cell and four cells per test, for a total of 24 sample points per test run. At 10 minutes of sampling per point, this resulted in a net sampling time of 4 hours per test run. After three test runs, all 12 of the cells were sampled. Each test run was approximately 240 minutes in length, and covered approximately three EAF heat cycles. Determination of measurement sites, number and location of traverse points, and velocity determination followed procedures in Method 5D. Isokinetic sampling rates were calculated from the measurement of volumetric flow rates at each inlet, as specified in Method 5D.

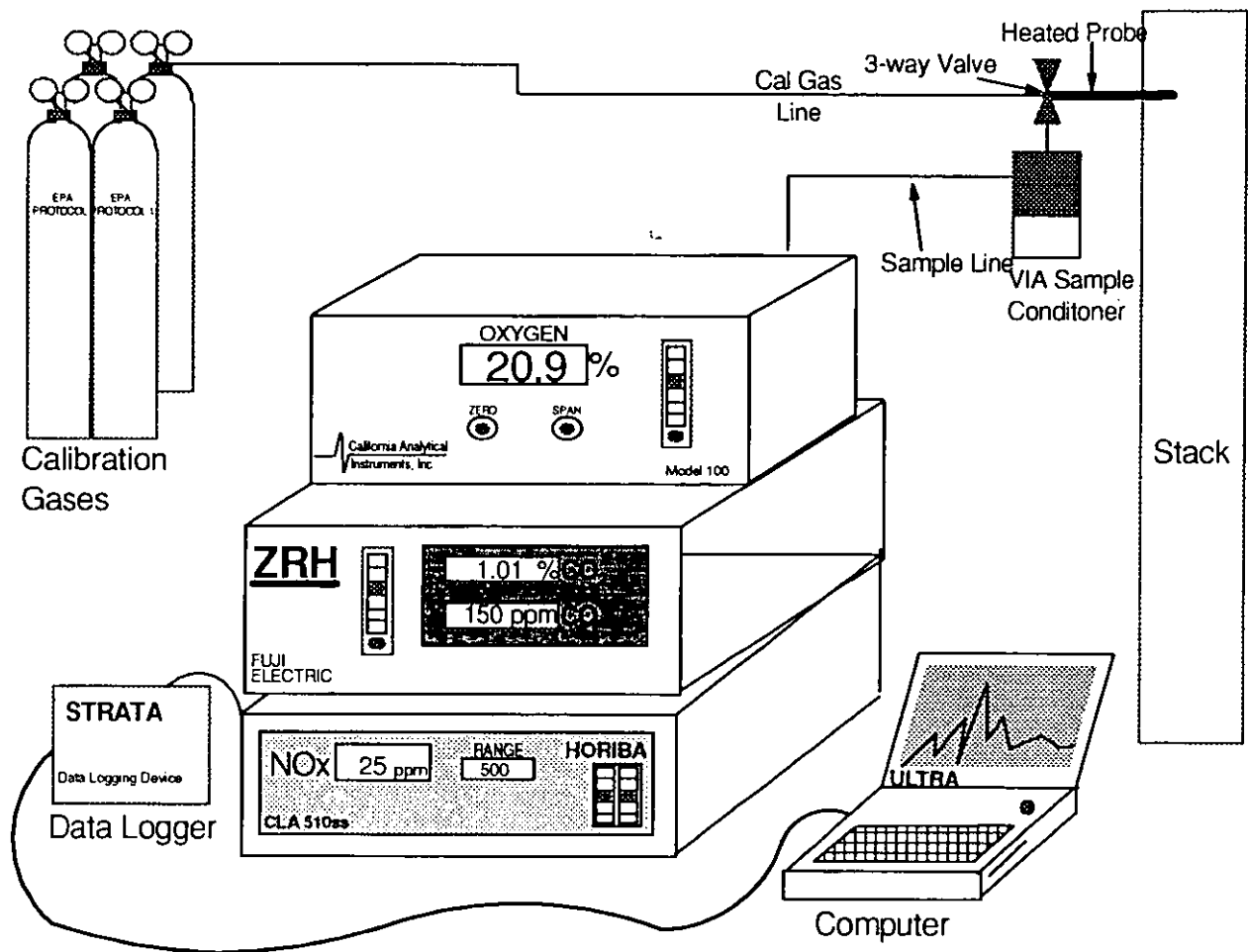


Figure 3-1. Instrumental Analyzer Sampling System

3.6 Visible Emission Observations

EPA Reference Method 9, "Visual Determination of the Opacity of Emissions from Stationary Sources," was used to determine opacity from the baghouse exhaust as well as from the shop roof monitor. Observations were conducted simultaneously with the particulate sampling runs.

3.7 SO₂ Emissions

The principles of EPA Method 6, "Determination of Sulfur Dioxide Emissions from Stationary Sources," were used for this test program. The first impinger contained 100 milliliters (ml) of an 80% isopropanol alcohol solution and the following two impingers of the impinger train contained a 3% hydrogen peroxide solution. The large impingers in a Method 5 sampling train were used in place of the midjet impingers. A gas sample was extracted from one sampling point in the stack. The sulfuric acid mist [including sulfur trioxide (SO₃)] and the SO₂ was separated. A separate pump was used to purge the sampling train. The SO₂ fraction was analyzed by the barium-thorin titration method. The average of three 240-minute sampling runs will constitute the test.

3.8 Nitrogen Oxides

NO_x emissions were determined using U.S. EPA Method 7E, "Determination of Nitrogen Oxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)." A stack gas sample was withdrawn continuously from a single point and a portion directed to a chemilluminiscent analyzer for NO_x measurement. All NO_x is converted to NO₂ in the analyzer and emission calculations are based upon the molecular weight of NO₂. U.S. EPA Protocol 1 calibration gases were used for instrument calibrations. Figure 3-1 depicts the sample

3.9 Lead Emissions

The principles of EPA Method 12, "Determination of Inorganic Lead Emissions from Stationary Sources," were used to measure lead emissions at the Brandt Baghouse. A gas sample

SECTION 4

PROCESS DESCRIPTION AND BAGHOUSE OPERATING DATA

The processes operating in the Newport Steel Corporation Melt Shop are the electric arc furnace (EAF), ladle metallurgy furnace (LMF), and continuous slab caster. The structure containing the EAF is referred to as the EAF building and the structure containing the LMF and the Caster is referred to as the Main Melt Shop Building. The Brandt baghouse vents emissions from the EAF and the EAF building.

Figure 4-1 shows the process flow for the Newport electric arc furnace (EAF). The EAF is a batch process. Each process cycle consists of four distinct phases: charging, melting, slagging, and tapping. After the furnace is charged with scrap and other additives, the meltdown phase comprises the period from charging to the complete meltdown of the solid material. Melting is accomplished by the heat supplied by direct radiation from the arcs formed between the electrodes and the scrap metal, by direct radiation from the furnace lining, and electric resistance of the metal between arc paths. The EAF also has oxy-fuel burners to provide additional heat input to enhance scrap meltdown and oxygen/carbon lances to enhance meltdown, refining, and foamy slag practice.

When the melting phase is complete, chemistry and temperature samples are taken. Based on these samples, the steel composition is adjusted and when the proper steel temperature has been reached, the foamy slag is poured off the furnace. For tapping, the power is shut off, the electrodes are raised to clear the molten steel bath, and the molten steel is tapped into a ladle and transferred to the LMF. After steel tapping is completed, the melting cycle begins again (i.e., the charging phase begins).

The Brandt baghouse exhausts the electric arc furnace (EAF) and the EAF building by an exhaust system consisting of (1) a direct evacuation control (DEC), and (2) a roof canopy hood. The DEC - also called a "fourth hole" system or direct shell evacuation (DSE) - captures emissions generated during scrap meltdown while the EAF roof is in place directly from the

was withdrawn from the gas stream and collected on a glass-lined probe, on a glass-fiber filter, and in a series of glass impingers containing 0.1 N nitric acid. The Method 12 sample was conducted utilizing the same train as the particulate sample. The impinger content volume was measured after sampling to determine the moisture pickup. The average of three 240-minute sample runs constituted the test.

3.10 CO Emissions

The principles of EPA Method 10, "Determination of Carbon Monoxide Emissions from Stationary Sources," were used for this program to determine CO emissions. A gas sample was continuously extracted from the baghouse inlet duct using the same conveying system as the NO_x and VOC analyzer. The CO analyzer measured the CO concentration using the principles of nondispersive infrared (NDIR) analysis. The sampling and data acquisition will be conducted simultaneously with and in the same manner as the NO_x sampling.

3.11 EAF and Baghouse Operation Data

EAF and Brandt Baghouse operation data included the following:

- EAF logs, including time and duration of each charge and tap, charge weights and tap weights;
- Calculations of average hourly steel production rate for each test run;
- Charge carbon sample analyses (for sulfur content);
- Baghouse pressure drops;
- Baghouse fan amperage and damper positions.

furnace vessel. The DEC is comprised of water-cooled ductwork to cool the hot EAF exhaust gases. Prior to the water-cooled section, a gap in the duct allows the entrainment of shop ambient air to assist in the combustion of carbon monoxide (CO) off-gases to carbon dioxide (CO₂). After passing sufficient distance to cool the exhaust, the DEC duct then merges with shop roof ductwork from the roof canopy hood. The overhead roof canopy hood collects fumes and gases that escape the furnace shell. The combined gas stream including EAF exhausts and melt shop ambient air is ducted to the Brandt baghouse.

Process information collected during the course of the sampling program included:

- A) Charge weights and materials, and tap weights and materials
- B) Heat times, including start and stop times, log of process operation including periods of no operation during testing
- C) Pressure drop across the baghouse, visual inspection of bags and control system fan amperes
- D) Fan/duct damper positions
- E) Fan amperes.

Data were recorded at 15-minute intervals during testing. Table 4-1 presents the baghouse pressure drops, fan amps, and damper positions during the test program.

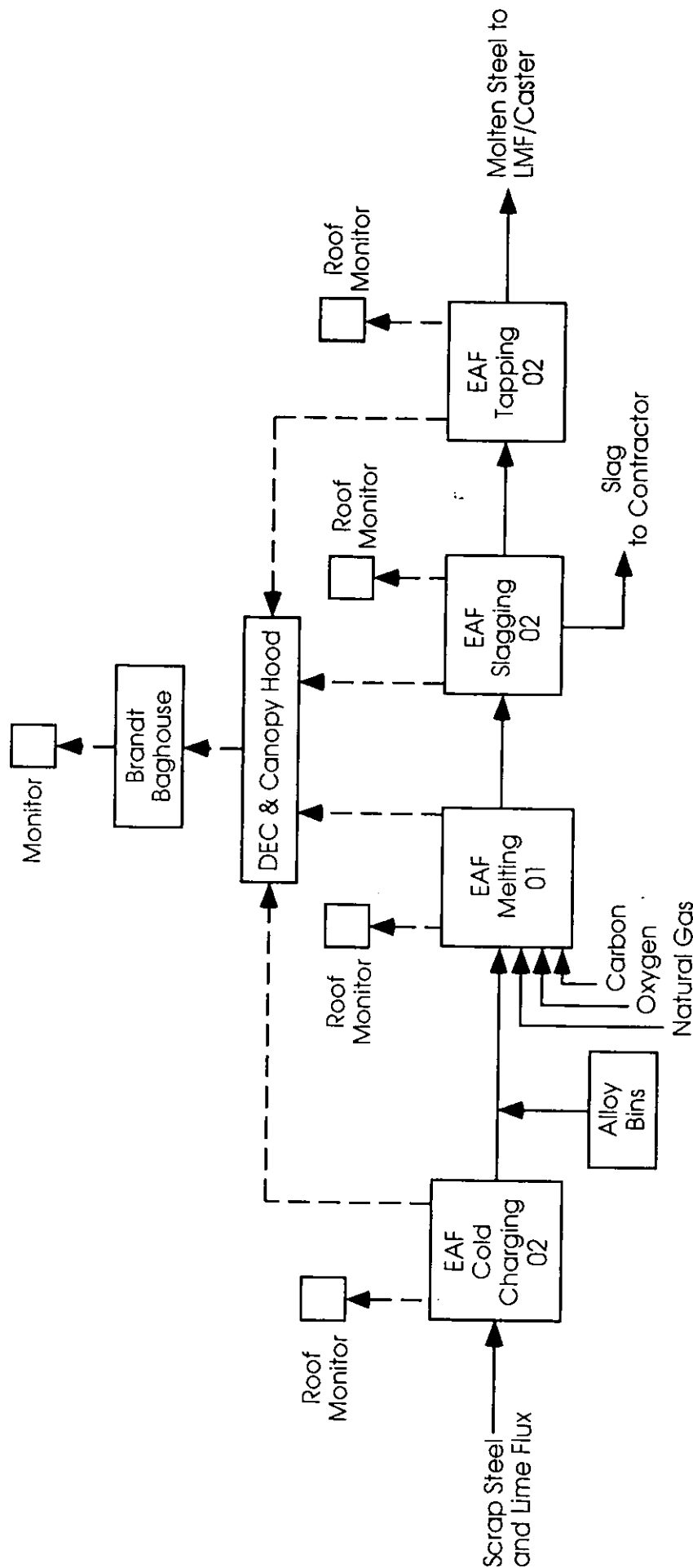


Figure 4-1. Process Flow Diagram
Melt Shop - Electric Arc Furnace (EAF)

— Material/Fuel Flow
 - - - Emission Stream

Newport Steel, Inc.	EQ
Process Flow Diagram:	
Melt Shop - Electric Arc Furnace (EAF)	
Drawing No.:	
Scale: Not to Scale	
Drawn by: RJH	Revision: 0
Checked by: FDH	Date: 2/9/98

**TABLE 4-1. BAGHOUSE PRESSURE DROP, CONTROL SYSTEM FAN AMPS,
AND DAMPER POSITIONS DURING PERFORMANCE TESTS**

DATE	TIME	Baghouse Pressure Drop, in. WG	Fan 1 Amp	Fan 2 Amp	Fan 3 Amp	Total Amp
TEST 1						
8/15/00	8:15:00 AM	7.3	201	191	198	590
8/15/00	8:30:00 AM	7.5	202	193	199	594
8/15/00	8:45:00 AM	8.1	206	195	208	609
8/15/00	9:00:00 AM	7.6	214	201	210	625
8/15/00	9:15:00 AM	7.2	214	202	208	624
8/15/00	9:30:00 AM	7.2	219	208	214	641
8/15/00	9:45:00 AM	7.1	208	196	204	608
8/15/00	10:00:00 AM	7.5	199	190	197	586
8/15/00	10:15:00 AM	7.7	200	191	198	589
8/15/00	10:30:00 AM	7.8	210	200	206	616
8/15/00	10:45:00 AM	8.1	207	194	201	602
8/15/00	11:00:00 AM	7.6	218	205	212	635
8/15/00	11:15:00 AM	7.9	212	203	206	621
8/15/00	11:30:00 AM	7.7	214	200	207	621
8/15/00	11:45:00 AM	7.3	206	197	202	605
8/15/00	12:00:00 PM	8.0	208	196	204	608
8/15/00	12:15:00 PM	8.3	204	193	200	597
8/15/00	12:30:00 PM	8.3	211	199	206	616
8/15/00	12:45:00 PM	7.9	210	204	214	628
8/15/00	1:00:00 PM	8.3	197	188	196	581
Ampere Range Test 1 = 581 - 641						
Damper Positions During Test No. 1:						
EAF Exhaust = 100% Open						
Canopy = 68-70% Open						
TEST 2						
8/15/00	1:45:00 PM	7.6	213	199	206	618
8/15/00	2:00:00 PM	8.2	203	196	209	608
8/15/00	2:15:00 PM	7.7	213	200	206	619
8/15/00	2:30:00 PM	7.4	217	206	211	634
8/15/00	2:45:00 PM	7.1	215	208	221	644
8/15/00	3:00:00 PM	7.9	200	192	205	597
8/15/00	3:15:00 PM	8.0	215	203	207	625
8/15/00	3:30:00 PM	7.4	213	200	205	618
8/15/00	3:45:00 PM	7.2	209	194	205	608
8/15/00	4:00:00 PM	7.9	211	197	204	612
8/15/00	4:15:00 PM	7.7	206	192	200	598
8/15/00	4:30:00 PM	8.0	213	199	208	620
8/15/00	4:45:00 PM	6.9	214	207	220	641
8/15/00	5:00:00 PM	7.7	203	192	198	593
8/15/00	5:15:00 PM	7.4	207	192	201	600
8/15/00	5:30:00 PM	7.9	213	199	207	619
8/15/00	5:45:00 PM	7.2	208	195	202	605
8/15/00	6:00:00 PM	7.2	208	196	203	607
8/15/00	6:15:00 PM	7.3	214	202	208	624
8/15/00	6:30:00 PM	7.9	201	189	195	585
Ampere Range Test 3 = 585 - 644						
Damper Positions During Test No. 2:						
EAF Exhaust = 00% Open						
Canopy = 70% Open						

TABLE 4-1 (continued)

DATE	TIME	Baghouse Pressure Drop, in. WG	Fan 1 Amp	Fan 2 Amp	Fan 3 Amp	Total Amp
TEST 3						
8/16/00	7:55:00 AM	7.0	219	205	210	634
8/16/00	8:15:00 AM	7.6	211	198	205	614
8/16/00	8:30:00 AM	8.6	205	192	201	598
8/16/00	8:45:00 AM	8.1	206	193	199	598
8/16/00	9:00:00 AM	7.8	193	182	189	564
8/16/00	9:15:00 AM	7.7	199	187	195	581
8/16/00	9:30:00 AM	8.3	196	183	191	570
8/16/00	9:45:00 AM	8.4	198	185	194	577
8/16/00	10:00:00 AM	7.9	191	183	193	567
8/16/00	10:15:00 AM	7.9	214	201	207	622
8/16/00	10:30:00 AM	8.3	201	188	197	586
8/16/00	10:45:00 AM	8.2	202	187	196	585
8/16/00	11:00:00 AM	7.9	195	183	191	569
8/16/00	11:15:00 AM	7.7	210	197	204	611
8/16/00	11:30:00 AM	7.8	213	200	207	620
8/16/00	11:45:00 AM	7.6	200	190	199	589
8/16/00	12:00:00 PM	8.0	204	192	197	593
8/16/00	12:15:00 PM	7.6	201	191	197	589
Ampere Range Test 3 = 567 - 634						
Damper Positions During Test No. 3: EAF Exhaust = 00% Open Canopy = 70% Open						
Ampere Range All Complete Tests = 567 - 644						
Damper Positions During Tests No's 1 - 3: EAF Exhaust = 100% Open Canopy = 68-70% Open						

SECTION 5

QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling quality assurance for this project includes the use of calibrated source sampling equipment, reference test methods, and traceability protocols for the recording and calculation of data. The analytical quality assurance includes use of validated analytical procedures, calibration of equipment, and analysis of control samples and blanks. The calibration and quality control procedures to be used for this test program are described in the following subsection.

5.1 Calibration Procedures and Frequency

All manual stack gas sampling equipment is calibrated before the test program in accordance with the procedures outlined in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume 111, EPA-600/4-72-027B. Summarized in Table 5-1 are the stack gas sampling equipment calibrations which will be performed in preparation for this project. The meter boxes will be re-calibrated after the test. Analyzer checks will be conducted directly to the instrument initially and then through the sampling system. Calibration checks will be conducted before and after each test run. EPA protocol gases will be used for calibrating the NO_x analyzer. The CO analyzer will be calibrated with Master Gas Certified calibration gases with a 2 percent accuracy.

Listed in Table 5-2 are the additional calibration checks which will be performed on the sampling equipment on site, just prior to the testing, to ensure that equipment was not damaged during transport. A copy of the calibration data and procedures is provided in Appendix F.

TABLE 5-1. FIELD EQUIPMENT CALIBRATION SUMMARY*

Equipment	Calibrated Against	Allowable Error
Method 5 meter box	Reference test meter	Y ± 0.02 Y $\Delta H @ \pm 0.15$ post-test Y ± 0.05 Y
Orsat	Certified cylinder gas	$\pm 0.5\%$
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	$\pm 1.5\%$
Impinger (or condenser thermometer)	ASTM-3F	$\pm 2^\circ\text{F}$
Dry gas thermometer	ASTM-3F	$\pm 5^\circ\text{F}$
Probe nozzles	Caliper	± 0.004 in.
Barometer	NBS traceable barometer	± 0.1 in. Hg

* As recommended in the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III. Stationary Source-Specific Methods. EPA-600/4-77-027b, August 1977.

TABLE 5-2. FIELD CHECKS OF SAMPLING EQUIPMENT

Equipment	Checked Against	Allowable Difference
Pitot tube	Inspection	No visible damage
Thermocouples	ASTM 2F or 3F	$\pm 1.5\%$
Probe Nozzles	Caliper	± 0.004 in.

FIELD CHECKS OF CO AND NO_x ANALYZER

	Instrument Check	Acceptable Limit
Initial Calibration	CO & NO _x Calibration Error, % Span	$\pm 2\%$
	Sampling System Bias	< 5% of Span
Daily Calibration	CO & NO _x Calibration Error, % Span	$\pm 2\%$
	CO & NO, Drift, % Span	< 3 of Span

APPENDIX B
PRODUCTION/PROCESS FIELD DATA

PRODUCTION WORKSHEET

Heats During Tests

Date	Heat No.	Tons	Tap-Tap Time, min	Operating Time, hr	Tons/Hr
TEST 1					
15-Aug	6004	95.4	96	1.6	59.6
	6005	94.6	96	1.6	59.1
	6006	95.2	110	1.8	51.9
	6007	105.8	91	1.5	69.8
	Totals	391.0	393	6.6	59.7 tons/hr
TEST 2					
15-Aug	6007	105.8	91	1.5	69.8
	6008	92.8	144	2.4	38.7
	6009	92.0	90	1.5	61.3
	6010	92.9	100	1.7	55.7
	Totals	383.5	425	7.1	54.1 tons/hr
TEST 3					
16-Aug	6018	93.3	85	1.4	65.9
	6019	93.6	60	1.0	93.6
	6020	94.5	88	1.5	64.4
	6021	94.2	61	1.0	92.7
	Totals	375.6	294	4.9	76.7 tons/hr
TEST 4					
16-Aug	6021	94.2	61	1.0	92.7
	6022	93.8	79	1.3	71.2
	6023	93.2	174	2.9	32.1
	Totals	281.2	314	5.2	53.7

Test stopped at 1:40 pm due to operating problems with automatic oxygen lance

**NEWPORT STEEL CORPORATION
BRANDT BAGHOUSE TEST PROCESS MONITORING FORM**

Date 8/15 Run Number 2 Start 13:45
1 hr 30 min

Time	Baghouse Fan Amperage			Baghouse Pressure Drop, in. WG	Damper Positions (Describe)	Notes (Heat No. and time; Other)
	1	2	3			
13:45	213	199	206	7.6	13:50 30% closed on canopy	6007 Melting Heat
14:00	203	196	209	8.2	100% open exhaust	14:15 Tapped 6007
14:15	213	200	206	7.7	14:50 30% closed Canopy	6008 14:55 Power On
14:30	217	206	211	7.4	100% open exhaust	Drum of dust in 15:22
14:45	215	208	221	7.1	15:22 30% closed Canopy	2nd charge 15:32
15:00	200	192	205	7.9	100% open exhaust	Tap 16:37
15:15	215	203	207	8.0	16:30 30% closed Canopy	6009
15:30	213	200	205	7.4	100% open exhaust	Bagen 16:51
15:45	209	194	205	7.2	17:30 30% closed Can	2nd charge 17:07
16:00	211	197	204	7.9	100% open exh.	Tap 18:07
16:15	206	192	200	7.7	18/ closed 30% Canopy	6010
16:30	213	199	208	8.0	100% open exhaust	Power 6:21 On
16:45	214	207	220	6.9		
17:00	203	192	198	7.7		
17:15	207	192	201	7.4		
17:30	213	199	207	7.9		
17:45	208	195	202	7.2		
18:00	208	196	203	7.2		
18:15	214	202	208	7.3		
18:25	201	189	195	7.9		

Note: Automatic oxygen lance in repair.
Manual lancing performed for heats during test

Gas (CO + NOx + SO₂) ended 17:55

End 18:25

**NEWPORT STEEL CORPORATION
BRANDT BAGHOUSE TEST PROCESS MONITORING FORM**

Date 8/16/00

Run Number 4

Start 12:40

Time	Baghouse Fan Amperage			Baghouse Pressure Drop, in. WG	Damper Positions (Describe)	Notes (Heat No. and time; Other)
	1	2	3			
12:40	208	195	202	8.0	Canopy 30% closed	On Heat 6021
13:00	193	184	191	7.8	Exhaust 100% open	Tapped 12:35
13:15	192	180	188	8.0		Heat 6022
13:30	191	177	185	8.2	Canopy 20% closed	Power on 12:45
13:45	201	189	195	8.3	Exhaust 100% open	2nd charge 12:58
14:00	195	184	191	8.1		Tapped 1:38
14:15	205	192	199	7.5		Heat 6023
14:30	199	188	196	7.2		Power on 14:17
14:45	202	189	197	7.9		2nd charge
					Lance Went out @ 13:40 Test stopped until 8/17/00	

END

APPENDIX D
EMISSION TESTING FIELD DATA

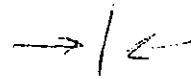
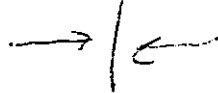
Newport Steel

Date 8/14/00

Bayhenna (4.5') (13.5')

54.75"

164.25"



793, 656

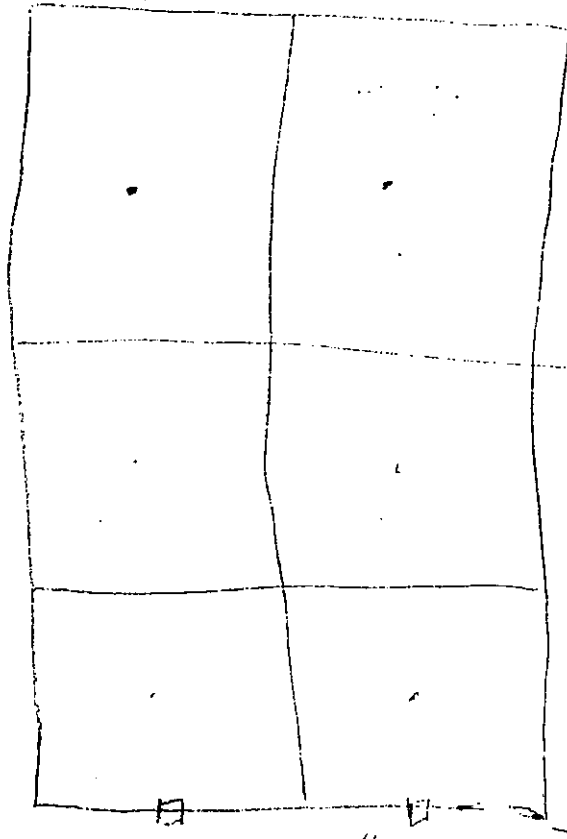
0016 Ap

806, 752

1.05

1.25

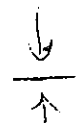
(178" + 11")
308"



251.67" (21')



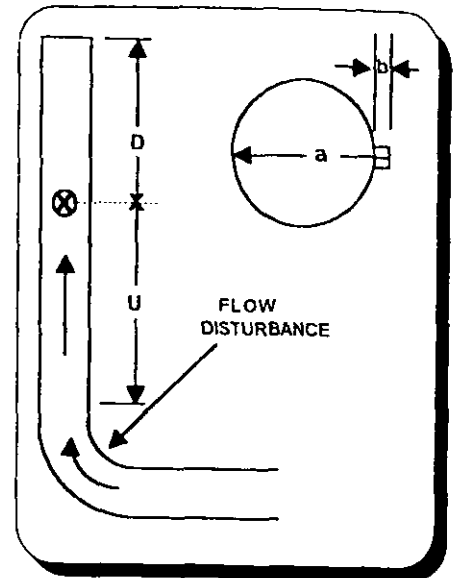
150.99" (12.5')



50.33" (4')

219"
(~~87" + 11'~~)

Client : Newport Steel
 Calculator : BW Date : 8/14/00
 Location : _____
 Distance from *upstream* disturbance (u) : ~~2100~~ 1900"
 Distance from *downstream* disturbance (d) : ~~1700~~ 250"
 Outside of port to *far side* of stack (a) : 197 1/2"
 Outside of port to *near side* of stack (b) : 12"
 Inside Stack Diameter (a-b) : 185.5"

[illegible]

FBT

SAMPLE RECOVERY DATA

Date: 8-16-00
Client: Newport Steel
Plant: Newport
Location: Baghouse exhaust
Test Method: S
Run #: 4 TC #: _____

IMPINGER DATA

	#1	#2	#3	#4	#5	Total
Contents	D.I.N HNO ₃	D.I.N HNO ₃	MT	SG		
Final Wt.(g)	709	695	583	890		
Initial Wt.(g)	693	691	581	865		
Net Gain (g)	16	4	2		25	47

RECOVERED SAMPLES

Recovered by: _____

Date: - _____

Filter #: - _____

Silica Gel Color: _____

COMMENTS: _____

Client / City: Wichita Falls
Date: 08/16/02 Run #:
Location: Bayhouse Outlet
Sample Type: Operator: PM, CW

Probe Length / Type:
Nozzle Size: =
Meter Box #: Apex 3 $\Delta H @$: Y:
Assumed H_2O : % T_s : C_p :
Reference ΔP : K-factor:

P_{BAR} : Ambient Temperature: °F P_s :
Pretest Leak Rate: .009 ft³ @ 8 "hg Filler #:
Posttest Leak Rate: ft³ @ "hg
Pilot Leak Check: Orsat Leak Check:

Comments: 1/2 Post Leak .004 @ 13hg

Fyrite Data: Moisture Data Total:
 O_2 : ml H_2O g Sil. Gel
 CO_2 :
Page of Record data every minutes

Traverse Schematic:

Trav. #	Sample Time	Clock Time	Meter Reading	Pilot #:		TC #s:		Probe	Stack	Tm In	Tm Out	Filler	Exit	Pump Vac.
				ΔP	$\Delta H(calc)$	$\Delta H(act)$								
		12:39	825.862		2.5									
5-1	10								186	104	96	190	65	7
2	20								191	105	97	230	64	7
3	30								203	105	97	238	64	7
4	40								189	106	98	238	69	7
5	50								210	105	98	240	67	7
6	60		879.548						232	105	98	248	68	7
6-1	10								167	101	99	210	65	7
2	20								175	105	99	226	67	7
3	30								183	108	99	228	67	7
4	40								175	109	100	228	69	7
5	50								175	109	101	228	69	7
6	60		933.487						170	109	101	227	67	7
12-1														
2														
3														
4														
5														
6														
11-1														
2														
3														
4														
5														
6														

Θ : V_m : 107.625 avg $\sqrt{\Delta P}$: .04 avg ΔH : T_s : 145 T_m : 102 Calculated By: Checked By:



SAMPLE RECOVERY DATA

Date: 8/16/00
 Client: Newport Steel
 Plant: Newport, KY
 Location: Boghouse
 Test Method: M12
 Run #: 3 TC #:

IMPINGER DATA

	#1	#2	#3	#4	#5	
Contents	0.1 N HNO ₃	0.1 N HNO ₃	MT	SG		Total
Final Wt.(g)	760	530	554	802 843		
Initial Wt.(g)	617	606	551	800 675		
Net Gain (g)	143	- 76	3	8		

RECOVERED SAMPLES

Recovered by: H. H.
 Date: - 8/16/00
 Filter #: - 3705
 Silica Gel Color: 02

COMMENTS: _____

Client / City: Newport Steel
 Date: 8-16-00 Run #: 3
 Location: Bughouse Outlet
 Sample Type: MS Operator: CW/EM

Probe Length / Type: 3' 8" 5"
 Nozzle Size: 1/2"
 Meter Box #: Aper 3 ΔH@: 1.723 Y: .993
 Assumed H₂O: % T_s: Cp:

P_{BAR}: Ambient Temperature: 69 °F P_s: Reference ΔP: K-factor:

Pretest Leak Rate: .006 ft³ @ 2.2 "hg Filler #: Comments:
 Posttest Leak Rate: .003 ft³ @ 5.5 "hg
 Pilot Leak Check: Orsat Leak Check:

Fyrite Data:	Moisture Data Total: <u> </u>		Traverse Schematic:
O ₂ : <u> </u>	ml H ₂ O	g Sil. Gel	
CO ₂ : <u> </u>			

Page of Record data every minutes

Trav. #	Sample Time	Clock Time	Meter Reading	Pilot #:		TC #s:		Probe	Stack	Tm In	Tm Out	Filter	Exit	Pump Vac.
				ΔP	ΔH(calc)	ΔH(act)								
	0	7:24	617.880		2.5									
1-1	10								135	90	86	229	62	3
2	20								140	90	87	233	67	3
3	30								145	93	86	232	69	3
4	40								150	95	84	237	60	3
5	50								160	96	83	239	65	3
6	60		670.509						160	95	83	240	65	3
2-1	10								155	92	83	210	67	3
2	20								183	92	83	241	68	3
3	30								180	86	84	242	64	3
4	40								180	93	83	242	68	3
5	50								175	98	85	244	68	3
6	60		718.215						175	99	86	243	68	3
3-1	10	1003							175	101	90	242	67	4
2	20								175	101	90	240	67	4
3	30								180	102	91	237	67	4
4	40								180	100	92	236	67	4
5	50								180	101	92	238	66	4
6	60		770.550						175	101	92	240	67	4
4-1	10								158	92	91	227	68	4
2	20								156	102	90	232	67	4
3	30								158	105	93	233	67	4
4	40								162	106	95	234	65	4
5	15								163	107	96	235	64	4
6	16	12:14	824.501						154	103	97	234	66	4

①: V_m: 206.621 avg √ΔP: avg ΔH: T_s: 165 T_m: 93 Calculated By: Checked By:



SAMPLE RECOVERY DATA

Date: 8-15-00
Client: Newport Steel
Plant: Newport Is.
Location: Baghouse
Test Method: M12
Run #: 2 TC #:

IMPINGER DATA

	#1	#2	#3	#4	#5	
Contents	0.1N HNO ₃	0.1N HNO ₃	MT	SG		Total
Final Wt.(g)	577 726	697	585	892		
Initial Wt.(g)	677	686	581	863		
Net Gain (g)	49	11	4	29		93

RECOVERED SAMPLES

Recovered by: DW
Date: 8/15/00
Filter #: -
Silica Gel Color: ok

COMMENTS: _____

Date: 08/15/00 Run #: 2Location: BaghouseSample Type: _____ Operator: SM, CWP_{BAR}: 30.02 Ambient Temperature: _____ °F P_s: _____

Probe Length / Type: _____

Nozzle Size: _____ = 1.13Meter Box #: Apex 30H@ 1.7234 Y: 9931Assumed H₂O: _____ % T_s: _____ Cp: _____

Reference ΔP: _____ K-factor: _____

Pretest Leak Rate: .018 ft³ @ 10 "hg Filter #: _____Posttest Leak Rate: .001 ft³ @ 20 "hg

Pilot Leak Check: _____ Orsat Leak Check: _____

Comments: _____

Fyrite Data: _____

Moisture Data Total: _____

Traverse Schematic: _____

O₂: _____ml H₂O

g Sil. Gel

CO₂: _____

Page _____ of _____ Record data every _____ minutes

Trav. #	Sample Time	Clock Time	Meter Reading	Pilot #:		TC #s:		Probe	Stack	Tm In	Tm Out	Filter	Exit	Pump Vac.
				ΔP	ΔH(calc)	ΔH(act)								
		<u>1:45</u>	<u>513.93</u>											
1	10			<u>.0016</u>	<u>2.53</u>				<u>135</u>	<u>109</u>	<u>102</u>	<u>230</u>	<u>53</u>	<u>11</u>
2	20								<u>135</u>	<u>111</u>	<u>105</u>	<u>239</u>	<u>53</u>	<u>11</u>
3	30								<u>135</u>	<u>112</u>	<u>107</u>	<u>243</u>	<u>44</u>	<u>11</u>
4	40								<u>135</u>	<u>118</u>	<u>113</u>	<u>242</u>	<u>46</u>	<u>11</u>
5	50								<u>131</u>	<u>108</u>	<u>111</u>	<u>239</u>	<u>47</u>	<u>11</u>
6	60								<u>130</u>	<u>111</u>	<u>109</u>	<u>239</u>	<u>46</u>	<u>11</u>
10-1	10								<u>135</u>	<u>108</u>	<u>108</u>	<u>237</u>	<u>51</u>	<u>12</u>
2	20								<u>135</u>	<u>103</u>	<u>103</u>	<u>236</u>	<u>44</u>	<u>12</u>
3	30								<u>140</u>	<u>115</u>	<u>108</u>	<u>240</u>	<u>42</u>	<u>13</u>
4	40								<u>142</u>	<u>114</u>	<u>110</u>	<u>239</u>	<u>45</u>	<u>13</u>
5	50								<u>140</u>	<u>114</u>	<u>110</u>	<u>238</u>	<u>50</u>	<u>13</u>
6	60		<u>583.417</u>						<u>140</u>	<u>116</u>	<u>111</u>	<u>238</u>	<u>45</u>	<u>13</u>
11-1									<u>150</u>	<u>110</u>	<u>111</u>	<u>208</u>	<u>52</u>	<u>12</u>
2									<u>150</u>	<u>122</u>	<u>113</u>	<u>217</u>	<u>52</u>	<u>12</u>
3									<u>150</u>	<u>136</u>	<u>123</u>	<u>224</u>	<u>52</u>	<u>12</u>
4									<u>146</u>	<u>134</u>	<u>127</u>	<u>228</u>	<u>46</u>	<u>12</u>
5									<u>145</u>	<u>132</u>	<u>127</u>	<u>221</u>	<u>40</u>	<u>12</u>
6			<u>560.342</u>						<u>145</u>	<u>128</u>	<u>124</u>	<u>229</u>	<u>44</u>	<u>12</u>
12-1									<u>145</u>	<u>108</u>	<u>113</u>	<u>210</u>	<u>44</u>	<u>13.5</u>
2									<u>145</u>	<u>125</u>	<u>120</u>	<u>217</u>	<u>44</u>	<u>13</u>
3									<u>160</u>	<u>122</u>	<u>117</u>	<u>244</u>	<u>46</u>	<u>13</u>
4									<u>150</u>	<u>125</u>	<u>119</u>	<u>244</u>	<u>46</u>	<u>14</u>
5									<u>162</u>	<u>118</u>	<u>116</u>	<u>230</u>	<u>47</u>	<u>14</u>
6		<u>6:28</u>	<u>616.726</u>						<u>151</u>	<u>116</u>	<u>114</u>	<u>229</u>	<u>48</u>	<u>14</u>

Θ: _____ V_m: 222.752 avg √ΔP: _____ avg ΔH: _____ T_s: 122 T_m: 113 Calculated By: _____ Checked By: _____

FBT

—

Test Method:

1. *Chlorophyll *a** and *Chlorophyll *b** were determined by the method of Arar and Collins (1971).

	#1	#2	#3	#4	#5	
Contents	0.1 N HNO ₃	0.1 N HNO ₃	MT	SG		Total
Final Wt.(g)	721	576	634	846 913		
Initial Wt.(g)	672	560	628	885 875		
Net Gain (g)	49	16	6	38		109

RECOVERED SAMPLES

Recovered by: H.H.H.
Date: - 8/15/00
Filter #: - _____
Silica Gel Color: 02

COMMENTS: _____

Client / City: Newport SteelDate: 08/15/02 Run #: 1Location: BaghouseSample Type: _____ Operator: RM CWP_{BAR}: _____ Ambient Temperature: _____ °F P_s: _____Pretest Leak Rate: .003 ft³ @ 15 "hg Filter #:Posttest Leak Rate: .003 ft³ @ 10 "hg

Pilot Leak Check: _____ Orsat Leak Check: _____

Fyrite Data: _____ Moisture Data Total: _____

O₂: _____ ml H₂O g Sil. GelCO₂: _____Page of Record data every minutes

Probe Length / Type: _____

Nozzle Size: _____ = 1.13Meter Box #: Aper 3 ΔH@: 1.2234 γ: .9931Assumed H₂O: _____ % T_s: _____ Cp: _____

Reference ΔP: _____ K-factor: _____

Comments: _____

Traverse Schematic: _____

Trav. #	Sample Time	Clock Time	Meter Reading	Pilot #:		TC #s:		Probe	Stack	Tm In	Tm Out	Filter	Exit	Pump Vac.
				ΔP	ΔH(calc)	ΔH(act)								
		<u>8:14</u>	<u>157.717</u>					<u>X</u>						
<u>7-1</u>	<u>10</u>			<u>.0016</u>	<u>2.53</u>				<u>145</u>	<u>81</u>	<u>78</u>	<u>265</u>	<u>40</u>	<u>7.5</u>
<u>2</u>	<u>20</u>								<u>145</u>	<u>89</u>	<u>79</u>	<u>265</u>	<u>41</u>	<u>7.5</u>
<u>3</u>	<u>30</u>								<u>145</u>	<u>92</u>	<u>81</u>	<u>289</u>	<u>41</u>	<u>7.5</u>
<u>4</u>	<u>40</u>								<u>145</u>	<u>93</u>	<u>83</u>	<u>240</u>	<u>65</u>	<u>7.5</u>
<u>5</u>	<u>50</u>								<u>155</u>	<u>94</u>	<u>84</u>	<u>262</u>	<u>55</u>	<u>7.5</u>
<u>6</u>	<u>60</u>		<u>212.671</u>						<u>155</u>	<u>94</u>	<u>85</u>	<u>255</u>	<u>55</u>	<u>7.5</u>
<u>8-1</u>	<u>10</u>								<u>140</u>	<u>89</u>	<u>87</u>	<u>255</u>	<u>61</u>	<u>6</u>
<u>2</u>	<u>20</u>								<u>140</u>	<u>96</u>	<u>88</u>	<u>255</u>	<u>53</u>	<u>6</u>
<u>3</u>	<u>30</u>								<u>155</u>	<u>100</u>	<u>90</u>	<u>280</u>	<u>52</u>	<u>6</u>
<u>4</u>	<u>40</u>								<u>165</u>	<u>101</u>	<u>93</u>	<u>281</u>	<u>51</u>	<u>6</u>
<u>5</u>	<u>50</u>								<u>165</u>	<u>104</u>	<u>94</u>	<u>275</u>	<u>50</u>	<u>6</u>
<u>6</u>	<u>60</u>		<u>274.486</u>						<u>165</u>	<u>104</u>	<u>96</u>	<u>277</u>	<u>51</u>	<u>6</u>
<u>9-1</u>	<u>10</u>								<u>150</u>	<u>98</u>	<u>99</u>	<u>260</u>	<u>49</u>	<u>5</u>
<u>2</u>	<u>20</u>								<u>150</u>	<u>105</u>	<u>100</u>	<u>261</u>	<u>49</u>	<u>5</u>
<u>3</u>	<u>30</u>								<u>130</u>	<u>111</u>	<u>100</u>	<u>260</u>	<u>50</u>	<u>5</u>
<u>4</u>	<u>40</u>								<u>130</u>	<u>112</u>	<u>105</u>	<u>260</u>	<u>62</u>	<u>5</u>
<u>5</u>	<u>50</u>								<u>130</u>	<u>112</u>	<u>105</u>	<u>260</u>	<u>49</u>	<u>5</u>
<u>6</u>	<u>60</u>		<u>330.452</u>						<u>130</u>	<u>112</u>	<u>105</u>	<u>260</u>	<u>54</u>	<u>5</u>
<u>10-1</u>	<u>10</u>								<u>135</u>	<u>105</u>	<u>106</u>	<u>242</u>	<u>52</u>	<u>5</u>
<u>2</u>	<u>20</u>								<u>135</u>	<u>108</u>	<u>104</u>	<u>241</u>	<u>56</u>	<u>5</u>
<u>3</u>	<u>30</u>								<u>145</u>	<u>100</u>	<u>104</u>	<u>241</u>	<u>65</u>	<u>5</u>
<u>4</u>	<u>40</u>								<u>135</u>	<u>110</u>	<u>105</u>	<u>242</u>	<u>55</u>	<u>5</u>
<u>5</u>	<u>50</u>								<u>135</u>	<u>109</u>	<u>105</u>	<u>244</u>	<u>68</u>	<u>5</u>
<u>6</u>	<u>60</u>		<u>385.860</u>						<u>135</u>	<u>108</u>	<u>104</u>	<u>237</u>	<u>56</u>	<u>5</u>

Θ: _____ V_m: 226.143 avg √ΔP: .04 avg ΔH: 2.53 T_s: 144 T_m: 96 Calculated By: _____ Checked By: _____

FBT

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Newport Steel

Date: 8/16/00

Sampling Location: EAF Exhaust / Brandt Inlet

Run #: 3 Clock Time: 0900

Barometric Pressure, in Hg: 29.65 Static Pressure, "H₂O: -4.1

Operators: PH 10W

TC #: _____ Pitot Tube #: _____ Pilot Leak Check: _____

Pitot Tube Cp: 0.84

Wet Bulb, °F: _____ Dry Bulb, °F: _____ Ag 185.5"

Fyrite O₂: CO₂:

Traverse Point #	ΔP in. H ₂ O	Stack Temp. °F	Cyclonic Flow °
1	0.85	190	
2	1.2	192	
3	1.3	194	
4	1.4	200	
5	1.2	200	
6	1.3	187	
7	1.1	160	
8	1.2	175	
1	0.98	195	
2	1.1	168	
3	1.0	163	
4	0.96	200	
5	1.3	231	
6	1.1	153	
7	1.1	153	
8	1.1	153	
Average:	$\sqrt{\Delta P} = 1.066$	T _S = 184	°C =

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times N_2)$$

$$Md = (0.44 \times \underline{\hspace{2cm}}) + (0.32 \times \underline{\hspace{2cm}}) + (0.28 \times \underline{\hspace{2cm}}).$$

$$Md = \underline{\hspace{2cm}}$$

$$M_s = M_d \times \left(1 - \frac{\%H_2O}{100}\right) + 18 \left(\frac{\%H_2O}{100}\right)$$

$$Ms = \underline{\hspace{1cm}} \times \left(1 - \frac{\hspace{1cm}}{100} \right) + 18 \left(\frac{\hspace{1cm}}{100} \right)$$

$$M_S =$$

$$T_s = \underline{\hspace{2cm}} F + 460 = \underline{\hspace{2cm}} R$$

$$P_s = P_{bar} + \frac{SP}{13.6} = \underline{\hspace{2cm}} + \frac{\underline{\hspace{2cm}}}{13.6}$$

$$P_s = \text{_____} \text{ in. Hg}$$

$$\sqrt{\Delta P} =$$

$$V_s = 85.49 \times C_p \times \sqrt{\Delta P} \times \sqrt{\frac{T_s(R)}{P_s \times M_s}}$$

$$V_s = 85.49 \times \frac{1}{1000} \times \frac{1}{1000} \times \sqrt{\frac{1}{1000} \times \frac{1}{1000}}$$

$$V_s = \quad \text{ft/sec}$$

$$As = \underline{\hspace{2cm}} sq.ft$$

$$Qa = Vs \times As \times 60s/m$$

$$Qa = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} \times 60$$

$Qa =$ _____ *acfm*

$$Q_{std} = Q_a \times 17.647 \times \frac{P_s}{T_s} \times \left(1 - \frac{\%H_2O}{100}\right)$$

$$Q_{std} = \underline{\hspace{2cm}} \times 17.647 \times \underline{\hspace{2cm}} \times \left(1 - \frac{\underline{\hspace{2cm}}}{100} \right)$$

$$Q_{std} = \text{_____} \text{ dscfm}$$

FBT

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Newport Steel Date: 6/15/00
Sampling Location: EAF Exhaust / Brundt Baghouse In Clock Time: 1540
Run #: 2 Operators: PM / DW
Barometric Pressure, in Hg: _____ Static Pressure, " H₂O: -4.7
TC #: _____ Pilot Tube #: _____ Pitot Tube Cp: 0.64
Stack Dimension, in. Diameter or Side 1: 109' Side 2: _____
Wet Bulb, °F: _____ Dry Bulb, °F: _____ Fyrite O₂: _____ CO₂: _____

Traverse Point #	Velocity Head in. H ₂ O	Stack Temp. °F	Cyclonic Flow °
1	0.92	126 125	
2	1.3	125	
3	1.2	126	
4	1.5	127	
5	1.3	125	
6	1.2	126	
7	1.2	125	
8	1.1	125	
1	0.95	120	
2	1.3	126	
3	1.3	126	
4	1.4	127	
5	1.5	121	
6	1.4	122	
7	1.5	122	
8	1.3	123	
Average: $\sqrt{\Delta P} =$	1.1257	Ts= 125	°C=

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times N_2)$$

$$Md = (0.44 \times \text{---}) + (0.32 \times \text{---}) + (0.28 \times \text{---})$$

$$Md = \underline{\hspace{2cm}}$$

$$Ms = Md \times \left(1 - \frac{\%H_2O}{100}\right) + 18 \left(\frac{\%H_2O}{100}\right)$$

$$Ms = \text{-----} \times \left(1 - \frac{\text{-----}}{100}\right) + 18 \left(\frac{\text{-----}}{100}\right)$$

$$M_S = \underline{\hspace{2cm}}$$

$$T_s = \text{---} F + 460 = \text{---} R$$

$$P_s = P_{bar} + \frac{SP}{13.8} = \text{-----} + \frac{\text{-----}}{13.8}$$

$P_s = \underline{\hspace{1cm}} \text{ in. Hg}$

$$\sqrt{\Delta P} = \underline{\hspace{2cm}}$$

$$V_s = 85.49 \times C_p \times \sqrt{\Delta P} \times \sqrt{\frac{T_s(R)}{P_s \times M_s}}$$

$$V_s = 85.49 \times \frac{1}{1000} \times \frac{1}{1000} \times \sqrt{\frac{1}{1000} \times \frac{1}{1000}}$$

$$V_s = \text{---} \text{ft} / \text{sec}$$

As = _____ sq. ft

$$Qa = Vs \times As \times 60s / m$$

$$Qa = \text{---} \times \text{---} \times 60$$

$Q_a =$ _____ acfm

$$Q_{std} = Q_a \times 17.647 \times \frac{P_s}{T_s} \times \left(1 - \frac{\%H_2O}{100}\right)$$

$$Q_{std} = \text{-----} \times 17.647 \times \text{-----} \times \left(1 - \frac{\text{-----}}{100}\right)$$

$Q_{std} = \text{-----} \text{ dscfm}$

FBT

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Date: 6/15/00

Clock Time: 0900

Operators: PH 102

Static Pressure, " H₂O: - 3.8

Pitot Tube C_p : 0.64

Side 2:

Dry Bulb, °F:

Fyrite O₂: CO₂:

Traverse Point #	Velocity Head in. H ₂ O	Stack Temp. °F	Cyclonic Flow °
1	1.592	125 135	
2	1.3	128 138	
3	1.4	128 142	
4	1.4	126 139	
5	1.3	136	
6	1.3	131	
7	1.4	131	
8	1.3	126	
1	0.96	126	
2	0.98 1.4	128 131	
3	0.96 1.3	129 134	
4	1.4	131	
5	1.3	135	
6	1.3	134	
7	1.2	131	
8	1.1	131	
Average: $\sqrt{\Delta P}$ =	1.124	T _s = 134	°C=

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times N_2)$$

$$Md = (0.44 \times \underline{\hspace{2cm}}) + (0.32 \times \underline{\hspace{2cm}}) + (0.28 \times \underline{\hspace{2cm}})$$

$$Md =$$

$$Ms = Md \times \left(1 - \frac{\%H_2O}{100}\right) + 18 \left(\frac{\%H_2O}{100}\right)$$

$$Ms = \text{-----} \times \left(1 - \frac{\text{-----}}{100}\right) + 18 \left(\frac{\text{-----}}{100}\right)$$

$$M_S =$$

$$T_s = \quad F + 460 = \quad R$$

$$P_s = P_{bar} + \frac{SP}{13.8} = \text{-----} + \frac{\text{-----}}{13.8}$$

$$P_s = \quad \text{in. Hg}$$

$$\sqrt{\Delta P} =$$

$$V_s = 85.49 \times C_p \times \sqrt{\Delta P} \times \sqrt{\frac{T_s(R)}{P_s \times M_s}}$$

$$V_s = 85.49 \times \frac{1}{1000} \times \frac{1}{1000} \times \sqrt{\frac{1}{1000} \times \frac{1}{1000}}$$

$$V_s = \quad \text{ft / sec}$$

As = _____ sq. ft

$$Q_a = V_s \times A_s \times 60s / m$$

Qa = x x60

$Q_a =$ _____ acfm

$$Q_{std} = Q_a \times 17.647 \times \frac{P_s}{T_s} \times \left(1 - \frac{\%H_2O}{100}\right)$$

$$Q_{std} = \text{---} \times 17.647 \times \text{---} \times \left(1 - \frac{\text{---}}{100}\right)$$

$Q_{std} = \text{_____} \text{ dscfm}$

Average: $\sqrt{\Delta P} = 1.124$	$T_s = 134$	$^{\circ}\text{C} =$
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FBT

GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: Newport Steel

Date: 8/14/00

Sampling Location: Furnace Exhaust / Brant Inlet

Clock Time: 1545

Run #: 001.1

Operators: P4 / Dm

Barometric Pressure, in Hg:

Static Pressure, " H₂O: - - 4.9

TC #:

Pitot Tube #:

Pitot Tube Cp: 0.64

Stack Dimension, in. Diameter or Side 1:

Side 2:

Wet Bulb, °F:

Dry Bulb, °F:

Fyrite O₂:

CO₂:

Horizontal

Traverse Point #	Velocity Head in. H ₂ O	Stack Temp. °F	Cyclonic Flow °
1	.91	158	
2	1.3	155	
3	1.5	160	
4	1.5	163	
5	1.3	156	
6	1.3	158	
7	1.2	148	
8	1.3	146	
Verticel			
1	1.2	151	
2	1.4	159	
3	1.4	165	
4	1.4	170	
5	1.4	174	
6	1.4	173	
7	1.5	174	
8	1.3	174	
Average: $\sqrt{\Delta P} = 1.1523$		Ts= 162	°C=

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times N_2)$$

$$Md = (0.44 \times \underline{\hspace{2cm}}) + (0.32 \times \underline{\hspace{2cm}}) + (0.28 \times \underline{\hspace{2cm}})$$

$$Md =$$

$$Ms = Md \times \left(1 - \frac{\%H_2O}{100}\right) + 18 \left(\frac{\%H_2O}{100}\right)$$

$$Ms = \text{-----} \times \left(1 - \frac{\text{-----}}{100}\right) + 18 \left(\frac{\text{-----}}{100}\right)$$

$$M_s =$$

$$T_s = \quad F + 460 = \quad R$$

$$P_s = P_{bar} + \frac{SP}{13.8} = \frac{\quad}{13.8} + \frac{\quad}{13.8}$$

$$P_s = \quad \text{in. Hg}$$

$$\sqrt{\Delta P} =$$

$$V_s = 85.49 \times C_p \times \sqrt{\Delta P} \times \sqrt{\frac{T_s(R)}{P_s \times M_s}}$$

$$V_s = 85.49 \times \frac{1}{1000} \times \frac{1}{1000} \times \sqrt{\frac{1000}{1000} \times \frac{1000}{1000}}$$

$$V_S = \quad \text{ft / sec}$$

As = sq. ft

$$Q_a = V_s \times A_s \times 60s / m$$

$Q_a = \quad \times \quad \times 60$

$Q_a =$ acfm

$$Q_{std} = Q_a \times 17.647 \times \frac{P_s}{T_s} \times \left(1 - \frac{\%H_2O}{100}\right)$$

$$Q_{std} = \text{-----} \times 17.647 \times \text{-----} \times \left(1 - \frac{\text{-----}}{100}\right)$$

$$Q_{std} = \text{dscfm}$$

Average: $\sqrt{\Delta P} = 1.1523$	$T_s = 16.2$	$^{\circ}\text{C} =$
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FBT

MIDGET IMPINGER SAMPLING DATA SHEET

Company: Newport Steel Date: 8/16/00 DGM Orifice #: 5
 Sampling Site: BAF Exhaust / Brandt B.H. In Operator: PH DGM λ : 1.051
 Run #: 4 Leak $\checkmark$: Pre: / Probe Type: _____
 Sample Type: M6 / SO₂ Post: _____ P_{BAR}: 30.02

SAMPLING PARAMETERS

* past @ 1501 / 10 min

Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate	Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate
Clock	Sample				Clock	Sample			
1351	✓	0	76	14/min	1501	70	2.516	78	14/min
	10	0.378	76	" "					
	20	0.764	76	" "					
	30	1.118	76	" "					
	40	1.511	77	" "					
	50	1.730	78	" "					
	60	2.101	78	" "					

Run Time: _____ (min) Meter Volume: _____ (ft³ or l) Average Meter Temp.: _____ (°F)

STACK GAS CONDITIONS DATA

Time: _____ Wet / Dry: _____ / _____ CO₂: _____ %
 P_s: _____ "H₂O Pitot # / C_p: _____ / _____ TC #: _____ O₂: _____ %

Point #	ΔP	T _s	Point #	ΔP	T _s

Avg. $\sqrt{\Delta P}$: _____ Average Stack Temp.: _____ (°F)

FBT

MIDGET IMPINGER SAMPLING DATA SHEET

Company: Newport Steel Date: 8-16-00 DGM/Orifice #: DGM H5
Sampling Site: Bayhouse Inlet Operator: PH DGM λ: 1.051
Run #: 3 Leak ✓: Pre: ✓ Probe Type: TFE
Sample Type: SO₂ Method 6 Post: _____ P_{BAR}: 29.8

SAMPLING PARAMETERS

Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate	Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate
Clock	Sample				Clock	Sample			
0900	0	0.000	72	12pm	1010	70	3.244	72	12/min
	10	0.40	73	12pm	1020	80	3.446	72	12/min
	20	0.903	73	12pm		90	3.631	72	12/min
	30	1.229	73	12pm		100	3.863	72	12/min
	40	1.531	73	12pm		110	4.151	72	12/min
	50	1.750	73	12pm		120	4.057	73	11 min
1000	60	2.041	73	12/min					

Run Time: _____ (min) Meter Volume: _____ (ft³ or l) Average Meter Temp.: _____ (°F)

STACK GAS CONDITIONS DATA

Time: _____ Wet / Dry: _____ / _____ CO₂: _____ %
P_S: "H₂O Pitot # / C_p: _____ / _____ TC #: _____ O₂: _____ %

[illegible]

Avg. $\sqrt{\Delta P}$: _____ Average Stack Temp.: _____ (°F)

FBT

MIDGET IMPINGER SAMPLING DATA SHEET

Company: Newport Steel Date: 8-15-00 DGM/Orifice #: DGM #5
 Sampling Site: Baghouse Inlet Operator: DW DGM λ : 1.051
 Run #: 2 Leak $\checkmark$: Pre: $\checkmark$ Probe Type: TFE
 Sample Type: SO₂ - M₂Flow 6 Post: _____ P_{BAR}: _____

SAMPLING PARAMETERS

Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate	Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate
Clock	Sample				Clock	Sample			
1501	0	0.000	84	12pm		70	2.57	86	12pm
	10	0.36	84	12pm		80	2.95	86	12pm
	20	0.73	85	12pm		90	3.31	86	12pm
	30	1.10	85	12pm		100	3.80	86	12pm
	40	1.45	86	12pm		110	4.08	86	12pm
	50	1.83	86	12pm		120	4.300	86	
	60	2.19	86	12pm					

Run Time: 120 (min) Meter Volume: 4.300 (ft³ or l) Average Meter Temp.: 85.6 (°F)

STACK GAS CONDITIONS DATA

Time: _____ Wet / Dry: / CO₂: _____ %
 P_s: _____ "H₂O Pitot # / C_p: / TC #: _____ O₂: _____ %

Point #	ΔP	T _s	Point #	ΔP	T _s

Avg. $\sqrt{\Delta P}$: _____ Average Stack Temp.: _____ (°F)

FBT

MIDGET IMPINGER SAMPLING DATA SHEET

Company: Newport Steel Date: 8-15-00 DGM/Orifice #: DGM #5
 Sampling Site: Baghouse Inlet Operator: DW DGM λ : 1.051
 Run #: 1 Leak $\checkmark$: Pre: $\checkmark$ Probe Type: TFE
 Sample Type: SO₂ - Method 6 Post: _____ P_{BAR}: _____

SAMPLING PARAMETERS

Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate	Time		DGM (ft ³ or l)	Temp (°F)	Flow Rate
Clock	Sample				Clock	Sample			
1000	0	0.000	77	10pm		70	2.43	80	10pm
	10	0.400	79	10pm		80	2.83	80	10pm
	20	0.66	80	10pm		90	3.19	81	10pm
	30	1.00	81	10pm		100	3.54	82	10pm
	40	1.24	80	10pm		110	3.92	82	10pm
	50	1.60	80	10pm	1200	120	4.343	82	
	60	2.05	80	10pm					

Run Time: 120 (min) Meter Volume: 4.343 (ft³ or l) Average Meter Temp.: 80.3 (°F)

STACK GAS CONDITIONS DATA

Time: _____ Wet / Dry: / CO₂: _____ %
 P_s: _____ "H₂O Pitot # / C_p: / TC #: _____ O₂: _____ %

Point #	ΔP	T _s	Point #	ΔP	T _s

Avg. $\sqrt{\Delta P}$: _____ Average Stack Temp.: _____ (°F)

FBT

APPENDIX E
STACK TEST CALCULATIONS

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/15/00 0814-1300
 RUN #: 1

STATIC PRESSURE("H ₂ O):	0	"HG	30.01
BAROMETRIC("Hg):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	228.143
TOTAL METER VOLUME:	228.143	DSCF	216.365
AVG ORIFICE DIA:	0.040		
AVG STACK TEMP °F:	2.53		
AVG METER TEMP °F:	144.0	*R	604.0
Cp PITOT :	98.0		
NOZZLE DIA.(inches):	0.84		
METER GAMMA:	1.130	An(ft ²)	6.96E-03
LEAK RATE(IF<0.02):	0.993		
CIRC STACK? 1=Y,0=N:	0	As(ft ²)	5511.50
DIA OR DIM (inches):	793656.00		
% O ₂ :	20.58	Dry Mole Wt	28.8744
% CO ₂ :	0.32	Stack Mole Wt	28.6225099
VOL CONDENSATE(ml):	109	% H ₂ O	2.32
PARTICULATE(mg):	6.606		
LEAD(µg):	49.00		

***** CALCULATED RESULTS *****

STACK GAS CONDITIONS

Velocity (Vs):	2.4	ft/sec
Volumetric Flow Rate (Qa):	796,539	acfm
(Qstd):	682,227	dscfm
Stack Gas Temp :	144	°F
Moisture (%H ₂ O):	2.3	%
%O ₂ :	20.6	%
%CO ₂ :	0.3	%
Isokinetic Sampling Rate:	104.6	%

PARTICULATE EMISSIONS DATA

PM Concentration (Cs):	4.70E-04	gr/dscf
	6.72E-08	lb/dscf
PM Emission Rate (Er):	2.75E+00	lb/hr

LEAD EMISSIONS DATA

LEAD Concentration (Cs):	3.49E-06	gr/dscf
	4.98E-10	lb/dscf
LEAD Emission Rate (Er):	2.04E-02	lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/15/00 1345-1828
 RUN #: 2

STATIC PRESSURE("H ₂ O):	0	"HG	30.01
BAROMETRIC("Hg):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	222.792
ACTUAL METER VOLUME:	222.792	DSCF	205.759
Average $\sqrt{\Delta P}$:	0.040		
AVG ORIFICE ΔH :	2.53		
AVG STACK TEMP °F:	122.0	*R	582.0
AVG METER TEMP °F:	113.0		
Cp PITOT :	0.84		
NOZZLE DIA.(inches):	1.130	An(ft ²)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(ft ²)	5511.50
DIA OR DIM (inches):	793656.00		
% O ₂ :	20.68	Dry Mole Wt	28.896
% CO ₂ :	0.43	Stack Mole Wt	28.6690172
VOL CONDENSATE(ml):	93	% H ₂ O	2.08
PARTICULATE(mg):	26.475		
LEAD(μg):	65.00		

***** CALCULATED RESULTS *****

STACK GAS CONDITIONS

Velocity (Vs):	2.4 ft/sec
Volumetric Flow Rate (Qa):	781,264 acfm
(Qstd):	696,096 dscfm

Stack Gas Temp :	122 °F
Moisture (%H ₂ O):	2.1 %
%O ₂ :	20.7 %
%CO ₂ :	0.4 %
Isokinetic Sampling Rate:	97.5 %

PARTICULATE EMISSIONS DATA

PM Concentration (Cs):	1.98E-03 gr/dscf
	2.83E-07 lb/dscf
PM Emission Rate (Er):	1.18E+01 lb/hr

LEAD EMISSIONS DATA

LEAD Concentration (Cs):	4.86E-06 gr/dscf
	6.95E-10 lb/dscf
LEAD Emission Rate (Er):	2.90E-02 lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/16/00 0754-1214
 RUN #: 3

STATIC PRESSURE("H ₂ O):	0	"HG	30.01
BAROMETRIC("Hg):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	206.621
ACTUAL METER VOLUME:	206.621	DSCF	197.711
Average $\sqrt{\Delta P}$:	0.040		
AVG ORIFICE ΔH :	2.50		
AVG STACK TEMP °F:	165.0	*R	625.0
AVG METER TEMP °F:	93.0		
Cp PITOT :	0.84		
NOZZLE DIA.(inches):	1.130	An(R ²)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(R ²)	5511.50
DIA OR DIM (inches):	793656.00		
% O ₂ :	20.43	Dry Mole Wt	28.8716
% CO ₂ :	0.34	Stack Mole Wt	28.673397
VOL CONDENSATE(ml):	78	% H ₂ O	1.82
PARTICULATE(mg):	2.575		
LEAD(μg):	38.00		
***** CALCULATED RESULTS *****			

STACK GAS CONDITIONS

Velocity (Vs):	2.4 ft/sec
Volumetric Flow Rate (Qa):	809,549 acfm
(Qstd):	673,456 dscfm
Stack Gas Temp :	165 ° F
Moisture (%H ₂ O):	1.8 %
%O ₂ :	20.4 %
%CO ₂ :	0.3 %
Isokinetic Sampling Rate:	96.9 %

PARTICULATE EMISSIONS DATA

PM Concentration (Cs):	2.01E-04 gr/dscf
	2.87E-08 lb/dscf
PM Emission Rate (Er):	1.16E+00 lb/hr

LEAD EMISSIONS DATA

LEAD Concentration (Cs):	2.96E-06 gr/dscf
	4.23E-10 lb/dscf
LEAD Emission Rate (Er):	1.71E-02 lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/16/00 1239-1500
 RUN #: 4

STATIC PRESSURE("H ₂ O):	0	"HG	30.01
BAROMETRIC("Hg):	30.01		
SAMPLE TIME(min):	180	Vm(corr)	107.625
ACTUAL METER VOLUME:	107.625	DSCF	101.335
Average $\sqrt{\Delta P}$:	0.040		
AVG ORIFICE ΔH :	2.50		
AVG STACK TEMP °F:	188.0	"R	648.0
AVG METER TEMP °F:	102.0		
Cp PITOT :	0.84		
NOZZLE DIA.(inches):	1.130	An(ft ²)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(ft ²)	5511.50
DIA OR DIM (inches):	793656.00		
% O ₂ :	20.66	Dry Mole Wt	28.8872
% CO ₂ :	0.38	Stack Mole Wt	28.6545944
VOL CONDENSATE(ml):	47	% H ₂ O	2.14
PARTICULATE(mg):	0.55		
LEAD(µg):	13.00		

***** CALCULATED RESULTS *****

STACK GAS CONDITIONS

Velocity (Vs):	2.5 ft/sec
Volumetric Flow Rate (Qa):	824,580 acfm
(Qstd):	659,501 dscfm
Stack Gas Temp :	188 °F
Moisture (%H ₂ O):	2.1 %
%O ₂ :	20.7 %
%CO ₂ :	0.4 %
Isokinetic Sampling Rate:	67.6 %

PARTICULATE EMISSIONS DATA

PM Concentration (Cs):	8.36E-05 gr/dscf
	1.19E-08 lb/dscf
PM Emission Rate (Er):	4.73E-01 lb/hr

LEAD EMISSIONS DATA

LEAD Concentration (Cs):	1.98E-06 gr/dscf
	2.82E-10 lb/dscf
LEAD Emission Rate (Er):	1.12E-02 lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: EAF Exhaust/Brandt Inlet
 DATE/TIME: 8/15/00 0814-1214
 RUN #: 1

DATA INPUT

STATIC PRESSURE("H ₂ O):	-3.80	"Hg	29.73
BAROMETRIC("Hg):	30.01		
Cp PITOT :	0.84		
AVG. $\sqrt{\Delta P}$:	1.124		
AVG STACK TEMP °F:	134.0	°R	594.0
CIRC STACK? 1=Y,0=N:	1		
DIA OR DIM (inches):	185.50	As(ft ²)	1.88E+02
% O ₂ :	20.54	Dry Mole Wt	28.83
% CO ₂ :	0.07	Stack Mole Wt	28.58
Moisture Data			
ACTUAL METER VOLUME:	228.14		
AVG. METER TEMP (°F):	98.00	Volsid (dscf)	216.365
AVG ORIFICE ΔH:	2.53		
METER "γ":	0.99		
VOL CONDENSATE(ml):	109.00	H ₂ O %	2.32
DRY BULB TEMP:			
WET BULB TEMP:		VP ("Hg)	#N/A
CALIBRATION :	NOx as NO₂		
PPM :	8.86		
CALIBRATION :	Carbon Monoxide		
PPM :	55.28		

CALCULATED DATA

STACK GAS DATA

GAS VELOCITY (Vs):	67.48	ft/sec
STACK GAS FLOW (Qs):	759,930	acfm
	671,215	dscfm
STACK GAS TEMP :	134	° F
MOISTURE (%H ₂ O):	2.3	%

Emission Data for:

NOx

CONCENTRATION (Cs):	6.89E-07	lb/dscf
	9	ppm
EMISSION RATE (Er):	2.78E+01	lb/hr

Emission Data for:

CO

CONCENTRATION (Cs):	4.02E-06	lb/dscf
	55	ppm
EMISSION RATE (Er):	1.62E+02	lb/hr

Comments:

CLIENT/PROJECT #:	Newport Steel
SAMPLE LOCATION:	EAF Exhaust/Brandt Inlet
DATE/TIME:	8/15/00 1532-1754
RUN #:	2

DATA INPUT

STATIC PRESSURE("H ₂ O):	-4.70	"Hg	29.66
BAROMETRIC("Hg):	30.01		
Cp PITOT :	0.84		
AVG. $\sqrt{\Delta P}$:	1.126		
AVG STACK TEMP °F:	125.0	°R	585.0
CIRC STACK? 1=Y,0=N:	1		
DIA OR DIM (inches):	185.50	As(ft ²)	1.88E+02
% O ₂ :	20.58	Dry Mole Wt	28.86
% CO ₂ :	0.24	Stack Mole Wt	28.64

Moisture Data

ACTUAL METER VOLUME:	222.79		
AVG. METER TEMP (°F):	113.00	Volstd (dscf)	205.759
AVG ORIFICE ΔH:	2.53		
METER "γ":	0.99		
VOL CONDENSATE(ml):	93.00	H ₂ O %	2.08
DRY BULB TEMP:			
WET BULB TEMP:		VP ("Hg)	#N/A

NOx as NO₂

CALIBRATION :	8.14
PPM :	

Carbon Monoxide

CALIBRATION :	93.73
PPM :	

CALCULATED DATA

STACK GAS DATA

GAS VELOCITY (Vs):	67.09	ft/sec
STACK GAS FLOW (Qs):	755,427	acfm
	675,995	dscfm
STACK GAS TEMP :	125	° F
MOISTURE (%H ₂ O):	2.1	%

Emission Data for:

NOx

CONCENTRATION (Cs):	9.72E-07	lb/dscf
	8	ppm
EMISSION RATE (Er):	39.40	lb/hr

Emission Data for:

CO

CONCENTRATION (Cs):	6.81E-06	lb/dscf
	94	ppm
EMISSION RATE (Er):	276.13	lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: EAF Exhaust/Brandt Inlet
 DATE/TIME: 8/16/00 0900
 RUN #: 3

DATA INPUT

STATIC PRESSURE("H ₂ O):	-4.10	"Hg	29.71
BAROMETRIC("Hg):	30.01		
Cp PITOT :	0.84		
AVG. $\sqrt{\Delta P}$:	1.066		
AVG STACK TEMP °F:	184.0	°R	644.0
CIRC STACK? 1=Y,0=N:	1		
DIA OR DIM (inches):	185.50	As(ft ²)	1.88E+02
% O ₂ :	20.43	Dry Mole Wt	28.87
% CO ₂ :	0.34	Stack Mole Wt	28.67

Moisture Data

ACTUAL METER VOLUME:	206.62		
AVG. METER TEMP (°F):	93.00	Volstd (dscf)	197.711
AVG ORIFICE ΔH :	2.50		
METER "Y":	0.99		
VOL CONDENSATE(ml):	78.00	H ₂ O %	1.82
DRY BULB TEMP:			
WET BULB TEMP:		VP ("Hg)	#N/A

NO_x as NO₂

CALIBRATION : PPM : 9.11

Carbon Monoxide

CALIBRATION : PPM : 118.93

CALCULATED DATA

STACK GAS DATA

GAS VELOCITY (Vs):	66.56	ft/sec
STACK GAS FLOW (Qs):	749,516	acfm
	610,165	dscfm
STACK GAS TEMP :	184	° F
MOISTURE (%H ₂ O):	1.8	%

Emission Data for:

NO_x

CONCENTRATION (Cs):	1.09E-06	lb/dscf
	9	ppm
EMISSION RATE (Er):	39.81	lb/hr

Emission Data for:

CO

CONCENTRATION (Cs):	8.64E-06	lb/dscf
	119	ppm
EMISSION RATE (Er):	316.24	lb/hr

Comments:

CLIENT/PROJECT #:	Newport Steel
SAMPLE LOCATION:	EAF Exhaust/Brandt Inlet
DATE/TIME:	8/17/00 1309-1509
RUN #:	4

DATA INPUT

STATIC PRESSURE("H ₂ O):	-4.20	"Hg	29.70
BAROMETRIC("Hg):	30.01		
Cp PITOT :	0.84		
AVG. $\sqrt{\Delta P}$:	1.105		
AVG STACK TEMP °F:	148.0	°R	608.0
CIRC STACK? 1=Y,0=N:	1		
DIA OR DIM (inches):	185.50	As(ft ²)	1.88E+02
% O ₂ :	20.50	Dry Mole Wt	28.85
% CO ₂ :	0.20	Stack Mole Wt	28.63

Moisture Data

ACTUAL METER VOLUME:			
AVG. METER TEMP (°F):		Volstd (dscf)	0.000
AVG ORIFICE ΔH :			
METER "Y":			
VOL CONDENSATE(ml):		H ₂ O %	2.07
DRY BULB TEMP:			
WET BULB TEMP:		VP ("Hg)	#N/A
CALIBRATION :	<i>NOx as NO₂</i>		
PPM :	10.30		
CALIBRATION :	<i>Carbon Monoxide</i>		
PPM :	96.00		

CALCULATED DATA

STACK GAS DATA

GAS VELOCITY (Vs):	67.11	ft/sec
STACK GAS FLOW (Qs):	755,747	acfm
	651,504	dscfm
STACK GAS TEMP :	148	° F
MOISTURE (%H ₂ O):	2.1	%

Emission Data for:

CONCENTRATION (Cs):	<i>NOx</i>	
	1.23E-06	lb/dscf
	10	ppm
EMISSION RATE (Er):	48.05	lb/hr

Emission Data for:

CONCENTRATION (Cs):	<i>CO</i>	
	6.97E-06	lb/dscf
	96	ppm
EMISSION RATE (Er):	272.57	lb/hr

Comments:

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/15/00 0814-1300
 RUN #: 1

STATIC PRESSURE("H2O):	0	"HG	30.01
BAROMETRIC("HG):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	228.143
ACTUAL METER VOLUME:	228.143	DSCF	216.365
SQ. ROOT ΔP:	0.040		
AVG ORIFICE ΔH:	2.53		
AVG STACK TEMP °F:	144.0	°R	604.0
AVG METER TEMP °F:	98.0		
Cp PITOT :	0.84		
NOZZLE DIA(inches):	1.130	An(ft^2)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(ft^2)	5511.50
DIA OR DIM (inches):	793656.00		
% O2 :	21.00	DRY MOLE WT	28.84
% CO2 :	0.00	ST MOLE WT	28.588907
VOL CONDENSATE(ml):	109	% H2O	2.32
FILTER GAIN (mg):			
RINSE GAIN(mg):		NET WT(mg)	0
F-FACTOR(DSCF/mmBtu):			
FUEL AS REC'D(Btu/lb):			
FUEL FEED RATE(lb/hr):			

SO2 DATA:

SAMPLE VOLUME(ml):	98.5
ALIQOT VOLUME(ml):	20
TITRANT NORMALITY:	0.1
SAMPLE TITRANT (ml):	0.1
BLANK TITRANT (ml):	0.1

*****CALCULATED RESULTS*****

Stack Gas Conditions

VELOCITY (Vs):	2.41	FT/SEC
VOLUMETRIC FLOW RATE(Qs):	797007.4	ACFM
:	682628.1	DSCFM
TEMPERATURE :	144	Deg F
H2O:	2.3	%
O2:	21.0	%
CO2:	0.0	%
HEAT INPUT RATE:	#DIV/0!	mmBTU/hr
EXCESS AIR	0.00	%
ISOKINETIC SAMPLING RATE:	104.58	%

Particulate Matter Emissions

CONCENTRATION (Cs):	#N/A	gr/dscf
:	#N/A	lb/dscf
EMISSION RATE (Er):	#N/A	lb/hr
:	#N/A	lb/mmBTU
F-FACTOR EMISSIONS:	#N/A	lb/mmBTU

SO2 Emissions

CONCENTRATION (Cs):	0	ppm
:	0.00E+00	lb/DSCF
EMISSION RATE (Er):	0.00	lb/hr
:	#REF!	lb/mmBTU
COMMENTS:		

CLIENT/PROJECT #: 8/15/00 0814-1300
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/15/00 1345-1828
 RUN #: 2

STATIC PRESSURE("H2O):	0	"HG	30.01
BAROMETRIC("HG):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	222.792
ACTUAL METER VOLUME:	222.792	DSCF	205.759
SQ. ROOT AP:	0.040		
AVG ORIFICE AH:	2.53		
AVG STACK TEMP °F:	122.0	*R	582.0
AVG METER TEMP °F:	113.0		
Cp PITOT :	0.84		
NOZZLE DIA.(inches):	1.130	An(ft^2)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(ft^2)	5511.50
DIA OR DIM (inches):	793656.00		
% O2 :	21.00	DRY MOLE WT	28.84
% CO2 :	0.00	ST MOLE WT	28.614184
VOL CONDENSATE(ml):	93	% H2O	2.08
FILTER GAIN (mg):			
RINSE GAIN(mg):		NET WT(mg)	0
F-FACTOR(DSCF/mmBtu):			
FUEL AS REC'D(Btu/lb):			
FUEL FEED RATE(lb/hr):			

SO2 DATA:

SAMPLE VOLUME(ml):	95.5
ALIQUEOT VOLUME(ml):	20
TITRANT NORMALITY:	0.01
SAMPLE TITRANT (ml):	0.1
BLANK TITRANT (ml):	0.1

*****CALCULATED RESULTS*****

Stack Gas Conditions

VELOCITY (Vs):	2.36	FT/SEC
VOLUMETRIC FLOW RATE(Qs):	782012.1	ACFM
:	696762.4	DSCFM
TEMPERATURE :	122	Deg F
H2O:	2.1	%
O2:	21.0	%
CO2:	0.0	%
HEAT INPUT RATE:	#DIV/0!	mmBTU/hr
EXCESS AIR	0.00	%
ISOKINETIC SAMPLING RATE:	97.43	%

Particulate Matter Emissions

CONCENTRATION (Cs):	#N/A	gr/dscf
:	#N/A	lb/dscf
EMISSION RATE (Er):	#N/A	lb/hr
:	#N/A	lb/mmBTU
F-FACTOR EMISSIONS:	#N/A	lb/mmBTU

SO2 Emissions

CONCENTRATION (Cs):	0	ppm
:	0.00E+00	lb/DSCF
EMISSION RATE (Er):	0.00	lb/hr
:	#REF!	lb/mmBTU
COMMENTS:		

CLIENT/PROJECT #: Newport Steel
 SAMPLE LOCATION: Baghouse Exhaust
 DATE/TIME: 8/16/00 0754-1214
 RUN #: 3

STATIC PRESSURE("H2O):	0	"HG	30.01
BAROMETRIC("HG):	30.01		
SAMPLE TIME(min):	240	Vm(corr)	206.621
ACTUAL METER VOLUME:	206.621	DSCF	197.711
SQ. ROOT AP:	0.040		
AVG ORIFICE ΔH:	2.50		
AVG STACK TEMP °F:	165.0	*R	625.0
AVG METER TEMP °F:	93.0		
Cp PITOT :	0.84		
NOZZLE DIA.(inches):	1.130	An(ft^2)	6.96E-03
METER GAMMA:	0.993		
LEAK RATE(IF<0.02):			
CIRC STACK? 1=Y,0=N:	0	As(ft^2)	5511.50
DIA OR DIM (inches):	793656.00		
% O2 :	21.00	DRY MOL	28.84
% CO2 :	0.00	OLE WT	28.642373
VOL CONDENSATE(ml):	78	% H2O	1.82
FILTER GAIN (mg):			
RINSE GAIN(mg):		NET WT(mg)	0
F-FACTOR(DSCF/mmBtu):			
FUEL AS REC'D(Btu/lb):			
FUEL FEED RATE(lb/hr):			

SO2 DATA:

SAMPLE VOLUME(ml):	62
ALiquOT VOLUME(ml):	20
TITRANT NORMALITY:	0.01
SAMPLE TITRANT (ml):	0.2
BLANK TITRANT (ml):	0.1

*****CALCULATED RESULTS*****

Stack Gas Conditions

VELOCITY (Vs):	2.45	FT/SEC
VOLUMETRIC FLOW RATE(Qs):	809987.2	ACFM
:	673820.5	DSCFM
TEMPERATURE :	165	Deg F
H2O:	1.8	%
O2:	21.0	%
CO2:	0.0	%
HEAT INPUT RATE:	#DIV/0!	mBTU/hr
EXCESS AIR	#N/A	%
ISOKINETIC SAMPLING RATE:	96.81	%

Particulate Matter Emissions

CONCENTRATION (Cs):	#N/A	gr/dscf
:	#N/A	lb/dscf
EMISSION RATE (Er):	#N/A	lb/hr
:	#N/A	lb/mmBTU
F-FACTOR EMISSIONS:	#N/A	lb/mmBTU

SO2 Emissions

CONCENTRATION (Cs):	0	ppm
:	1.11E-09	lb/DSCF
EMISSION RATE (Er):	0.04	lb/hr
:	#REF!	lb/mmBTU
COMMENTS:		

CLIENT/PROJECT #: #REF!
 SAMPLE LOCATION: #REF!
 DATE/TIME: 8/16/00 1239-1500
 RUN #: 4

STATIC PRESSURE("H2O): 0 "HG 30.01
 BAROMETRIC("HG): 30.01
 SAMPLE TIME(min): 180 Vm(corr) 107.625
 ACTUAL METER VOLUME: 107.625 DSCF 101.335
 SQ. ROOT ΔP: 0.040
 AVG ORIFICE ΔH: 2.50
 AVG STACK TEMP °F: 188.0 °R 648.0
 AVG METER TEMP °F: 102.0
 Cp PITOT : 0.84
 NOZZLE DIA.(inches): 1.130 An(ft^2) 6.96E-03
 METER GAMMA: 0.993
 LEAK RATE(IF<0.02):
 CIRC STACK? 1=Y,0=N: 0 As(ft^2) 5511.50
 DIA OR DIM (inches): 793656.00
 % O2 : 21.00 DRY MOL 28.84
 % CO2 : 0.00 OLE WT 28.608403
 VOL CONDENSATE(ml): 47 % H2O 2.14
 FILTER GAIN (mg):
 RINSE GAIN(mg): NET WT(mg) 0
 F-FACTOR(DSCF/mmBtu):
 FUEL AS REC'D(Btu/lb):
 FUEL FEED RATE(lb/hr):

SO2 DATA:

SAMPLE VOLUME(ml): 65
 ALIQUOT VOLUME(ml): 20
 TITRANT NORMALITY: 0.01
 SAMPLE TITRANT (ml): 0.1
 BLANK TITRANT (ml):

*****CALCULATED RESULTS*****

Stack Gas Conditions

VELOCITY (Vs): 2.50 FT/SEC
 VOLUMETRIC FLOW RATE(Qs): 825245.9 ACFM
 : 660033.5 DSCFM
 TEMPERATURE : 188 Deg F
 H2O: 2.1 %
 O2: 21.0 %
 CO2: 0.0 %
 HEAT INPUT RATE: #DIV/0! mBTU/hr
 EXCESS AIR #N/A %
 ISOKINETIC SAMPLING RATE: 67.54 %

Particulate Matter Emissions

CONCENTRATION (Cs): #N/A gr/dscf
 : #N/A lb/dscf
 EMISSION RATE (Er): #N/A lb/hr
 : #N/A lb/mmBTU
 F-FACTOR EMISSIONS: #N/A lb/mmBTU

SO2 Emissions

CONCENTRATION (Cs): 0 ppm
 : 2.26E-09 lb/DSCF
 EMISSION RATE (Er): 0.09 lb/hr
 : #REF! lb/mmBTU
 COMMENTS:

APPENDIX B

Analytical Data

PROJECT ANALYTICAL SHEET FOR PARTICULATE MATTER

PROJECT NAME:

Newport Steel

PROJECT DATE:

8/14/00

PROJECT MANAGER:

David Wetmore

NUMBER OF SITES:

1

[illegible]

ANALYZED BY:

REVIEWED BY:



TEST REPORT
Page 1 of 2
9/6/00

Submitted To:

Pete Hilty
FBT Testing & Environmental Services
7419 Kingsgate Way, Suite D
West Chester, OH
45069

Reference Data:

SO₂

Sample Location: Newport Steel 591
Sample Type: Liquid
Client Sample No.: 591-6 through 591-10
PO #: 00-055
Method Reference: EPA Method 6
Sample Set ID#: 00-W-4623
DATACHEM Lab No.: 00-27029 through 00-27033
Analysis Date: 9/6/00

The samples were analyzed in accordance with EPA method 6.

The results are provided in the enclosed data table.

Results relate only to the items tested.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Rob Nieman
Analyst

Reviewer

CINCINNATI OFFICE
4388 GLENDALE-MILFORD ROAD
CINCINNATI, OHIO 45242-3706
513 733-5335, FAX 513 733-5347

WEST COAST OFFICE
11 SANTA YREMA COURT
NOVATO, CALIFORNIA 94945
800 200-0071, FAX 415 893 9469

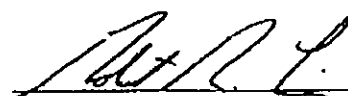
TEST REPORT
Page 2 of 2
00-W-4623

SO₂ Results

Client #	DCL #	Sample Vol. (mL)	Aliquot Vol. (mL)	Titrant Normality	Sample Titrant (mL)
591-6	00-27029	98.5	20	0.0100	0.1
591-7	00-27030	95.5	20	0.0100	0.1
591-8	00-27031	62.	20	0.0100	0.2
591-9	00-27032	65.	20	0.0100	0.1
591-10	00-27033	81.	20	0.0100	0.1

Note: Sample titrant used for prep blank = 0.1 mL.

Rob Nieman
Analyst



Reviewer

00-WW-4623

ANALYTICAL REQUEST & CHAIN OF CUSTODY

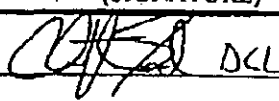
FBT Testing & Environmental Services 7419 Kingsgate Way, Suite D West Chester, Ohio 45069 (513) 755-1717 Fax: (513) 755-1770	LABORATORY Datachem Laboratories 4388 Glendale-Milford Road Cincinnati, Ohio 45242-3706
--	---

DATE SHIPPED August 22, 2000	# OF SAMPLES 10 (14)	SAMPLE TYPE Mixed	PROJECT NAME & NUMBER Newport Steel 591
FOR 00-055	CONTACT PERSON Pete Hilty		

COMMENTS/SPECIAL INSTRUCTIONS:	PRIORITY			SAMPLE RETURN	
	NORMAL XXX	RUSH	EMERG RUSH	YES	NO XX

SAMPLE #	SAMPLE DATE	CONTAINER DESCRIPTION	ANALYSES REQUESTED
591-1A/B/C though 591-5A/C	8/15-17/00	Mixed	00-27024-27028 Lead by USEPA Method 12
591-6, 7, 8, 9, 10	8/15-17/00	250 ml HDPE	00-27029-33 SO ₂ by USEPA Method 6

CHAIN OF CUSTODY REQUEST

SAMPLES DELIVERED BY: U.S. MAIL ___ FEDEX/UPS ___ COURIER <u>X</u> OTHER ___			
DATE	PURPOSE FOR CUSTODY CHANGE	RELINQUISHED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)
August 22, 2000	Analysis		 DCL

FBT



TEST REPORT
Page 1 of 2
9/15/00

Submitted To: Pete Hilty
FBT Testing & Environmental Services
7419 Kingsgate Way, Suite D
West Chester, OH 45069

Reference Data:	Lead
Client Sample No.:	591-1A/B/C through 591-5A/B/C
P.O. No.:	00-055
Sample Location:	Newport Steel 591
Sample Type:	Filter / Impinger / Rinse
Method Reference:	EPA Method 12
DCL Set ID No.:	00-S-4623
DCL Sample ID No.:	00-27024 through 00-27028
Sample Receipt Date:	8/23/2000
Preparation Date:	09/08/00
Analysis Date:	09/15/00

The samples were prepared and analyzed in accordance with EPA method 12 using a Perkin Elmer 3000XL (ICP) purged spectrometer.

Results relate only to the items tested.

The results are in the enclosed data table.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Chris Baugues
Analyst

Reviewer

CINCINNATI OFFICE
4388 GLENDALE-MALFORD ROAD
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00-S-4623

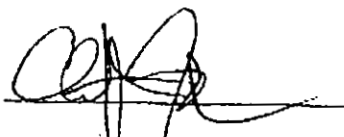
Lead Results
µg/Sample

Client #	DCL #	Pb
591-1A/B/C	00-27024	49.
591-2A/B/C	00-27025	65.
591-3A/B/C	00-27026	38.
591-4A/B/C	00-27027	13.
591-5A/B/C	00-27028	ND
	Prep Blank	ND
% Recovery	LCS	91.
Reporting Limit		5.

ND indicates the value is below the Reporting Limit.



Chris Baugues
Analyst



Reviewer

00. WW - 4623

ANALYTICAL REQUEST & CHAIN OF CUSTODY

FBT Testing & Environmental Services

7419 Kingsgate Way, Suite D

West Chester, Ohio 45069

(513) 755-1717 Fax: (513) 755-1770

LABORATORY

Datachem Laboratories

4388 Glendale-Milford Road

Cincinnati, Ohio 45242-3706

DATE SHIPPED August 22, 2000	# OF SAMPLES 10 (14)	SAMPLE TYPE Mixed	PROJECT NAME & NUMBER Newport Steel 591
PO# 00-055	CONTACT PERSON Pete Hilly		

COMMENTS/SPECIAL INSTRUCTIONS:**PRIORITY****SAMPLE
RETURN**NORMAL
XXX

RUSH

EMERG
RUSH

YES

NO

XX

SAMPLE #	SAMPLE DATE	CONTAINER DESCRIPTION	ANALYSES REQUESTED
591-1A/B/C though 591-5A/C	8/15-17/00	Mixed	00-27024-27028 Lead by USEPA Method 12
591-6, 7, 8, 9, 10	8/15-17/00	250 ml HDPE	00-27029-33 SO ₂ by USEPA Method 6

CHAIN OF CUSTODY REQUESTSAMPLES DELIVERED BY: U.S. MAIL ___ FEDEX/UPS ___ COURIER X OTHER ___

DATE	PURPOSE FOR CUSTODY CHANGE	RELINQUISHED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)
August 22, 2000	Analysis	<i>Chris [Signature]</i>	<i>[Signature] DCU</i>

FBT

APPENDIX F
CALIBRATION DATA

QUALITY ASSURANCE/QUALITY CONTROL

This section describes the specific QA/QC procedures employed by FBT in performing this series of tests. The goal of the QA/QC activities for this project are intended to ensure, to the highest degree possible, the accuracy of the data collected. The procedures contained in the "Quality Assurance Handbook for Air Pollution Measurement Systems," "Volume III, Stationary Source Specific Methods," EPA-600/77-027B serve as the basis for performance for all testing and related work activities.

CALIBRATION OF APPARATUS:

The preparation and calibration of source sampling equipment is essential in maintaining data quality. Brief descriptions of the calibration procedures used by FBT follow:

Barometers

FBT uses aneroid barometers which are calibrated against a National Weather Service-Type mercurial barometer.

Temperature Sensors

Bimetallic dial thermometers and Type "K" thermocouples are calibrated using the procedure described in Section 3.4.2 of the Quality Assurance Handbook. Each temperature sensor is calibrated over the expected range of use against an ASTM 3C or 3F thermometer.

Pitot Tubes

FBT uses Type "S" pitot tubes which are constructed according to EPA Method 2 specifications. Pitot tubes meeting these criteria are assigned a baseline coefficient of 0.84 and need not be calibrated.

Differential Pressure Gauges

FBT uses Dwyer inclined/vertical manometers to measure differential pressures. These include velocity pressure, static pressure, and meter orifice pressure. Manometers are selected with sufficient sensitivity to accurately measure pressures over the entire range of expected values. Manometers are primary standards and require no calibration.

Dry Gas Meters and Orifices

Dry gas meters and orifices are calibrated in accordance with Section 3.3.2 of the Quality Assurance Handbook. This procedure involves direct comparison of the dry gas meter to a reference wet test meter. The reference wet test meter is routinely calibrated against a bell prover. Before its initial use in the field, the metering system is calibrated over the entire range of operation. After each field use, the metering system is calibrated at a single intermediate setting based on the previous field test. Acceptable tolerances for the initial and final dry gas meter factors and orifice calibration factors are ± 0.02 and ± 0.20 from average, respectively.

QA/QC (cont.)

THE ON-SITE QA/QC ACTIVITIES INCLUDED:

Measurement Sites

Prior to sampling, all measurements were checked dimensionally to determine measurement site locations, location of test ports, and stack inside dimensions. Inside dimensions were checked through all available test ports to ensure uniformity of the stack cross-sectional area.

Velocity Measurements

All velocity measurement apparatus was assembled, leveled, zeroed, and leak checked prior to each test run. The static pressure was determined at a single point near the center of the stack.

Flue Gas Component Sampling

During sampling, Fyrite combustion gas analyzers were used to determine percent concentrations of carbon dioxide and oxygen.

Moisture

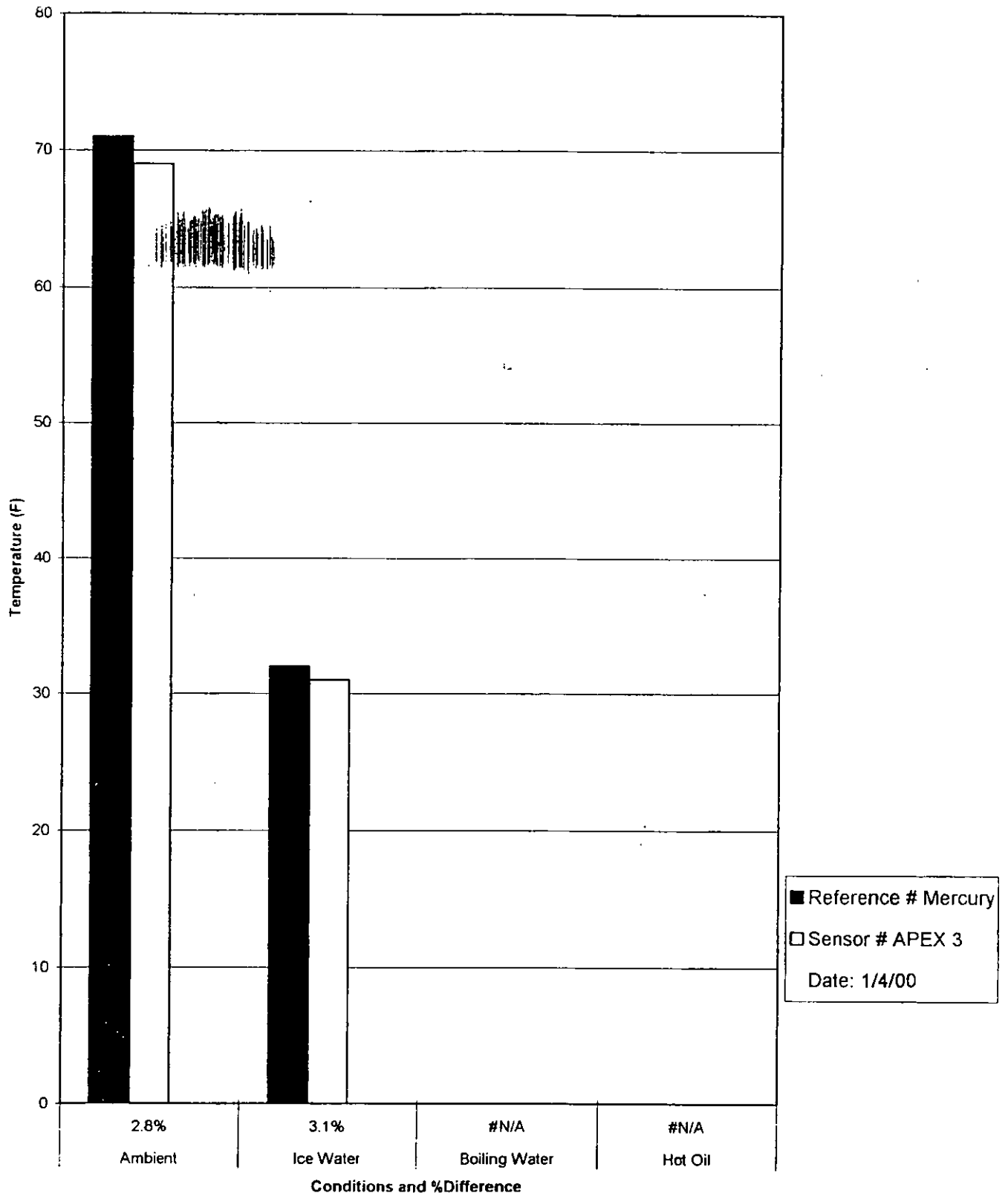
Stack gas moisture was determined simultaneously with particulate matter. During sampling, the exit gas of the last impinger was maintained below 68°F to ensure complete condensation of the stack gas water vapor. The total moisture was determined gravimetrically.

Sample Trains

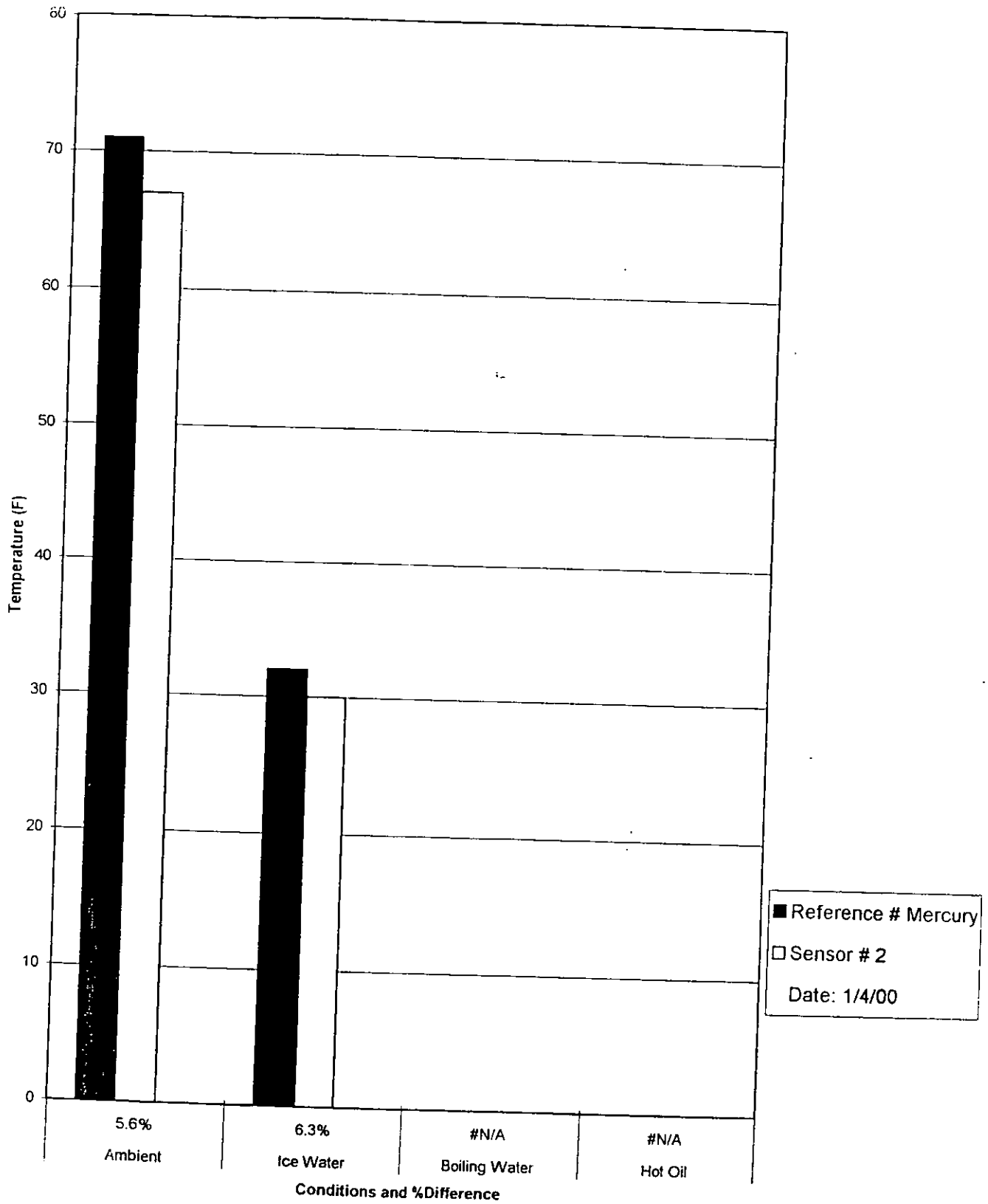
The sample trains were assembled, equilibrated to required temperatures and leak checked prior to testing. The nozzle size was determined in the field by making triplicate measurements along three different diameters using a dial caliper. The three measurements must vary no more than 0.004 inches between the high and low numbers.

At the conclusion of each test run, the sample trains were leak checked at the highest vacuum attained during the test run. Acceptable leakage rates are 0.02 cfm or 4 percent of the average sampling rate (whichever is less).

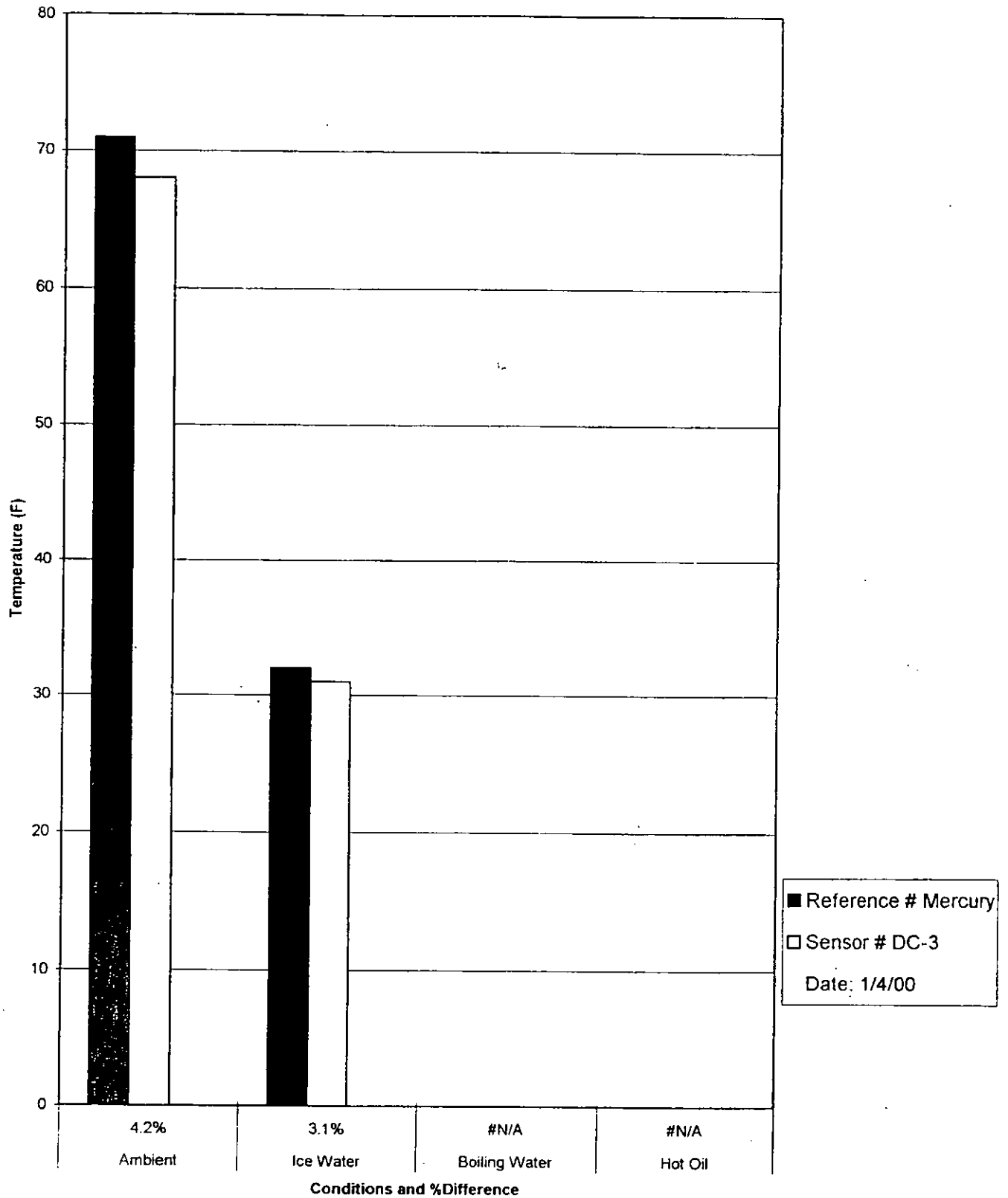
TEMPERATURE SENSOR CALIBRATION



TEMPERATURE SENSOR CALIBRATION



TEMPERATURE SENSOR CALIBRATION



FBT Testing & Environmental Services

METHOD 5 DRY GAS METER CALIBRATION USING CRITICAL ORIFICES

- 1) Select three critical orifices to calibrate the dry gas meter which bracket the expected operating range.
- 2) Record barometric pressure before and after calibration procedure.
- 3) Run at tested vacuum (from Orifice Calibration Report), for a period of time necessary to achieve a minimum total volume of 5 cubic feet.

CLIENT: Newport Steel

DATE: 8/31/00

CRITICAL ORIFICE SET SERIAL #: 1355

METER BOX #: Apex 3

PERSON: Hilmy

INITIAL Y: 0.9931

INITIAL ΔH_g: 1.723

BAROMETRIC PRESSURE (in Hg): 29.6

ORIFICE #	RUN #	K' (AVG)	TESTED VACUUM (in Hg)	DGM READINGS (FT ³)			TEMPERATURES °F					ELAPSED TIME (MIN)	DGM ΔH (in H ₂ O)	(1) V _m (STD)			(2) V _u (STD)		(3) Y	VARIATION (%)	ΔH _g
				INITIAL	FINAL	NET (V _m)	AMBIENT	DGM INLET INITIAL	DGM INLET FINAL	DGM OUTLET INITIAL	DGM OUTLET FINAL			DGM AVG	DGM TIME (MIN)	DGM ΔH (in H ₂ O)	(1) V _m (STD)	(2) V _u (STD)			
24	1	0.6396	20	933.450	941.563	8.113	68	70	70	72	72	71	9.50	2.2	8.0260	7.8295	0.9755				1.8024
24	2	0.6396	20	941.563	949.555	7.992	68	70	70	72	72	71	9.50	2.2	7.9063	7.8295	0.9903				1.8024
AVG = 0.9828																					
30	1	0.829	20	949.555	959.231	9.676	69	72	74	72	74	73	9.00	3.7	9.5716	9.6048	1.0035				1.8077
30	2	0.829	20	959.231	969.904	9.673	69	72	74	72	74	73	9.00	3.7	9.5686	9.6048	1.0038				1.8077
AVG = 1.0036																					
1	1					0						0			0.0	0.0		#DN/01			#DN/01
2	2					0						0			0.0	0.0		#DN/01			#DN/01
AVG = 0.9933																					

THE CRITICAL ORIFICES AS CALIBRATION STANDARDS:

The following equations are used to calculate the standard volumes of air passed through the DGM, V_m (std), and the critical factor, V_u (std), and the DGM calibration factor, Y. These equations are automatically calculated in the spreadsheet above.

AVERAGE DRY GAS METER CALIBRATION FACTOR, Y = 0.9933

PRE-TEST/POST-TEST MUST BE ≤ 5.00% = 0.02%

AVERAGE ΔH_g = 0.9933

$$\Delta H_g = \frac{0.75 \theta}{V_u(\text{std})} \cdot \frac{\Delta H}{V_m(\text{std})}$$

- 1) V_m (std) = $K' \cdot V_m \cdot \frac{P_{\text{bar}} \cdot \theta}{T_m}$ = Net volume of gas sample passed through DGM, corrected to standard conditions
- 2) V_u (std) = $K' \cdot \sqrt{\frac{P_{\text{bar}} \cdot \theta}{T_m}}$ = Volume of gas sample passed through the critical orifice, corrected to standard conditions
- 3) Y = $\frac{V_u(\text{std})}{V_m(\text{std})}$ = DGM calibration factor

T_{amb} = Absolute ambient temperature (°R - English, °K - Metric)

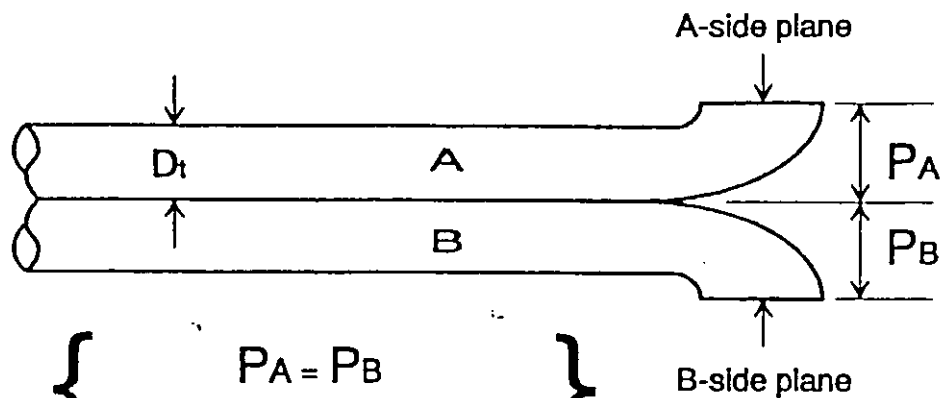
K' = Average K' factor from Critical Orifice Calibration

FBT

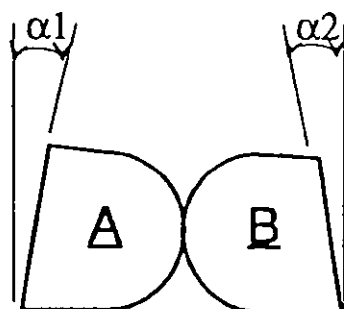
ORIFICE CALCULATIONS

S-type Pitot Tube Calibration

Identification: 1
 Performed by: BW
 Date: 1/4/00

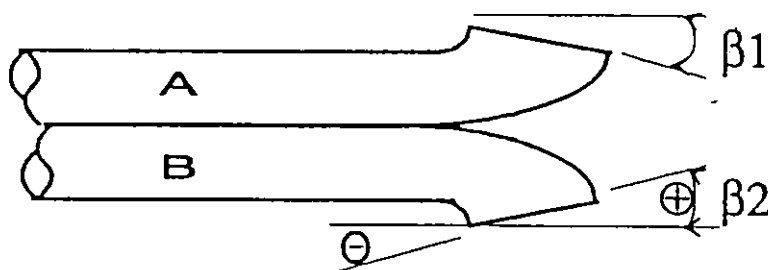


$$\left\{ \begin{array}{l} P_A = P_B \\ 1.05D_t \leq P \leq 1.50D_t \end{array} \right\}$$



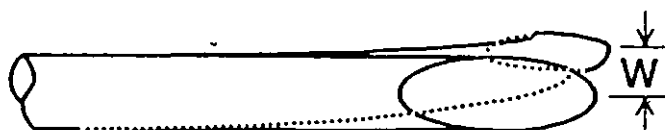
$$\alpha_1 = \underline{0}^\circ$$

$$\alpha_2 = \underline{1}^\circ$$



$$\beta_1 = \underline{1}^\circ$$

$$\beta_2 = \underline{0}^\circ$$



$$W = \underline{0} \text{ in.}$$

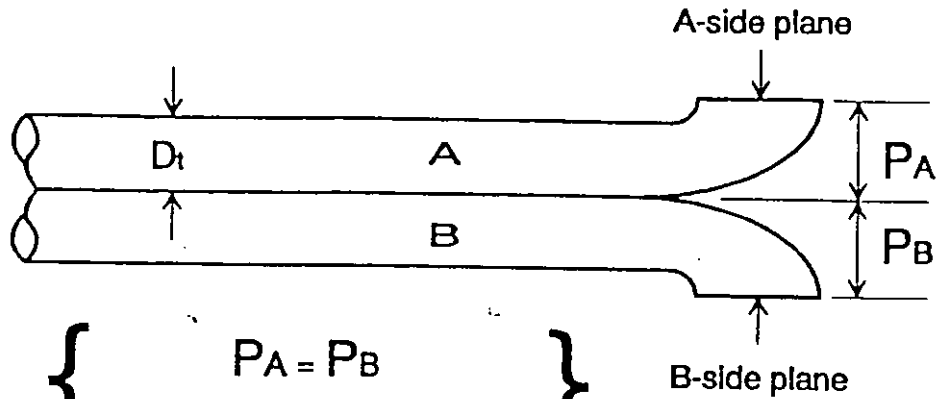
FBT

S-type Pitot Tube Calibration

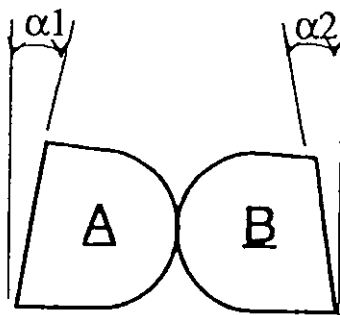
Identification: 3

Performed by: EW

Date: 1/4/00

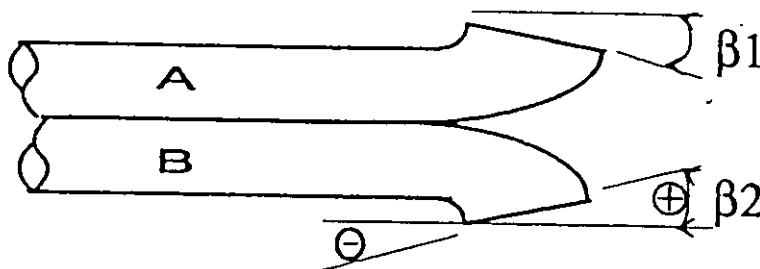


$$\left\{ \begin{array}{l} P_A = P_B \\ 1.05D_t \leq P \leq 1.50D_t \end{array} \right\}$$



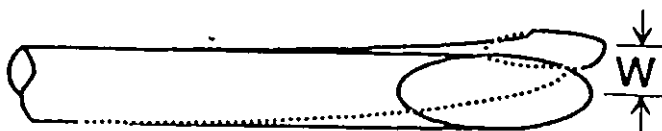
$$\alpha_1 = \underline{1}^\circ$$

$$\alpha_2 = \underline{0}^\circ$$



$$\beta_1 = \underline{0}^\circ$$

$$\beta_2 = \underline{0}^\circ$$



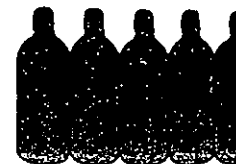
$$W = \underline{6} \text{ in.}$$

FBT



SPECTRA GASES INC.

3434 Route 22 West • Branchburg, NJ 08876 USA Tel.: (908) 252-9300 • (800) 932-0624 • Fax: (908) 252-0811
Shipped From: 80 Industrial Drive • Alpha, NJ 08865



CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE #: G1

CUSTOMER: FBT Testing & Environmental Services
SGI ORDER #: 152093
ITEM#: 3
P.O.#: 00-019

CYLINDER #: CC106973
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 660

CERTIFICATION DATE: 3/22/2000

EXPIRATION DATE: 3/22/2002

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	3/14/2000	89.13 ppm	89.3 ppm	+/- 1%
	3/22/2000	89.51 ppm		
NOx			89.5 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	NTRM-81684	CC79981	98.6 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	Nicolet 560	ADL9600109	FTIR	3/15/2000

THIS STANDARD WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST:

FP

FRED PIKULA

DATE: 3/22/2000



SPECTRA GASES INC.

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Shipped From: 80 Industrial Drive • Alpha, NJ 08865



CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE #: G1

CUSTOMER: FBT Testing & Environmental Services
SGI ORDER #: 142269
ITEM#: 5
P.O.#: 99-029

CYLINDER #: CC88515
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 660

CERTIFICATION DATE: 5/12/99
EXPIRATION DATE: 5/12/2001

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	5/4/99	92.03 ppm	91.5 ppm	+/- 1%
NOx	5/12/99	91.03 ppm		
			91.6 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	GMIS-1	CC79984	98.6 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	Teco 10	10AR-34979-249	Cheml	5/12/99

THIS STANDARD WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: MP
FRED PIKULA

DATE: 5/12/99



SPECTRA GASES INC.

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Shipped From: 80 Industrial Drive • Alpha, NJ 08865



CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE PROCEDURE # : G1

CUSTOMER: FBT Testing & Environmental Services
SGI ORDER # : 139857
ITEM# : 4
P.O.# : 99-005

CYLINDER # : CC106772
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 660

CERTIFICATION DATE: 2/22/99
EXPIRATION DATE: 2/22/2001

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	2/12/99	200.3 ppm	200 ppm	+/- 1%
NOx	2/22/99	199.8 ppm	200 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	NTRM-81685	LL2994	245.2 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	Teco 10	10AR-34979-249	Cheml	2/5/99

THIS STANDARD WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: FRED PIKULA

DATE: 2/22/99

**SPECTRA GASES**

3434 Route 22 West • Branchburg, NJ 08876 USA Tel: (908) 252-9300 • (800) 932-0624 • Fax: (908) 252-0811

SHIPPED FROM: 80 INDUSTRIAL DRIVE ALPHA, NJ. 08865 TEL: (908) 454-7455

SHIPPED TO: FBT Testing & Environmental Services
7419 Kingsgate Way
West Chester, OH 45069

**CERTIFICATE
OF
ANALYSIS**

SGI ORDER # :	152093	CYLINDER # :	CC113935
ITEM# :	1	CYLINDER PRES :	2000 psig
CERTIFICATION DATE :	3/22/2000	CYLINDER VALVE :	CGA 350
P.O.# :	00-019		
BLEND TYPE :	CERTIFIED		

ANALYTICAL ACCURACY: + / - 2%

COMPONENT	REQUESTED GAS CONC	ANALYSIS
Carbon Monoxide	100 ppm	102 ppm
Carbon Dioxide	15.0 %	15.0 %
Nitrogen	Balance	Balance

ANALYST: MP.

Fred Pikula

DATE: 3/22/2000

USA • United Kingdom • Germany • Japan

ISO 9001

**SPECTRA GASES**

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SHIPPED FROM: 80 INDUSTRIAL DRIVE ALPHA, NJ. 08865 TEL: (908) 454-7455

SHIPPED TO: FBT Testing & Environmental Services
7419 Kingsgate Way
West Chester, OH 45069

**CERTIFICATE
OF
ANALYSIS**

SGI ORDER # :	145753	CYLINDER # :	CC90794
ITEM# :	1	CYLINDER PRES:	2000 psig
CERTIFICATION DATE:	8/25/99	CYLINDER VALVE:	CGA 350
P.O.# :	99-057		
BLEND TYPE:	CERTIFIED		

ANALYTICAL ACCURACY: + / - 2%

<u>COMPONENT</u>	<u>REQUESTED GAS CONC</u>	<u>ANALYSIS</u>
Carbon Monoxide	50.0 ppm	51.0 ppm
Carbon Dioxide	15.0 %	15.1 %
Nitrogen	Balance	Balance

ANALYST: 
Fred Pikula

DATE: 8/25/99

APPENDIX ^G~~B~~

RATA Data

~~DATA~~ FOR ~~CO~~ NO_x and CO

Reference Method and CEM DATA
COMPARISON

CLIENT: Newport Steel
 SAMPLE LOCATION: EAF-Brandt Baghouse

RUN #:	1	2	3	4	5	6
Reference Method Data						
DATE:	08/15/00	08/15/00	08/16/00	08/16/00		
TIME:	0814-1300	1345-1659	0754-1214	1309-1509		
CO, ppmv	55.28	93.73	118.93	96.00	5.48	5.15
ppm NOx :	8.86	8.14	9.11	10.30	8.14	4.07
lb/MMbtu						
CEMS Data						
CO, ppmv	59.51	114.90	142.77	85.87	5.35	4.99
ppm NOx :	10.67	9.83	6.85	11.06	9.50	6.90
lb/MMbtu	53.000	95.000	114.000	53.000	95.000	114.000
RUN #:	7	8	9	10	11	12
Reference Method Data						
DATE:						
TIME:						
CO, ppmv	59.06	5.14	5.14	4.99	4.87	5.02
ppm NOx :	10.67	8.14	4.07	8.86	8.14	4.07
lb/MMbtu	55.280	93.730	118.930	55.280	93.730	118.930
CEMS Data						
% O ₂ :	5.08	5.05	5.05	4.92	4.86	5.07
ppm NOx :	9.80	9.50	6.90	9.80	9.50	6.90
lb/MMbtu						

Plant: Newport Steel
 Location: Baghouse Inlet
 Operator: P. Hilty
 Date/Time: 8/15/00 14:02:15

Final System Bias Check for Run 1

Analyte	O2	SO2	NOx	co2	CO
Units	%	ppm	ppm	%	ppm
Range	25	1000	100	20	200
Zero Gas Value	0	0	0	0	0
Calibration Zero	0.022	0.3	0.81	-0.267	-5.5
Final Bias Zero Avg	-0.086	-1.9	1.77	-0.301	-10
Zero Bias%	-0.3	-0.2	1.8	-1.5	-5.0
Zero Drift%	0.2	0.2	-1.1	0.4	4.0
Span Gas Value	20.9	400	50.5	8	50
Calibration Span	20.896	393.3	50.15	8.016	46.1
Final Bias Span Avg	20.824	399	51.43	7.992	39.5
Span Bias%	-0.3	-0.1	0.9	0.0	-5
Span Drift%	0.3	-0.7	-1.5	0.1	3.8
Initial Bias Zero	-0.032	0.2	0.69	-0.219	-2.1
Initial Bias Span	20.903	392.4	49.91	8.014	47.1
Run Avg	20.54	-1.43	9.9	0.07	48.51
Co	-0.059	-0.850	1.23	-0.26	-6.05
Cm	20.864	395.700	50.670	8.003	43.300
Correct Avg	20.58	-0.59	8.86	0.32	55.28

Plant: Newport Steel
 Location: Baghouse Inlet
 Operator: P. Hilty
 Date/Time: 8/15/00

Final System Bias Check for Run 2

Analyte	O2	SO2	NOx	co2	CO
Units	%	ppm	ppm	%	ppm
Range	25	1000	100	20	200
Zero Gas Value	0	0	0	0	0
Calibration Zero	0.022	0.3	0.81	-0.267	-5.5
Final Bias Zero Avg	-0.104	-3.3	2.67	-0.101	-4.2
Zero Bias%	-0.4	-0.3	2.7	-0.5	-2.1
Zero Drift%	0.1	0.1	-0.9	-1.0	2.1
Span Gas Value	20.9	400	50.5	8	50
Calibration Span	20.896	393.3	50.15	8.016	46.1
Final Bias Span Avg	20.769	390.3	50.22	7.918	46.1
Span Bias%	-0.5	-1.0	-0.3	-0.4	-2
Span Drift%	0.2	0.9	1.2	0.4	0.4
Initial Bias Zero	-0.086	-1.9	1.77	-0.301	0
Initial Bias Span	20.824	399	51.43	7.992	47
Run Avg	20.58		10.05	0.24	89.1
Co	-0.095	-2.600	2.22	-0.201	-2.1
Cm	20.797	394.650	50.825	7.955	46.550
Correct Avg	20.68	2.62	8.14	0.43	93.73

Plant: Newport Steel
 Location: Baghouse Inlet
 Operator: P. Hilty
 Date/Time: 8/16/00

Final System Bias Check for Run 3

Analyte	O2	SO2	NOx	co2	CO
Units	%	ppm	ppm	%	ppm
Range	25	1000	100	20	200
Zero Gas Value	0	0	0	0	0
Calibration Zero	0.022	0.3	0.81	-0.267	-5.5
Final Bias Zero Avg	-0.254		-0.79	0.016	2.2
Zero Bias%	-1.0	0.0	-0.8	0.1	1.1
Zero Drift%	0.6	-0.3	3.5	-0.6	-3.2
Span Gas Value	20.9	400	50.5	8	50
Calibration Span	20.896	393.3	50.15	8.016	46.1
Final Bias Span Avg	20.864		49.85	7.971	52.8
Span Bias%	-0.1	-40.0	-0.6	-0.1	1
Span Drift%	-0.4	39.0	0.4	-0.3	-3.4
Initial Bias Zero	-0.104	-3.3	2.67	-0.101	-4.2
Initial Bias Span	20.769	390.3	50.22	7.918	46.1
Run Avg	20.343		9.8	0.3	119
Co	-0.179	-1.650	0.94	-0.0425	-1
Cm	20.817	195.150	50.035	7.945	49.450
Correct Avg	20.43	3.35	9.11	0.34	118.93

Plant: Newport Steel
 Location: Baghouse Inlet
 Operator: P. Hilty
 Date/Time: 8/16/00 1309-1509

Final System Bias Check for Run 4

Analyte	O2	SO2	NOx	co2	CO
Units	%	ppm	ppm	%	ppm
Range	25	1000	100	20	200
Zero Gas Value	0	0	0	0	0
Calibration Zero	0.022	0.3	0.81	-0.267	-5.5
Final Bias Zero Avg	-0.256		-0.16	0.077	0
Zero Bias%	-1.0	0.0	-0.2	0.4	0.0
Zero Drift%	0.0	0.0	-0.6	-0.3	1.1
Span Gas Value	20.9	400	50.5	8	50
Calibration Span	20.896	393.3	50.15	8.016	46.1
Final Bias Span Avg	20.79		51.04	8	52.2
Span Bias%	-0.4	-40.0	0.5	0.0	1
Span Drift%	0.3	0.0	-1.2	-0.1	0.3
Initial Bias Zero	-0.254	0	-0.79	0.016	2.2
Initial Bias Span	20.864	0	49.85	7.971	52.8
Run Avg	20.58		9.91	0.42	99.79
Co	-0.255	0.000	-0.475	0.0465	1.1
Cm	20.827	0.000	50.445	7.986	52.500
Correct Avg	20.66	#DIV/0!	10.30	0.38	96.00

CEMS CO Data	RUN 1	CEMS Nox Data	Run 1
8/15/00 8:14	10.5	8/15/00 8:14	27.66
8/15/00 8:15	8.5	8/15/00 8:15	25.32
8/15/00 8:16	13	8/15/00 8:16	22.29
8/15/00 8:17	11.2	8/15/00 8:17	16.83
8/15/00 8:18	10.3	8/15/00 8:18	14.68
8/15/00 8:19	25.6	8/15/00 8:19	15.17
8/15/00 8:20	12.4	8/15/00 8:20	13.84
8/15/00 8:21	8.8	8/15/00 8:21	13.11
8/15/00 8:22	7.3	8/15/00 8:22	12.59
8/15/00 8:23	8.3	8/15/00 8:23	11.06
8/15/00 8:24	9.3	8/15/00 8:24	8.75
8/15/00 8:25	10.8	8/15/00 8:25	3.21
8/15/00 8:26	11.3	8/15/00 8:26	1.99
8/15/00 8:27	10.4	8/15/00 8:27	1.92
8/15/00 8:28	10.3	8/15/00 8:28	1.8
8/15/00 8:29	10.3	8/15/00 8:29	1.88
8/15/00 8:30	10.3	8/15/00 8:30	1.68
8/15/00 8:31	27.1	8/15/00 8:31	1.93
8/15/00 8:32	38.1	8/15/00 8:32	5.25
8/15/00 8:33	33.4	8/15/00 8:33	15.71
8/15/00 8:34	18.8	8/15/00 8:34	6.74
8/15/00 8:35	14.3	8/15/00 8:35	7.07
8/15/00 8:36	17.1	8/15/00 8:36	6.93
8/15/00 8:37	32.5	8/15/00 8:37	6.94
8/15/00 8:38	57.7	8/15/00 8:38	6.28
8/15/00 8:39	91.1	8/15/00 8:39	5.75
8/15/00 8:40	203.8	8/15/00 8:40	5.15
8/15/00 8:41	221.6	8/15/00 8:41	3.76
8/15/00 8:42	299.7	8/15/00 8:42	2.77
8/15/00 8:43	318.4	8/15/00 8:43	2.6
8/15/00 8:44	186.1	8/15/00 8:44	2.75
8/15/00 8:45	116.3	8/15/00 8:45	5.18
8/15/00 8:46	106	8/15/00 8:46	5.26
8/15/00 8:47	105.5	8/15/00 8:47	2.79
8/15/00 8:48	77.4	8/15/00 8:48	10.08
8/15/00 8:49	28.5	8/15/00 8:49	15.63
8/15/00 8:50	28.1	8/15/00 8:50	7.81
8/15/00 8:51	24.1	8/15/00 8:51	6.91
8/15/00 8:52	28.2	8/15/00 8:52	7.59
8/15/00 8:53	31.7	8/15/00 8:53	7.99
8/15/00 8:54	36.8	8/15/00 8:54	6.96
8/15/00 8:55	68.8	8/15/00 8:55	7.06
8/15/00 8:56	170.2	8/15/00 8:56	6.15
8/15/00 8:57	141	8/15/00 8:57	5.49
8/15/00 8:58	197.8	8/15/00 8:58	3.86
8/15/00 8:59	176.3	8/15/00 8:59	3.15

8/15/00 9:00	193.2
8/15/00 9:01	157
8/15/00 9:02	134.7
8/15/00 9:03	126.7
8/15/00 9:04	114.8
8/15/00 9:05	96.4
8/15/00 9:06	89.4
8/15/00 9:07	94
8/15/00 9:08	76
8/15/00 9:09	68.3
8/15/00 9:10	21.7
8/15/00 9:11	9.4
8/15/00 9:12	17.7
8/15/00 9:13	36.4
8/15/00 9:14	24.3
8/15/00 9:15	24.1
8/15/00 9:16	22.9
8/15/00 9:17	23.7
8/15/00 9:18	36
8/15/00 9:19	24.5
8/15/00 9:20	44.6
8/15/00 9:21	18.5
8/15/00 9:22	6.8
8/15/00 9:23	6.9
8/15/00 9:24	8.5
8/15/00 9:25	12.4
8/15/00 9:26	7.4
8/15/00 9:27	6.3
8/15/00 9:28	6.3
8/15/00 9:29	5.7
8/15/00 9:30	5.3
8/15/00 9:31	5.3
8/15/00 9:32	5.3
8/15/00 9:33	5.3
8/15/00 9:34	5.3
8/15/00 9:35	5.3
8/15/00 9:36	5.3
8/15/00 9:37	5.3
8/15/00 9:38	5.3
8/15/00 9:39	5.4
8/15/00 9:40	12
8/15/00 9:41	15.5
8/15/00 9:42	7.6
8/15/00 9:43	6.8
8/15/00 9:44	18.7
8/15/00 9:45	9.6
8/15/00 9:46	6.4

8/15/00 9:00	2.75
8/15/00 9:01	1.96
8/15/00 9:02	2.34
8/15/00 9:03	1.65
8/15/00 9:04	1.68
8/15/00 9:05	1.77
8/15/00 9:06	2.3
8/15/00 9:07	5.32
8/15/00 9:08	8.11
8/15/00 9:09	8.4
8/15/00 9:10	16.02
8/15/00 9:11	22.27
8/15/00 9:12	20.39
8/15/00 9:13	11.32
8/15/00 9:14	8.9
8/15/00 9:15	11.54
8/15/00 9:16	10.81
8/15/00 9:17	9.41
8/15/00 9:18	6.79
8/15/00 9:19	5.93
8/15/00 9:20	5.42
8/15/00 9:21	9.68
8/15/00 9:22	17.56
8/15/00 9:23	14.1
8/15/00 9:24	18.68
8/15/00 9:25	18.32
8/15/00 9:26	18.17
8/15/00 9:27	16.71
8/15/00 9:28	14.32
8/15/00 9:29	12.71
8/15/00 9:30	10.09
8/15/00 9:31	10
8/15/00 9:32	9.76
8/15/00 9:33	11.81
8/15/00 9:34	12.64
8/15/00 9:35	8.65
8/15/00 9:36	8.49
8/15/00 9:37	10.04
8/15/00 9:38	9.18
8/15/00 9:39	15.12
8/15/00 9:40	30.03
8/15/00 9:41	12.42
8/15/00 9:42	14.76
8/15/00 9:43	30.28
8/15/00 9:44	24.12
8/15/00 9:45	13.45
8/15/00 9:46	23.66

8/15/00 9:47	8.1	8/15/00 9:47	15.88
8/15/00 9:48	16.6	8/15/00 9:48	11.66
8/15/00 9:49	17.2	8/15/00 9:49	12.11
8/15/00 9:50	8.5	8/15/00 9:50	19.29
8/15/00 9:51	8.1	8/15/00 9:51	17.05
8/15/00 9:52	9	8/15/00 9:52	15.82
8/15/00 9:53	10	8/15/00 9:53	14.67
8/15/00 9:54	9.4	8/15/00 9:54	14.12
8/15/00 9:55	11.7	8/15/00 9:55	14.06
8/15/00 9:56	11.3	8/15/00 9:56	11.35
8/15/00 9:57	11.3	8/15/00 9:57	3.05
8/15/00 9:58	11.3	8/15/00 9:58	1.2
8/15/00 9:59	11.3	8/15/00 9:59	1.18
8/15/00 10:00	11.3	8/15/00 10:00	1.28
8/15/00 10:01	11.3	8/15/00 10:01	1.31
8/15/00 10:02	11	8/15/00 10:02	1.2
8/15/00 10:03	10.6	8/15/00 10:03	1.1
8/15/00 10:04	10.6	8/15/00 10:04	1.23
8/15/00 10:05	11.7	8/15/00 10:05	1.33
8/15/00 10:06	12.4	8/15/00 10:06	1.49
8/15/00 10:07	12.7	8/15/00 10:07	1.69
8/15/00 10:08	22.3	8/15/00 10:08	2.07
8/15/00 10:09	56.6	8/15/00 10:09	2.8
8/15/00 10:10	44	8/15/00 10:10	18.2
8/15/00 10:11	31.1	8/15/00 10:11	16.89
8/15/00 10:12	52.1	8/15/00 10:12	4.1
8/15/00 10:13	55.6	8/15/00 10:13	3.28
8/15/00 10:14	62.5	8/15/00 10:14	3.3
8/15/00 10:15	79.7	8/15/00 10:15	3.6
8/15/00 10:16	72	8/15/00 10:16	3.4
8/15/00 10:17	74.9	8/15/00 10:17	3.53
8/15/00 10:18	54.2	8/15/00 10:18	4.03
8/15/00 10:19	84.3	8/15/00 10:19	6.11
8/15/00 10:20	70.9	8/15/00 10:20	9.02
8/15/00 10:21	44.8	8/15/00 10:21	10.07
8/15/00 10:22	32.6	8/15/00 10:22	13.89
8/15/00 10:23	20.5	8/15/00 10:23	7.48
8/15/00 10:24	12.3	8/15/00 10:24	3.31
8/15/00 10:25	12.1	8/15/00 10:25	2.9
8/15/00 10:26	14.7	8/15/00 10:26	2.83
8/15/00 10:27	15.5	8/15/00 10:27	2.68
8/15/00 10:28	15.8	8/15/00 10:28	7.7
8/15/00 10:29	25.3	8/15/00 10:29	26.4
8/15/00 10:30	36.6	8/15/00 10:30	14.9
8/15/00 10:31	52.8	8/15/00 10:31	7.94
8/15/00 10:32	48.6	8/15/00 10:32	9.1
8/15/00 10:33	48.8	8/15/00 10:33	12.39

8/15/00 10:34	18.3	8/15/00 10:34	6.26
8/15/00 10:35	35.8	8/15/00 10:35	2.35
8/15/00 10:36	101.4	8/15/00 10:36	2.18
8/15/00 10:37	65.6	8/15/00 10:37	5.67
8/15/00 10:38	20.2	8/15/00 10:38	4.99
8/15/00 10:39	14	8/15/00 10:39	5.17
8/15/00 10:40	21.5	8/15/00 10:40	4.76
8/15/00 10:41	34.4	8/15/00 10:41	3.99
8/15/00 10:42	52	8/15/00 10:42	3.83
8/15/00 10:43	79.2	8/15/00 10:43	3.73
8/15/00 10:44	118.3	8/15/00 10:44	3.53
8/15/00 10:45	126.8	8/15/00 10:45	3.43
8/15/00 10:46	199.9	8/15/00 10:46	3.4
8/15/00 10:47	249	8/15/00 10:47	2.74
8/15/00 10:48	268	8/15/00 10:48	2.27
8/15/00 10:49	284	8/15/00 10:49	2.01
8/15/00 10:50	207	8/15/00 10:50	2.42
8/15/00 10:51	148.7	8/15/00 10:51	3.32
8/15/00 10:52	111.2	8/15/00 10:52	2.51
8/15/00 10:53	54.1	8/15/00 10:53	1.65
8/15/00 10:54	43.4	8/15/00 10:54	1.96
8/15/00 10:55	18.5	8/15/00 10:55	6.84
8/15/00 10:56	9.5	8/15/00 10:56	12.46
8/15/00 10:57	5.9	8/15/00 10:57	32.1
8/15/00 10:58	8.1	8/15/00 10:58	42.56
8/15/00 10:59	7.8	8/15/00 10:59	35.9
8/15/00 11:00	7.4	8/15/00 11:00	28.26
8/15/00 11:01	11.3	8/15/00 11:01	24.68
8/15/00 11:02	22	8/15/00 11:02	13.44
8/15/00 11:03	576.9	8/15/00 11:03	6.03
8/15/00 11:04	223	8/15/00 11:04	3.78
8/15/00 11:05	147.3	8/15/00 11:05	4.25
8/15/00 11:06	118.2	8/15/00 11:06	11.05
8/15/00 11:07	58.6	8/15/00 11:07	22.38
8/15/00 11:08	52.3	8/15/00 11:08	11.09
8/15/00 11:09	21.1	8/15/00 11:09	17.51
8/15/00 11:10	11.4	8/15/00 11:10	21.23
8/15/00 11:11	9.3	8/15/00 11:11	19.64
8/15/00 11:12	11.1	8/15/00 11:12	22.51
8/15/00 11:13	13.8	8/15/00 11:13	26.3
8/15/00 11:14	13.5	8/15/00 11:14	21.28
8/15/00 11:15	14.2	8/15/00 11:15	11.52
8/15/00 11:16	9.7	8/15/00 11:16	19.17
8/15/00 11:17	13.4	8/15/00 11:17	16.07
8/15/00 11:18	10.2	8/15/00 11:18	26.17
8/15/00 11:19	6.8	8/15/00 11:19	28.04
8/15/00 11:20	6.1	8/15/00 11:20	20.41

8/15/00 11:21	5.8	8/15/00 11:21	11.7
8/15/00 11:22	5.8	8/15/00 11:22	10
8/15/00 11:23	5.3	8/15/00 11:23	11.48
8/15/00 11:24	5.3	8/15/00 11:24	17
8/15/00 11:25	5.3	8/15/00 11:25	19.54
8/15/00 11:26	5.3	8/15/00 11:26	20.12
8/15/00 11:27	5.3	8/15/00 11:27	17.62
8/15/00 11:28	5.3	8/15/00 11:28	11.68
8/15/00 11:29	5	8/15/00 11:29	9.92
8/15/00 11:30	4.3	8/15/00 11:30	10.92
8/15/00 11:31	4.3	8/15/00 11:31	11.85
8/15/00 11:32	4.3	8/15/00 11:32	12.62
8/15/00 11:33	4.3	8/15/00 11:33	12.94
8/15/00 11:34	4.5	8/15/00 11:34	12.46
8/15/00 11:35	4.3	8/15/00 11:35	13.57
8/15/00 11:36	4.3	8/15/00 11:36	17.52
8/15/00 11:37	6	8/15/00 11:37	17.94
8/15/00 11:38	12.6	8/15/00 11:38	12.16
8/15/00 11:39	5.8	8/15/00 11:39	12.07
8/15/00 11:40	5.3	8/15/00 11:40	15.84
8/15/00 11:41	5	8/15/00 11:41	15.85
8/15/00 11:42	5.8	8/15/00 11:42	15.14
8/15/00 11:43	7.6	8/15/00 11:43	14.06
8/15/00 11:44	6.3	8/15/00 11:44	12.94
8/15/00 11:45	14.5	8/15/00 11:45	12.78
8/15/00 11:46	9.5	8/15/00 11:46	10.93
8/15/00 11:47	7	8/15/00 11:47	10.37
8/15/00 11:48	6.1	8/15/00 11:48	10.03
8/15/00 11:49	5.3	8/15/00 11:49	9.56
8/15/00 11:50	11.6	8/15/00 11:50	7.39
8/15/00 11:51	49.4	8/15/00 11:51	7.63
8/15/00 11:52	72.5	8/15/00 11:52	6.51
8/15/00 11:53	71.1	8/15/00 11:53	5.8
8/15/00 11:54	96.3	8/15/00 11:54	5.35
8/15/00 11:55	131.6	8/15/00 11:55	5.08
8/15/00 11:56	149	8/15/00 11:56	4.52
8/15/00 11:57	162.6	8/15/00 11:57	5.05
8/15/00 11:58	223.9	8/15/00 11:58	5.23
8/15/00 11:59	284.3	8/15/00 11:59	4.12
8/15/00 12:00	195.1	8/15/00 12:00	3.07
8/15/00 12:01	128.7	8/15/00 12:01	1.36
8/15/00 12:02	243.8	8/15/00 12:02	1.93
8/15/00 12:03	285.7	8/15/00 12:03	1.42
8/15/00 12:04	352.7	8/15/00 12:04	1.67
8/15/00 12:05	370.5	8/15/00 12:05	2.84
8/15/00 12:06	212.5	8/15/00 12:06	9.58
8/15/00 12:07	73.4	8/15/00 12:07	16.34

8/15/00 12:08	40.9	8/15/00 12:08	9.89
8/15/00 12:09	112.7	8/15/00 12:09	5.74
8/15/00 12:10	92.2	8/15/00 12:10	5.78
8/15/00 12:11	37.8	8/15/00 12:11	6.23
8/15/00 12:12	49.5	8/15/00 12:12	5.84
8/15/00 12:13	153.1	8/15/00 12:13	4.98
8/15/00 12:14	349.3	8/15/00 12:14	4.45
8/15/00 12:15	284.8	8/15/00 12:15	4.21
8/15/00 12:16	281.9	8/15/00 12:16	3.78
8/15/00 12:17	301.5	8/15/00 12:17	3.33
8/15/00 12:18	201.3	8/15/00 12:18	9.01
8/15/00 12:19	193.8	8/15/00 12:19	12.16
8/15/00 12:20	381.6	8/15/00 12:20	9.67
8/15/00 12:21	371.7	8/15/00 12:21	15.86
8/15/00 12:22	275.4	8/15/00 12:22	23.25
8/15/00 12:23	156.3	8/15/00 12:23	22.31
8/15/00 12:24	40.9	8/15/00 12:24	18.71
8/15/00 12:25	16.7	8/15/00 12:25	13
8/15/00 12:26	30.5	8/15/00 12:26	10.08
8/15/00 12:27	87	8/15/00 12:27	6.86
8/15/00 12:28	37	8/15/00 12:28	15.11
8/15/00 12:29	32.2	8/15/00 12:29	16.52
8/15/00 12:30	25.3	8/15/00 12:30	15.12
8/15/00 12:31	20.9	8/15/00 12:31	11.75
8/15/00 12:32	17.5	8/15/00 12:32	15.46
8/15/00 12:33	17.4	8/15/00 12:33	17.47
8/15/00 12:34	21.6	8/15/00 12:34	17.09
8/15/00 12:35	23.1	8/15/00 12:35	6.74
8/15/00 12:36	12.3	8/15/00 12:36	5.57
8/15/00 12:37	9.9	8/15/00 12:37	6.96
8/15/00 12:38	6.7	8/15/00 12:38	16.39
8/15/00 12:39	7.9	8/15/00 12:39	26.53
8/15/00 12:40	5.2	8/15/00 12:40	20.11
8/15/00 12:41	5.5	8/15/00 12:41	15.77
8/15/00 12:42	6.9	8/15/00 12:42	18.99
8/15/00 12:43	5.3	8/15/00 12:43	26.79
8/15/00 12:44	4.5	8/15/00 12:44	18.73
8/15/00 12:45	4.9	8/15/00 12:45	15.88
8/15/00 12:46	3.6	8/15/00 12:46	13.32
8/15/00 12:47	4.2	8/15/00 12:47	12.17
8/15/00 12:48	4.3	8/15/00 12:48	12.04
8/15/00 12:49	4.3	8/15/00 12:49	13.71
8/15/00 12:50	4.8	8/15/00 12:50	18.33
8/15/00 12:51	4.6	8/15/00 12:51	12.98
8/15/00 12:52	4.3	8/15/00 12:52	15.47
8/15/00 12:53	8.8	8/15/00 12:53	15.16
8/15/00 12:54	25.4	8/15/00 12:54	12.38

8/15/00 12:55	9.2
8/15/00 12:56	12.9
8/15/00 12:57	59.5
8/15/00 12:58	13.3
8/15/00 12:59	5.8
8/15/00 13:00	5.3
	59.05575

8/15/00 12:55	17.05
8/15/00 12:56	13.77
8/15/00 12:57	8.58
8/15/00 12:58	18.49
8/15/00 12:59	21.12
8/15/00 13:00	15.99
	10.67652

CEMS CO Data RUN2

8/15/00 13:45	8.3
8/15/00 13:46	8.3
8/15/00 13:47	8.3
8/15/00 13:48	25.1
8/15/00 13:49	77.1
8/15/00 13:50	56.8
8/15/00 13:51	34.4
8/15/00 13:52	25.6
8/15/00 13:53	29.2
8/15/00 13:54	69.2
8/15/00 13:55	157.4
8/15/00 13:56	121.7
8/15/00 13:57	100.9
8/15/00 13:58	97
8/15/00 13:59	115.8
8/15/00 14:00	104.1
8/15/00 14:01	92.4
8/15/00 14:02	105.2
8/15/00 14:03	103.2
8/15/00 14:04	125.1
8/15/00 14:05	155.4
8/15/00 14:06	159.8
8/15/00 14:07	175.1
8/15/00 14:08	113
8/15/00 14:09	61.2
8/15/00 14:10	56.9
8/15/00 14:11	89.3
8/15/00 14:12	105.9
8/15/00 14:13	21.5
8/15/00 14:14	9.4
8/15/00 14:15	9.3
8/15/00 14:16	9
8/15/00 14:17	8.7
8/15/00 14:18	11.8
8/15/00 14:19	18.2
8/15/00 14:20	21.6
8/15/00 14:21	21.8
8/15/00 14:22	21.3
8/15/00 14:23	21
8/15/00 14:24	22.7
8/15/00 14:25	15.8
8/15/00 14:26	13.3
8/15/00 14:27	13.3
8/15/00 14:28	13.2
8/15/00 14:29	10.5
8/15/00 14:30	27.9

CEMS Nox DATA RUN2

8/15/00 13:45	0.69
8/15/00 13:46	0.86
8/15/00 13:47	1.17
8/15/00 13:48	1.5
8/15/00 13:49	2.06
8/15/00 13:50	1.49
8/15/00 13:51	1.02
8/15/00 13:52	0.84
8/15/00 13:53	4.96
8/15/00 13:54	8.8
8/15/00 13:55	3.17
8/15/00 13:56	2.4
8/15/00 13:57	2.53
8/15/00 13:58	2.43
8/15/00 13:59	1.86
8/15/00 14:00	1.73
8/15/00 14:01	1.91
8/15/00 14:02	2.25
8/15/00 14:03	3.04
8/15/00 14:04	3.61
8/15/00 14:05	2.33
8/15/00 14:06	1.87
8/15/00 14:07	1.99
8/15/00 14:08	2.26
8/15/00 14:09	2.56
8/15/00 14:10	4.41
8/15/00 14:11	3.46
8/15/00 14:12	1.81
8/15/00 14:13	2.56
8/15/00 14:14	3.44
8/15/00 14:15	3.77
8/15/00 14:16	3.97
8/15/00 14:17	4.15
8/15/00 14:18	4.28
8/15/00 14:19	5.31
8/15/00 14:20	6.79
8/15/00 14:21	6.03
8/15/00 14:22	5.61
8/15/00 14:23	5.72
8/15/00 14:24	6.48
8/15/00 14:25	5.69
8/15/00 14:26	4.87
8/15/00 14:27	4.87
8/15/00 14:28	5.64
8/15/00 14:29	6.47
8/15/00 14:30	9.02

8/15/00 14:31	185.7	8/15/00 14:31	5.5
8/15/00 14:32	216.3	8/15/00 14:32	3.88
8/15/00 14:33	217.6	8/15/00 14:33	4.39
8/15/00 14:34	220.8	8/15/00 14:34	5.08
8/15/00 14:35	193	8/15/00 14:35	4.76
8/15/00 14:36	197.8	8/15/00 14:36	5.1
8/15/00 14:37	164	8/15/00 14:37	4.66
8/15/00 14:38	156.6	8/15/00 14:38	4.26
8/15/00 14:39	162	8/15/00 14:39	4.62
8/15/00 14:40	263.6	8/15/00 14:40	5.37
8/15/00 14:41	134.6	8/15/00 14:41	6.59
8/15/00 14:42	52.6	8/15/00 14:42	5.83
8/15/00 14:43	91.4	8/15/00 14:43	4.49
8/15/00 14:44	390.2	8/15/00 14:44	3.71
8/15/00 14:45	988.9	8/15/00 14:45	3.26
8/15/00 14:46	999.7	8/15/00 14:46	3.13
8/15/00 14:47	999.7	8/15/00 14:47	3.3
8/15/00 14:48	774.7	8/15/00 14:48	3.74
8/15/00 14:49	933.4	8/15/00 14:49	3.87
8/15/00 14:50	784	8/15/00 14:50	2.54
8/15/00 14:51	999.5	8/15/00 14:51	2.26
8/15/00 14:52	716.2	8/15/00 14:52	2.75
8/15/00 14:53	398.2	8/15/00 14:53	1.39
8/15/00 14:54	307.7	8/15/00 14:54	0.88
8/15/00 14:55	270.1	8/15/00 14:55	0.89
8/15/00 14:56	196.2	8/15/00 14:56	1.29
8/15/00 14:57	217.3	8/15/00 14:57	1.09
8/15/00 14:58	166.3	8/15/00 14:58	5.42
8/15/00 14:59	45.4	8/15/00 14:59	15.38
8/15/00 15:00	22.4	8/15/00 15:00	14.15
8/15/00 15:01	15	8/15/00 15:01	12.47
8/15/00 15:02	16.7	8/15/00 15:02	30.06
8/15/00 15:03	19.9	8/15/00 15:03	26.81
8/15/00 15:04	48.1	8/15/00 15:04	11.53
8/15/00 15:05	164.9	8/15/00 15:05	3.6
8/15/00 15:06	117.3	8/15/00 15:06	4.06
8/15/00 15:07	49.1	8/15/00 15:07	10.22
8/15/00 15:08	32.5	8/15/00 15:08	12.09
8/15/00 15:09	23.5	8/15/00 15:09	21.23
8/15/00 15:10	19.6	8/15/00 15:10	25.56
8/15/00 15:11	16.1	8/15/00 15:11	20.61
8/15/00 15:12	17.8	8/15/00 15:12	17.67
8/15/00 15:13	19.6	8/15/00 15:13	15.23
8/15/00 15:14	16.2	8/15/00 15:14	16.67
8/15/00 15:15	13	8/15/00 15:15	22.71
8/15/00 15:16	10.1	8/15/00 15:16	33.33
8/15/00 15:17	7.5	8/15/00 15:17	27.54

8/15/00 15:18	6.8	8/15/00 15:18	22.36
8/15/00 15:19	6.3	8/15/00 15:19	18.21
8/15/00 15:20	5.3	8/15/00 15:20	16.38
8/15/00 15:21	5.3	8/15/00 15:21	15.38
8/15/00 15:22	5.3	8/15/00 15:22	15.24
8/15/00 15:23	5.3	8/15/00 15:23	15.09
8/15/00 15:24	5.3	8/15/00 15:24	13.91
8/15/00 15:25	5.3	8/15/00 15:25	31.31
8/15/00 15:26	5.5	8/15/00 15:26	38.57
8/15/00 15:27	4.3	8/15/00 15:27	16.75
8/15/00 15:28	4.3	8/15/00 15:28	15.56
8/15/00 15:29	4.3	8/15/00 15:29	15.43
8/15/00 15:30	4.3	8/15/00 15:30	25.88
8/15/00 15:31	4.3	8/15/00 15:31	48.6
8/15/00 15:32	4.7	8/15/00 15:32	40.32
8/15/00 15:33	5.3	8/15/00 15:33	17.61
8/15/00 15:34	5	8/15/00 15:34	13.52
8/15/00 15:35	6.1	8/15/00 15:35	20.92
8/15/00 15:36	8.7	8/15/00 15:36	16.19
8/15/00 15:37	5.6	8/15/00 15:37	11.5
8/15/00 15:38	12.1	8/15/00 15:38	11.69
8/15/00 15:39	16.6	8/15/00 15:39	12.36
8/15/00 15:40	8.9	8/15/00 15:40	11.66
8/15/00 15:41	6.4	8/15/00 15:41	11.11
8/15/00 15:42	5.3	8/15/00 15:42	10.78
8/15/00 15:43	5.3	8/15/00 15:43	8.9
8/15/00 15:44	5.3	8/15/00 15:44	7.18
8/15/00 15:45	5.3	8/15/00 15:45	10.55
8/15/00 15:46	13.9	8/15/00 15:46	29.01
8/15/00 15:47	86	8/15/00 15:47	17.1
8/15/00 15:48	147.2	8/15/00 15:48	8.06
8/15/00 15:49	154.3	8/15/00 15:49	8.81
8/15/00 15:50	98.2	8/15/00 15:50	11.52
8/15/00 15:51	35.5	8/15/00 15:51	8.09
8/15/00 15:52	41.6	8/15/00 15:52	5.89
8/15/00 15:53	72.7	8/15/00 15:53	5.06
8/15/00 15:54	115.4	8/15/00 15:54	4.53
8/15/00 15:55	146.7	8/15/00 15:55	4.3
8/15/00 15:56	261.4	8/15/00 15:56	4.14
8/15/00 15:57	503.4	8/15/00 15:57	4.29
8/15/00 15:58	585.8	8/15/00 15:58	3.89
8/15/00 15:59	529	8/15/00 15:59	3.34
8/15/00 16:00	431.1	8/15/00 16:00	4.93
8/15/00 16:01	233.9	8/15/00 16:01	9.34
8/15/00 16:02	122.5	8/15/00 16:02	13.92
8/15/00 16:03	46.2	8/15/00 16:03	11.72
8/15/00 16:04	18	8/15/00 16:04	17.29

8/15/00 16:05	12.2	8/15/00 16:05	30.24
8/15/00 16:06	32	8/15/00 16:06	29.49
8/15/00 16:07	168.1	8/15/00 16:07	13.62
8/15/00 16:08	169.7	8/15/00 16:08	6.3
8/15/00 16:09	189	8/15/00 16:09	7.46
8/15/00 16:10	88.8	8/15/00 16:10	8.52
8/15/00 16:11	30.4	8/15/00 16:11	6.18
8/15/00 16:12	55.8	8/15/00 16:12	5.6
8/15/00 16:13	126.2	8/15/00 16:13	5.66
8/15/00 16:14	240.6	8/15/00 16:14	5.3
8/15/00 16:15	339.1	8/15/00 16:15	4.11
8/15/00 16:16	336.5	8/15/00 16:16	3.58
8/15/00 16:17	257.6	8/15/00 16:17	3.83
8/15/00 16:18	273.7	8/15/00 16:18	3.95
8/15/00 16:19	245.2	8/15/00 16:19	3.91
8/15/00 16:20	360.6	8/15/00 16:20	3.15
8/15/00 16:21	277.4	8/15/00 16:21	2.21
8/15/00 16:22	156.4	8/15/00 16:22	1.97
8/15/00 16:23	90.5	8/15/00 16:23	1.89
8/15/00 16:24	43.3	8/15/00 16:24	2.43
8/15/00 16:25	35.4	8/15/00 16:25	2.22
8/15/00 16:26	40.4	8/15/00 16:26	2.26
8/15/00 16:27	14.9	8/15/00 16:27	3.96
8/15/00 16:28	7.6	8/15/00 16:28	8.16
8/15/00 16:29	5.3	8/15/00 16:29	9.59
8/15/00 16:30	5.3	8/15/00 16:30	9.05
8/15/00 16:31	5.3	8/15/00 16:31	8.59
8/15/00 16:32	5.3	8/15/00 16:32	8.44
8/15/00 16:33	5.3	8/15/00 16:33	8.09
8/15/00 16:34	5.3	8/15/00 16:34	7.93
8/15/00 16:35	5.3	8/15/00 16:35	7.87
8/15/00 16:36	5.3	8/15/00 16:36	7.88
8/15/00 16:37	5.3	8/15/00 16:37	8.36
8/15/00 16:38	5.4	8/15/00 16:38	19.95
8/15/00 16:39	10.6	8/15/00 16:39	11.54
8/15/00 16:40	29.9	8/15/00 16:40	5.61
8/15/00 16:41	22.3	8/15/00 16:41	6.4
8/15/00 16:42	10.2	8/15/00 16:42	9.49
8/15/00 16:43	8.2	8/15/00 16:43	10.75
8/15/00 16:44	6.8	8/15/00 16:44	11.83
8/15/00 16:45	6.5	8/15/00 16:45	14.04
8/15/00 16:46	9.2	8/15/00 16:46	16.23
8/15/00 16:47	6.5	8/15/00 16:47	16.1
8/15/00 16:48	4.3	8/15/00 16:48	17.77
8/15/00 16:49	4.9	8/15/00 16:49	16.26
8/15/00 16:50	5.3	8/15/00 16:50	16.4
8/15/00 16:51	5.3	8/15/00 16:51	16.24

8/15/00 16:52	8.5
8/15/00 16:53	12
8/15/00 16:54	9.4
8/15/00 16:55	10.6
8/15/00 16:56	8.1
8/15/00 16:57	6.7
8/15/00 16:58	15.1
8/15/00 16:59	10.6
Average:	114.901

8/15/00 16:52	15.28
8/15/00 16:53	20.68
8/15/00 16:54	31.86
8/15/00 16:55	31.88
8/15/00 16:56	31.27
8/15/00 16:57	27.3
8/15/00 16:58	16.82
8/15/00 16:59	14.56
	9.830256

CEMS CO Data Run3

8/16/00 7:54	12.3
8/16/00 7:55	12.3
8/16/00 7:56	19.8
8/16/00 7:57	28.1
8/16/00 7:58	43
8/16/00 7:59	26.1
8/16/00 8:00	39.3
8/16/00 8:01	56.1
8/16/00 8:02	48.1
8/16/00 8:03	64.1
8/16/00 8:04	70
8/16/00 8:05	85.2
8/16/00 8:06	125.2
8/16/00 8:07	186.4
8/16/00 8:08	187
8/16/00 8:09	198.5
8/16/00 8:10	137.5
8/16/00 8:11	65.8
8/16/00 8:12	29.9
8/16/00 8:13	32.5
8/16/00 8:14	25.8
8/16/00 8:15	15.1
8/16/00 8:16	15.9
8/16/00 8:17	44.3
8/16/00 8:18	106.3
8/16/00 8:19	102.6
8/16/00 8:20	166.7
8/16/00 8:21	169.2
8/16/00 8:22	182.1
8/16/00 8:23	187
8/16/00 8:24	160.7
8/16/00 8:25	157.6
8/16/00 8:26	146.4
8/16/00 8:27	134.9
8/16/00 8:28	189.7
8/16/00 8:29	235.7
8/16/00 8:30	202.9
8/16/00 8:31	256.4
8/16/00 8:32	272.9
8/16/00 8:33	114.3
8/16/00 8:34	56.5
8/16/00 8:35	118.2
8/16/00 8:36	128.1
8/16/00 8:37	141.8
8/16/00 8:38	139.7
8/16/00 8:39	172.4

CEMS Nox Data Run 3

8/16/00 7:54	14.23
8/16/00 7:55	11.84
8/16/00 7:56	10.18
8/16/00 7:57	9.39
8/16/00 7:58	6.96
8/16/00 7:59	6.63
8/16/00 8:00	6.48
8/16/00 8:01	5.91
8/16/00 8:02	5.49
8/16/00 8:03	4.93
8/16/00 8:04	3.9
8/16/00 8:05	3.33
8/16/00 8:06	3.24
8/16/00 8:07	3.23
8/16/00 8:08	3.06
8/16/00 8:09	3.1
8/16/00 8:10	3.44
8/16/00 8:11	6.66
8/16/00 8:12	8.78
8/16/00 8:13	5.64
8/16/00 8:14	5.14
8/16/00 8:15	5.78
8/16/00 8:16	6.39
8/16/00 8:17	6.19
8/16/00 8:18	5.67
8/16/00 8:19	5.5
8/16/00 8:20	6
8/16/00 8:21	6.42
8/16/00 8:22	5.37
8/16/00 8:23	4.32
8/16/00 8:24	3.2
8/16/00 8:25	3.11
8/16/00 8:26	3.41
8/16/00 8:27	4.94
8/16/00 8:28	5.44
8/16/00 8:29	3.64
8/16/00 8:30	2.75
8/16/00 8:31	2.29
8/16/00 8:32	3.88
8/16/00 8:33	14.93
8/16/00 8:34	18.25
8/16/00 8:35	6.42
8/16/00 8:36	4.18
8/16/00 8:37	4.09
8/16/00 8:38	3.59
8/16/00 8:39	3.5

8/16/00 8:40	219.6	8/16/00 8:40	3.27
8/16/00 8:41	206.9	8/16/00 8:41	2.81
8/16/00 8:42	267.3	8/16/00 8:42	2.71
8/16/00 8:43	278.8	8/16/00 8:43	2.93
8/16/00 8:44	126.6	8/16/00 8:44	7.26
8/16/00 8:45	87.3	8/16/00 8:45	11.16
8/16/00 8:46	88.2	8/16/00 8:46	6.18
8/16/00 8:47	36.1	8/16/00 8:47	13.1
8/16/00 8:48	26.5	8/16/00 8:48	20.2
8/16/00 8:49	24.6	8/16/00 8:49	18.18
8/16/00 8:50	22.1	8/16/00 8:50	16.91
8/16/00 8:51	28.1	8/16/00 8:51	15.96
8/16/00 8:52	18.1	8/16/00 8:52	14.68
8/16/00 8:53	14.8	8/16/00 8:53	14.03
8/16/00 8:54	13	8/16/00 8:54	13.12
8/16/00 8:55	18	8/16/00 8:55	10.36
8/16/00 8:56	24.2	8/16/00 8:56	8.9
8/16/00 8:57	27.5	8/16/00 8:57	6.07
8/16/00 8:58	18	8/16/00 8:58	6.24
8/16/00 8:59	25.2	8/16/00 8:59	6.87
8/16/00 9:00	67.6	8/16/00 9:00	5.57
8/16/00 9:01	61.8	8/16/00 9:01	4.26
8/16/00 9:02	79.3	8/16/00 9:02	4
8/16/00 9:03	80.6	8/16/00 9:03	2.96
8/16/00 9:04	68.3	8/16/00 9:04	2.75
8/16/00 9:05	92.6	8/16/00 9:05	2.97
8/16/00 9:06	118.1	8/16/00 9:06	3.23
8/16/00 9:07	159.7	8/16/00 9:07	2.8
8/16/00 9:08	170.5	8/16/00 9:08	2.3
8/16/00 9:09	111.2	8/16/00 9:09	2.68
8/16/00 9:10	125.9	8/16/00 9:10	3.92
8/16/00 9:11	169.7	8/16/00 9:11	4.88
8/16/00 9:12	200	8/16/00 9:12	5.01
8/16/00 9:13	195.2	8/16/00 9:13	5.65
8/16/00 9:14	135.1	8/16/00 9:14	5.6
8/16/00 9:15	201.5	8/16/00 9:15	4.62
8/16/00 9:16	158	8/16/00 9:16	4.02
8/16/00 9:17	151.4	8/16/00 9:17	3.89
8/16/00 9:18	134.2	8/16/00 9:18	4.05
8/16/00 9:19	103.4	8/16/00 9:19	3.59
8/16/00 9:20	93.9	8/16/00 9:20	3.54
8/16/00 9:21	95.4	8/16/00 9:21	3.62
8/16/00 9:22	94.4	8/16/00 9:22	3.57
8/16/00 9:23	95.5	8/16/00 9:23	3.63
8/16/00 9:24	99.4	8/16/00 9:24	3.44
8/16/00 9:25	83.7	8/16/00 9:25	3.3
8/16/00 9:26	86.5	8/16/00 9:26	3.2

8/16/00 9:27	95.2	8/16/00 9:27	3.28
8/16/00 9:28	101.2	8/16/00 9:28	3.25
8/16/00 9:29	80	8/16/00 9:29	3.19
8/16/00 9:30	84.5	8/16/00 9:30	3.48
8/16/00 9:31	97.2	8/16/00 9:31	3.11
8/16/00 9:32	127.1	8/16/00 9:32	5.23
8/16/00 9:33	38	8/16/00 9:33	5.96
8/16/00 9:34	25.2	8/16/00 9:34	4.69
8/16/00 9:35	111.8	8/16/00 9:35	4.55
8/16/00 9:36	296.4	8/16/00 9:36	4.61
8/16/00 9:37	295.5	8/16/00 9:37	4.92
8/16/00 9:38	335.1	8/16/00 9:38	5.62
8/16/00 9:39	217.8	8/16/00 9:39	6.41
8/16/00 9:40	242.1	8/16/00 9:40	6.45
8/16/00 9:41	374.5	8/16/00 9:41	6.31
8/16/00 9:42	666.5	8/16/00 9:42	5.72
8/16/00 9:43	463.6	8/16/00 9:43	5.34
8/16/00 9:44	334.5	8/16/00 9:44	4.35
8/16/00 9:45	220.9	8/16/00 9:45	3.29
8/16/00 9:46	202.4	8/16/00 9:46	3
8/16/00 9:47	189.4	8/16/00 9:47	2.94
8/16/00 9:48	156.4	8/16/00 9:48	2.34
8/16/00 9:49	141.4	8/16/00 9:49	2.43
8/16/00 9:50	124.6	8/16/00 9:50	3.08
8/16/00 9:51	75.4	8/16/00 9:51	8.3
8/16/00 9:52	103.1	8/16/00 9:52	6.25
8/16/00 9:53	98.1	8/16/00 9:53	2.81
8/16/00 9:54	150.3	8/16/00 9:54	2.48
8/16/00 9:55	160.8	8/16/00 9:55	2.71
8/16/00 9:56	147.7	8/16/00 9:56	3.08
8/16/00 9:57	146.4	8/16/00 9:57	3.86
8/16/00 9:58	86.5	8/16/00 9:58	4.35
8/16/00 9:59	68.6	8/16/00 9:59	3.97
8/16/00 10:00	64.2	8/16/00 10:00	7.48
8/16/00 10:01	38	8/16/00 10:01	17.3
8/16/00 10:02	84.1	8/16/00 10:02	5.38
8/16/00 10:03	58.3	8/16/00 10:03	4.55
8/16/00 10:04	18.7	8/16/00 10:04	15.92
8/16/00 10:05	13.2	8/16/00 10:05	17.67
8/16/00 10:06	11.2	8/16/00 10:06	15.15
8/16/00 10:07	10.1	8/16/00 10:07	14.34
8/16/00 10:08	9.6	8/16/00 10:08	13.48
8/16/00 10:09	8.6	8/16/00 10:09	13.35
8/16/00 10:10	8.3	8/16/00 10:10	13.3
8/16/00 10:11	8.3	8/16/00 10:11	13.22
8/16/00 10:12	7.3	8/16/00 10:12	13.33
8/16/00 10:13	7.3	8/16/00 10:13	13.08

8/16/00 10:14	7.3	8/16/00 10:14	12.85
8/16/00 10:15	8.2	8/16/00 10:15	12.79
8/16/00 10:16	20.1	8/16/00 10:16	13.31
8/16/00 10:17	13.7	8/16/00 10:17	13.17
8/16/00 10:18	24.5	8/16/00 10:18	14
8/16/00 10:19	19.5	8/16/00 10:19	13.76
8/16/00 10:20	10.1	8/16/00 10:20	13.16
8/16/00 10:21	7.8	8/16/00 10:21	12.78
8/16/00 10:22	7.3	8/16/00 10:22	12.86
8/16/00 10:23	7.3	8/16/00 10:23	13.02
8/16/00 10:24	8	8/16/00 10:24	12.95
8/16/00 10:25	7.1	8/16/00 10:25	12.75
8/16/00 10:26	6.3	8/16/00 10:26	12.55
8/16/00 10:27	6.3	8/16/00 10:27	12.51
8/16/00 10:28	6.3	8/16/00 10:28	12.37
8/16/00 10:29	6.3	8/16/00 10:29	11.79
8/16/00 10:30	7	8/16/00 10:30	9.45
8/16/00 10:31	8.2	8/16/00 10:31	9.12
8/16/00 10:32	8.3	8/16/00 10:32	9.04
8/16/00 10:33	8.8	8/16/00 10:33	8.96
8/16/00 10:34	8.3	8/16/00 10:34	8.78
8/16/00 10:35	8.4	8/16/00 10:35	9.02
8/16/00 10:36	9.2	8/16/00 10:36	9.15
8/16/00 10:37	8.3	8/16/00 10:37	9.35
8/16/00 10:38	33.7	8/16/00 10:38	10.69
8/16/00 10:39	60.2	8/16/00 10:39	9.14
8/16/00 10:40	106.1	8/16/00 10:40	6.58
8/16/00 10:41	159.4	8/16/00 10:41	6.99
8/16/00 10:42	62.6	8/16/00 10:42	6.64
8/16/00 10:43	45.6	8/16/00 10:43	6.12
8/16/00 10:44	65.6	8/16/00 10:44	5.33
8/16/00 10:45	86	8/16/00 10:45	4.69
8/16/00 10:46	118.8	8/16/00 10:46	4.56
8/16/00 10:47	110.3	8/16/00 10:47	3.9
8/16/00 10:48	99.8	8/16/00 10:48	3.5
8/16/00 10:49	117.6	8/16/00 10:49	3.89
8/16/00 10:50	255.6	8/16/00 10:50	4.62
8/16/00 10:51	464.7	8/16/00 10:51	4.27
8/16/00 10:52	562.2	8/16/00 10:52	3.92
8/16/00 10:53	364.9	8/16/00 10:53	2.78
8/16/00 10:54	242.9	8/16/00 10:54	2.29
8/16/00 10:55	199.9	8/16/00 10:55	2.41
8/16/00 10:56	97.2	8/16/00 10:56	5.72
8/16/00 10:57	44	8/16/00 10:57	8.11
8/16/00 10:58	94.7	8/16/00 10:58	6.78
8/16/00 10:59	70.8	8/16/00 10:59	4.87
8/16/00 11:00	84.8	8/16/00 11:00	4.56

8/16/00 11:01	192.4	8/16/00 11:01	5.36
8/16/00 11:02	57.5	8/16/00 11:02	6.07
8/16/00 11:03	30.8	8/16/00 11:03	5.41
8/16/00 11:04	85	8/16/00 11:04	5.16
8/16/00 11:05	188.9	8/16/00 11:05	5.25
8/16/00 11:06	267.8	8/16/00 11:06	5.08
8/16/00 11:07	205.8	8/16/00 11:07	5.25
8/16/00 11:08	199.4	8/16/00 11:08	5.09
8/16/00 11:09	229.3	8/16/00 11:09	5.3
8/16/00 11:10	241.7	8/16/00 11:10	5.16
8/16/00 11:11	269.1	8/16/00 11:11	5.04
8/16/00 11:12	474.1	8/16/00 11:12	4.42
8/16/00 11:13	484.4	8/16/00 11:13	4.01
8/16/00 11:14	231.8	8/16/00 11:14	3.41
8/16/00 11:15	156.8	8/16/00 11:15	4.41
8/16/00 11:16	162.3	8/16/00 11:16	3.24
8/16/00 11:17	160.8	8/16/00 11:17	2.38
8/16/00 11:18	184.2	8/16/00 11:18	2.32
8/16/00 11:19	190.6	8/16/00 11:19	2.63
8/16/00 11:20	152	8/16/00 11:20	8.6
8/16/00 11:21	75.6	8/16/00 11:21	12.05
8/16/00 11:22	143.6	8/16/00 11:22	4.18
8/16/00 11:23	234.7	8/16/00 11:23	2.98
8/16/00 11:24	215.2	8/16/00 11:24	3.19
8/16/00 11:25	199.1	8/16/00 11:25	3.25
8/16/00 11:26	209.8	8/16/00 11:26	3.11
8/16/00 11:27	259.3	8/16/00 11:27	3.12
8/16/00 11:28	232.6	8/16/00 11:28	3.41
8/16/00 11:29	288.1	8/16/00 11:29	3.73
8/16/00 11:30	391.2	8/16/00 11:30	4.04
8/16/00 11:31	150.9	8/16/00 11:31	9.82
8/16/00 11:32	35.8	8/16/00 11:32	22.8
8/16/00 11:33	23.7	8/16/00 11:33	28.79
8/16/00 11:34	17.7	8/16/00 11:34	19.73
8/16/00 11:35	20.8	8/16/00 11:35	17.1
8/16/00 11:36	17	8/16/00 11:36	15.6
8/16/00 11:37	42.7	8/16/00 11:37	16.03
8/16/00 11:38	36.9	8/16/00 11:38	14.84
8/16/00 11:39	17.6	8/16/00 11:39	13.84
8/16/00 11:40	12.9	8/16/00 11:40	13.72
8/16/00 11:41	12.3	8/16/00 11:41	13.67
8/16/00 11:42	14.8	8/16/00 11:42	11.3
8/16/00 11:43	44.6	8/16/00 11:43	11.47
8/16/00 11:44	57.1	8/16/00 11:44	7.3
8/16/00 11:45	37.5	8/16/00 11:45	5.35
8/16/00 11:46	55	8/16/00 11:46	5
8/16/00 11:47	87	8/16/00 11:47	4.72

8/16/00 11:48	126
8/16/00 11:49	191.5
8/16/00 11:50	189.8
8/16/00 11:51	196.3
8/16/00 11:52	191
8/16/00 11:53	210.1
8/16/00 11:54	283.8
8/16/00 11:55	263.2
8/16/00 11:56	221.1
8/16/00 11:57	172.5
8/16/00 11:58	138.1
8/16/00 11:59	100.8
8/16/00 12:00	40
8/16/00 12:01	53.2
8/16/00 12:02	133.4
8/16/00 12:03	53.3
8/16/00 12:04	79.3
8/16/00 12:05	256.8
8/16/00 12:06	580.9
8/16/00 12:07	515.8
8/16/00 12:08	556.5
8/16/00 12:09	436.8
8/16/00 12:10	323.2
8/16/00 12:11	347.7
8/16/00 12:12	387.4
8/16/00 12:13	502.4
8/16/00 12:14	358.5
Average	142.7695

8/16/00 11:48	4.43
8/16/00 11:49	4.26
8/16/00 11:50	3.9
8/16/00 11:51	3.23
8/16/00 11:52	2.9
8/16/00 11:53	3.4
8/16/00 11:54	3.64
8/16/00 11:55	2.73
8/16/00 11:56	2.17
8/16/00 11:57	1.91
8/16/00 11:58	1.89
8/16/00 11:59	4.69
8/16/00 12:00	14.79
8/16/00 12:01	6.3
8/16/00 12:02	7.49
8/16/00 12:03	7.31
8/16/00 12:04	6.26
8/16/00 12:05	5.1
8/16/00 12:06	4.79
8/16/00 12:07	4.42
8/16/00 12:08	3.51
8/16/00 12:09	2.96
8/16/00 12:10	2.54
8/16/00 12:11	3.19
8/16/00 12:12	3.28
8/16/00 12:13	3.13
8/16/00 12:14	2.83

6.845187

CEMS CO Data Run4

8/16/00 13:09	110.9
8/16/00 13:10	42.4
8/16/00 13:11	11.9
8/16/00 13:12	8.6
8/16/00 13:13	31.5
8/16/00 13:14	57.9
8/16/00 13:15	52.8
8/16/00 13:16	24.4
8/16/00 13:17	25.1
8/16/00 13:18	25.1
8/16/00 13:19	152.3
8/16/00 13:20	246.2
8/16/00 13:21	298.7
8/16/00 13:22	204.8
8/16/00 13:23	248.6
8/16/00 13:24	310.6
8/16/00 13:25	274.9
8/16/00 13:26	170.5
8/16/00 13:27	168.5
8/16/00 13:28	107.6
8/16/00 13:29	28.5
8/16/00 13:30	17.7
8/16/00 13:31	52.4
8/16/00 13:32	66.9
8/16/00 13:33	25.3
8/16/00 13:34	8.4
8/16/00 13:35	9.5
8/16/00 13:36	6
8/16/00 13:37	17.2
8/16/00 13:38	45.9
8/16/00 13:39	99.7
8/16/00 13:40	68.1
8/16/00 13:41	46.1
8/16/00 13:42	50.5
8/16/00 13:43	81.2
8/16/00 13:44	40.2
8/16/00 13:45	18.2
8/16/00 13:46	12.1
8/16/00 13:47	13.1
8/16/00 13:48	10.9
8/16/00 13:49	12.7
8/16/00 13:50	60.2
8/16/00 13:51	36.2
8/16/00 13:52	9.2
8/16/00 13:53	7.3
8/16/00 13:54	9

CEMS Nox Data Run4

8/16/00 13:09	2.25
8/16/00 13:10	8.45
8/16/00 13:11	9.21
8/16/00 13:12	7.98
8/16/00 13:13	7.59
8/16/00 13:14	6.23
8/16/00 13:15	5.83
8/16/00 13:16	5.91
8/16/00 13:17	6.23
8/16/00 13:18	6.09
8/16/00 13:19	5.5
8/16/00 13:20	4.79
8/16/00 13:21	4.75
8/16/00 13:22	4.42
8/16/00 13:23	4.02
8/16/00 13:24	3.52
8/16/00 13:25	3.43
8/16/00 13:26	5.06
8/16/00 13:27	7.64
8/16/00 13:28	8.34
8/16/00 13:29	15.63
8/16/00 13:30	16.27
8/16/00 13:31	9.11
8/16/00 13:32	6.64
8/16/00 13:33	9.55
8/16/00 13:34	16.05
8/16/00 13:35	18.78
8/16/00 13:36	17.77
8/16/00 13:37	15.01
8/16/00 13:38	8.83
8/16/00 13:39	3.92
8/16/00 13:40	7.44
8/16/00 13:41	10.05
8/16/00 13:42	8.41
8/16/00 13:43	6.69
8/16/00 13:44	15.49
8/16/00 13:45	23.77
8/16/00 13:46	46.9
8/16/00 13:47	27.6
8/16/00 13:48	14.77
8/16/00 13:49	12.28
8/16/00 13:50	6.4
8/16/00 13:51	10.9
8/16/00 13:52	13.28
8/16/00 13:53	13.33
8/16/00 13:54	14.11

8/16/00 13:55	9.5	8/16/00 13:55	14.14
8/16/00 13:56	23.1	8/16/00 13:56	14.77
8/16/00 13:57	22.3	8/16/00 13:57	14.48
8/16/00 13:58	9.3	8/16/00 13:58	12.99
8/16/00 13:59	7.4	8/16/00 13:59	13.04
8/16/00 14:00	7.3	8/16/00 14:00	11.78
8/16/00 14:01	8.2	8/16/00 14:01	10.3
8/16/00 14:02	9.3	8/16/00 14:02	10.53
8/16/00 14:03	10	8/16/00 14:03	10.47
8/16/00 14:04	9.4	8/16/00 14:04	8.83
8/16/00 14:05	9.3	8/16/00 14:05	3.58
8/16/00 14:06	9.3	8/16/00 14:06	2.25
8/16/00 14:07	9.2	8/16/00 14:07	2.18
8/16/00 14:08	8.7	8/16/00 14:08	2.18
8/16/00 14:09	9.3	8/16/00 14:09	2.02
8/16/00 14:10	9.1	8/16/00 14:10	1.56
8/16/00 14:11	9.3	8/16/00 14:11	1.6
8/16/00 14:12	8.4	8/16/00 14:12	1.96
8/16/00 14:13	8.7	8/16/00 14:13	2.32
8/16/00 14:14	9.3	8/16/00 14:14	2.09
8/16/00 14:15	9.3	8/16/00 14:15	1.64
8/16/00 14:16	9.3	8/16/00 14:16	1.4
8/16/00 14:17	8.7	8/16/00 14:17	1.39
8/16/00 14:18	8.3	8/16/00 14:18	1.52
8/16/00 14:19	15.4	8/16/00 14:19	5.19
8/16/00 14:20	48.6	8/16/00 14:20	12.81
8/16/00 14:21	82.7	8/16/00 14:21	8.54
8/16/00 14:22	60.9	8/16/00 14:22	5.9
8/16/00 14:23	62.1	8/16/00 14:23	4.64
8/16/00 14:24	75.6	8/16/00 14:24	3.77
8/16/00 14:25	89.8	8/16/00 14:25	4.13
8/16/00 14:26	106.4	8/16/00 14:26	3.41
8/16/00 14:27	138	8/16/00 14:27	2.8
8/16/00 14:28	143.5	8/16/00 14:28	2.76
8/16/00 14:29	202.2	8/16/00 14:29	2.82
8/16/00 14:30	239.2	8/16/00 14:30	2.78
8/16/00 14:31	249	8/16/00 14:31	4.67
8/16/00 14:32	178	8/16/00 14:32	7.36
8/16/00 14:33	124.9	8/16/00 14:33	5.42
8/16/00 14:34	69.8	8/16/00 14:34	8.46
8/16/00 14:35	18.2	8/16/00 14:35	11.97
8/16/00 14:36	35.4	8/16/00 14:36	13.54
8/16/00 14:37	58.4	8/16/00 14:37	9.22
8/16/00 14:38	54.2	8/16/00 14:38	7.1
8/16/00 14:39	40.8	8/16/00 14:39	6.78
8/16/00 14:40	40.9	8/16/00 14:40	6.67
8/16/00 14:41	68.3	8/16/00 14:41	6.06

8/16/00 14:42	105
8/16/00 14:43	190.1
8/16/00 14:44	451.1
8/16/00 14:45	409.2
8/16/00 14:46	552
8/16/00 14:47	680.3
8/16/00 14:48	527.2
8/16/00 14:49	287.9
8/16/00 14:50	285.6
8/16/00 14:51	255.7
8/16/00 14:52	192.9
8/16/00 14:53	88.8
8/16/00 14:54	53.7
8/16/00 14:55	11.5
8/16/00 14:56	6.4
8/16/00 14:57	6.6
8/16/00 14:58	3
8/16/00 14:59	2.3
8/16/00 15:00	2.3
8/16/00 15:01	22.9
8/16/00 15:02	52.2
8/16/00 15:03	52.3
8/16/00 15:04	52.3
8/16/00 15:05	52.3
8/16/00 15:06	76.9
8/16/00 15:07	5.4
8/16/00 15:08	25.2
8/16/00 15:09	52.3
Average	85.86777

8/16/00 14:42	5.28
8/16/00 14:43	4.82
8/16/00 14:44	4.62
8/16/00 14:45	4.12
8/16/00 14:46	3.68
8/16/00 14:47	3.34
8/16/00 14:48	3.1
8/16/00 14:49	2.77
8/16/00 14:50	2.52
8/16/00 14:51	2.53
8/16/00 14:52	3.67
8/16/00 14:53	5.91
8/16/00 14:54	9.28
8/16/00 14:55	10.91
8/16/00 14:56	11.64
8/16/00 14:57	10.21
8/16/00 14:58	1.61
8/16/00 14:59	-0.02
8/16/00 15:00	-0.02
8/16/00 15:01	17.27
8/16/00 15:02	54.71
8/16/00 15:03	56.4
8/16/00 15:04	56.4
8/16/00 15:05	56.43
8/16/00 15:06	56.49
8/16/00 15:07	56.35
8/16/00 15:08	56.39
8/16/00 15:09	56.4
	11.06488

Calibration Error Test, Run 1 STRATA Version 1.2.1

Operator: Peter Hilty
 Plant Name: Newport Steel
 Location: EAF Collector Exhaust

Reference Cylinder Numbers				
	Zero	Low-range	Mid-range	High-range
O2	N2		CC84981	Air
CO2	N2		CC84981	CC113935
CO	N2	CC113985	CC113935	CC11790
NOx	N2	CC118512	CC106973	CC79974
SO2	N2	400±20%	400±60%	CC5784

Date/Time	08-14-2000		13:12:59		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00	0.0
Zero Avg	0.018	-0.043	0.4	0.24	-0.2
Zero Error%	0.1%	0.2%	0.0%	0.0%	0.0%
Low Ref Cyl			50.0	50.50	
Low Avg			50.1	50.46	
Low Error%			0.0%	0.0%	
Mid Ref Cyl			100.0	89.30	
Mid Avg			98.2	88.74	
Mid Error%			0.2%	0.1%	
High Ref Cyl	20.900	15.000	152.0	197.40	400.0
High Avg	20.841	14.980	150.5	197.47	400.0
High Error%	0.2%	0.1%	0.2%	0.0%	0.0%
Calibration Error Test End					

Calibration Error Test, Run 1 STRATA Version 1.2.1

Operator: Peter Hilty
 Plant Name: Newport Steel
 Location: EAF Exhaust/Baghouse Inlet

	Reference Cylinder Numbers			
	Zero	Low-range	Mid-range	High-range
O2	N2		CC84981	Air
CO2	N2		CC84981	CC113935
CO	N2	CC113985	CC113935	CC94790
NOx	N2	CC118512	CC106973	CC79974
SO2	N2	400±20%	400*60%	CC5784

Date/Time	08-15-2000		07:39:45		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00	0.0
Zero Avg	0.022	-0.267	-5.5	0.81	0.3
Zero Error%	0.1%	1.3%	0.6%	0.3%	0.0%
Low Ref Cyl			50.0	50.50	80.0
Low Avg			46.1	50.15	81.8
Low Error%			0.4%	0.1%	0.2%
Mid Ref Cyl	10.000	8.000	100.0	89.30	240.0
Mid Avg	9.934	8.016	94.7	89.22	227.0
Mid Error%	0.3%	0.1%	0.5%	0.0%	1.3%
High Ref Cyl	20.900	15.000	152.0	197.40	400.0
High Avg	20.896	14.993	147.1	197.68	393.3
High Error%	0.0%	0.0%	0.5%	0.1%	0.7%

Calibration Error Test End

Initial System Bias Check, Run 1 STRATA Version 1.2.1

Operator: Peter Hilty

Plant Name: Newport Steel

Location: EAF Exhaust/Baghouse Inlet

Reference Cylinder Numbers

	Zero	Span
O2	N2	Air
CO2	N2	CC84981
CO	N2	CC113985
NOx	N2	CC118512
SO2	N2	CC5784

Date/Time	08-15-2000		07:50:41		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00	0.0
Zero Cal	0.022	-0.267	-5.5	0.81	0.3
Zero Avg	-0.032	-0.219	-2.1	0.69	0.2
Zero Bias%	0.2%	0.2%	0.3%	0.0%	0.0%
Zero Drift%					
Span Ref Cyl	20.900	8.000	50.0	50.50	400.0
Span Cal	20.896	8.016	46.1	50.15	393.3
Span Avg	20.903	8.014	47.1	49.91	392.4
Span Bias%	0.0%	0.0%	0.1%	0.1%	0.1%
Span Drift%					

System Bias Check End

Final System Bias Check, Run 1 STRATA Version 1.2.1

Operator: Peter Hilty
 Plant Name: Newport Steel
 Location: EAF Exhaust/Baghouse Inlet

Reference Cylinder Numbers

	Zero	Span
O2	N2	Air
CO2	N2	CC84981
CO	N2	CC113985
NOx	N2	CC118512
SO2	N2	CC5784

Date/Time	08-15-2000		12:25:04		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00	0.0
Zero Cal	0.022	-0.267	-5.5	0.81	0.3
Zero Avg	-0.086	-0.301	-10.0	1.77	-1.9
Zero Bias%	0.4%	0.2%	0.4%	0.4%	0.2%
Zero Drift%	-0.2%	-0.4%	-0.8%	0.4%	-0.2%
Span Ref Cyl	20.900	8.000	50.0	50.50	400.0
Span Cal	20.896	8.016	46.1	50.15	393.3
Span Avg	20.824	7.992	39.5	51.43	399.0
Span Bias%	0.3%	0.1%	0.7%	0.5%	0.6%
Span Drift%	-0.3%	-0.1%	-0.8%	0.6%	0.7%
Ini Zero Avg	-0.032	-0.219	-2.1	0.69	0.2
Ini Span Avg	20.903	8.014	47.1	49.91	392.4
Run Avg	20.597	0.267	97.5	10.23	31.9
Co	-0.059	-0.260	-6.0	1.23	-0.8
Cm	20.864	8.003	43.3	50.67	395.7
Correct Avg	20.633	0.510	105.0	9.19	33.1
System Bias Check End					

Test Run 2 STRATA Version 1.2.1

		O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
08-15-2000	17:10:33	25.086*	13.097*	3289.2*	9.68*	1906.6*
08-15-2000	17:11:33	20.384	0.430	21.2	7.86	-3.1
08-15-2000	17:12:33	20.418	0.402	22.9	7.46	-3.1
08-15-2000	17:13:33	20.454	0.405	98.4	7.37	-3.1
08-15-2000	17:14:34	20.441	0.429	198.0	7.36	-3.2
08-15-2000	17:15:34	20.392	0.474	290.4	6.38	-3.2
08-15-2000	17:16:34	20.378	0.484	337.7	5.57	-3.3
08-15-2000	17:17:34	20.348	0.510	239.3	5.58	-3.3
08-15-2000	17:18:34	20.355	0.507	255.3	5.73	-3.3
08-15-2000	17:19:34	20.333	0.527	241.0	6.11	-3.3
08-15-2000	17:20:34	20.370	0.481	393.5	5.40	-3.3
08-15-2000	17:21:34	20.414	0.430	291.8	4.32	-3.3
08-15-2000	17:22:32	20.476	0.370	155.1	4.33	-3.3
08-15-2000	17:23:32	20.484	0.344	108.1	4.02	-3.3
08-15-2000	17:24:32	20.532	0.335	36.2	4.50	-3.3
08-15-2000	17:25:32	20.501	0.406	26.0	4.58	-3.2
08-15-2000	17:26:32	20.475	0.461	36.1	4.26	-3.2
08-15-2000	17:27:32	20.499	0.368	9.5	5.33	-3.2
08-15-2000	17:28:32	20.582	0.241	-2.1	8.22	-3.2
08-15-2000	17:29:33	20.662	0.156	-6.8	10.98	-3.2
08-15-2000	17:30:33	20.687	0.138	-6.8	10.41	-3.2
08-15-2000	17:31:33	20.700	0.119	-10.6	9.75	-3.2
08-15-2000	17:32:33	20.716	0.106	-7.1	9.56	-3.2
08-15-2000	17:33:33	20.721	0.102	-6.9	9.45	-3.2
08-15-2000	17:34:33	20.721	0.099	-6.5	9.25	-3.2
08-15-2000	17:35:33	20.724	0.093	-6.4	9.06	-3.2
08-15-2000	17:36:33	20.726	0.089	-5.9	9.13	-3.2
08-15-2000	17:37:33	20.726	0.087	-6.2	9.28	-3.2
08-15-2000	17:38:33	20.702	0.124	-6.7	14.05	-3.2
08-15-2000	17:39:33	20.580	0.281	-4.2	19.04	-3.2
08-15-2000	17:40:33	20.500	0.474	8.6	7.37	-3.2
08-15-2000	17:41:33	20.429	0.548	23.3	6.89	-3.2
08-15-2000	17:42:33	20.518	0.393	0.2	9.77	-3.2
08-15-2000	17:43:33	20.536	0.367	-2.7	11.42	-3.2
08-15-2000	17:44:33	20.517	0.415	-4.0	12.25	-3.2
08-15-2000	17:45:33	20.551	0.357	-5.1	13.58	-3.1
08-15-2000	17:46:33	20.554	0.357	-3.6	17.04	-3.1
08-15-2000	17:47:33	20.537	0.355	-2.6	15.46	-3.1
08-15-2000	17:48:33	20.593	0.293	-7.1	17.57	-3.1
08-15-2000	17:49:34	20.631	0.229	-7.1	16.94	-3.1
08-15-2000	17:50:34	20.640	0.202	-6.1	16.31	-3.1
08-15-2000	17:51:34	20.640	0.225	-5.6	16.46	-3.1
08-15-2000	17:52:34	20.620	0.255	-4.7	15.76	-3.2
08-15-2000	17:53:34	20.556	0.315	1.5	16.78	-3.2
08-15-2000	17:54:34	20.518	0.357	-0.3	25.06	-3.2

Test Run 2 STRATA Version 1.2.1

		O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
08-15-2000 14:43:34	25.148*	24.468*	3674.7*	63.93*	1833.6*	
08-15-2000 14:44:34	20.761	-0.012	2.9	2.90	-2.7	
08-15-2000 14:45:34	20.760	-0.012	3.0	2.65	-2.7	
08-15-2000 14:46:34	20.759	-0.013	3.3	2.66	-2.7	
08-15-2000 14:47:32	20.760	-0.013	2.8	3.01	-2.7	
08-15-2000 14:48:32	20.755	-0.002	5.1	3.17	-2.8	
08-15-2000 14:49:32	20.619	0.155	75.4	3.72	-2.8	
08-15-2000 14:50:32	20.697	0.036	71.7	3.33	-2.8	
08-15-2000 14:51:32	20.734	0.013	36.7	3.11	-2.8	
08-15-2000 14:52:32	20.743	0.005	24.3	2.73	-2.8	
08-15-2000 14:53:32	20.746	0.009	21.1	2.66	-2.8	
08-15-2000 14:54:32	20.592	0.141	49.4	12.48	-2.8	
08-15-2000 14:55:33	20.539	0.163	134.2	4.66	-2.8	
08-15-2000 14:56:33	20.499	0.211	123.2	3.91	-2.8	
08-15-2000 14:57:33	20.472	0.233	101.8	4.05	-2.8	
08-15-2000 14:58:33	20.478	0.233	86.3	4.31	-2.8	
08-15-2000 14:59:33	20.436	0.277	109.9	3.60	-2.8	
08-15-2000 15:00:33	20.430	0.285	105.7	3.41	-2.8	
08-15-2000 15:01:33	20.435	0.274	88.2	3.52	-2.8	
08-15-2000 15:02:33	20.401	0.338	92.6	3.89	-2.9	
08-15-2000 15:03:33	20.426	0.311	103.3	4.24	-2.8	
08-15-2000 15:04:33	20.431	0.317	102.8	5.31	-2.8	
08-15-2000 15:05:33	20.439	0.320	138.9	4.29	-2.7	
08-15-2000 15:06:33	20.438	0.311	150.8	3.50	-2.7	
08-15-2000 15:07:33	20.433	0.355	174.3	3.71	-2.7	
08-15-2000 15:08:34	20.436	0.316	105.3	3.92	-2.9	
08-15-2000 15:09:34	20.522	0.251	59.6	3.95	-2.7	
08-15-2000 15:10:34	20.593	0.228	47.1	6.43	-2.7	
08-15-2000 15:11:34	20.490	0.323	87.6	5.06	-2.8	
08-15-2000 15:12:34	20.370	0.448	123.0	3.38	-2.8	
08-15-2000 15:13:34	20.506	0.255	29.8	3.83	-2.8	
08-15-2000 15:14:34	20.644	0.163	0.4	4.88	-2.8	
08-15-2000 15:15:34	20.664	0.142	1.3	5.29	-2.8	
08-15-2000 15:16:34	20.654	0.126	1.1	5.35	-2.9	
08-15-2000 15:17:34	20.689	0.123	0.3	5.48	-2.8	
08-15-2000 15:18:32	20.689	0.121	3.3	5.63	-2.8	
08-15-2000 15:19:32	20.698	0.099	10.8	5.70	-2.8	
08-15-2000 15:20:32	20.629	0.176	17.0	8.76	-2.8	
08-15-2000 15:21:32	20.657	0.143	18.9	8.14	-2.8	
08-15-2000 15:22:32	20.662	0.127	16.9	7.32	-2.8	
08-15-2000 15:23:33	20.667	0.120	17.4	7.42	-2.8	
08-15-2000 15:24:33	20.662	0.137	18.9	7.80	-2.8	
08-15-2000 15:25:33	20.661	0.129	10.7	7.29	-2.8	
08-15-2000 15:26:33	20.686	0.101	6.2	6.17	-2.8	
08-15-2000 15:27:33	20.689	0.095	5.9	5.87	-2.8	
08-15-2000 15:28:33	20.644	0.147	6.7	6.81	-2.9	
08-15-2000 15:29:33	20.598	0.164	3.5	7.00	-2.9	
08-15-2000 15:30:33	20.584	0.199	4.2	10.55	-2.9	
08-15-2000 15:31:33	20.531	0.263	156.4	8.68	-2.9	

Test Run 2 Begin. STRATA Version 1.2.1
 Operator: Peter Hilty
 Plant Name: Newport Steel
 Location: EAF Exhaust/Baghouse Inlet

	O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
Begin calculating run averages					
8/15/00 13:55:32	20.484	0.401	7.8	13.59	-2.4
8/15/00 13:56:33	20.493	0.412	4.2	16.63	-2.4
8/15/00 13:57:33	20.442	0.563	63	8.05	-2.4
8/15/00 13:58:34	20.532	0.313	14.1	14.79	-2.4
8/15/00 14:01:34	20.657	0.203	0.9	14.64	-2.5
8/15/00 14:02:34	20.679	0.181	0.8	16.27	-2.5
8/15/00 14:03:34	20.699	0.152	0.6	18.43	-2.5
8/15/00 14:04:32	20.709	0.142	0.8	17.7	-2.5
8/15/00 14:05:32	20.702	0.139	1.6	16.99	-2.5
8/15/00 14:06:32	20.714	0.129	1.1	15.57	-2.5
8/15/00 14:10:33	20.509	0.422	12.6	16.07	-2.6
8/15/00 14:11:33	20.558	0.229	4.2	10.75	-2.6
8/15/00 14:12:33	20.654	0.144	1	15.57	-2.6
8/15/00 14:13:33	20.694	0.129	0.8	18.28	-2.6
8/15/00 14:14:33	20.678	0.146	7.5	15.81	-2.6
8/15/00 14:15:33	20.7	0.11	4.2	14.08	-2.6
8/15/00 14:16:33	20.729	0.086	2.4	13.61	-2.6
8/15/00 14:17:33	20.741	0.07	16.2	12.83	-2.6
8/15/00 14:18:34	20.764	0.056	8.1	11.72	-2.6
8/15/00 14:19:34	20.772	0.041	4	10.64	-2.6
8/15/00 14:20:34	20.755	0.014	3.6	3.39	-2.5
8/15/00 14:21:34	20.751	0.007	2.1	2.59	-2.5
8/15/00 14:22:34	20.752	0.004	1.8	2.52	-2.5
8/15/00 14:23:34	20.754	-0.001	1.2	2.61	-2.5
8/15/00 14:24:34	20.753	-0.002	1.2	2.67	-2.6
8/15/00 14:25:34	20.753	-0.002	1.4	2.54	-2.6
8/15/00 14:26:34	20.752	-0.002	1.4	2.73	-2.6
8/15/00 14:27:34	20.75	-0.002	1.4	3.26	-2.6
8/15/00 14:28:34	20.748	-0.003	2.3	3.26	-2.6
8/15/00 14:29:34	20.747	-0.003	2.6	2.92	-2.6
8/15/00 14:30:34	20.747	-0.003	2.5	2.81	-2.6
8/15/00 14:31:32	20.748	-0.003	2.3	2.88	-2.6
8/15/00 14:32:32	20.753	-0.009	2	2.76	-2.6
8/15/00 14:33:32	20.754	-0.01	2.4	2.71	-2.7
8/15/00 14:34:32	20.756	-0.011	3.2	2.65	-2.7
8/15/00 14:35:32	20.755	-0.012	3.4	2.64	-2.7
8/15/00 14:36:32	20.753	-0.011	3.9	2.69	-2.7
8/15/00 14:37:32	20.754	-0.011	3.8	2.83	-2.6
8/15/00 14:38:32	20.752	-0.011	3.1	2.98	-2.6
8/15/00 14:39:32	20.755	-0.011	2.8	2.9	-2.6
8/15/00 14:40:33	20.757	-0.011	3.5	2.79	-2.6
8/15/00 14:41:33	20.759	-0.011	2.7	2.79	-2.6
8/15/00 14:42:33	20.761	-0.011	3.3	2.67	-2.6

Test Run 2 STRATA Version 1.2.1

	O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
Begin calculating run averages					
08-15-2000 13:55:32	20.484	0.401	7.8	13.59	-2.4
08-15-2000 13:56:33	20.493	0.412	4.2	16.63	-2.4
08-15-2000 13:57:33	20.442	0.563	63.0	8.05	-2.4
08-15-2000 13:58:34	20.532	0.313	14.1	14.79	-2.4
08-15-2000 13:59:33	22.057*	0.223*	1180.6*	20.39	-2.4
08-15-2000 14:00:34	23.347*	34.346*	1706.0*	44.26*	565.9*
08-15-2000 14:01:34	20.657	0.203	0.9	14.64	-2.5
08-15-2000 14:02:34	20.679	0.181	0.8	16.27	-2.5
08-15-2000 14:03:34	20.699	0.152	0.6	18.43	-2.5
08-15-2000 14:04:32	20.709	0.142	0.8	17.70	-2.5
08-15-2000 14:05:32	20.702	0.139	1.6	16.99	-2.5
08-15-2000 14:06:32	20.714	0.129	1.1	15.57	-2.5
08-15-2000 14:07:33	24.960*	59.026*	1768.8*	101.52*	1765.6*
08-15-2000 14:08:34	28.481*	35.464*	7072.4*	101.15*	4123.2*
08-15-2000 14:09:33	24.160*	12.020*	2357.9*	100.31*	2944.4*
08-15-2000 14:10:33	20.509	0.422	12.6	16.07	-2.6
08-15-2000 14:11:33	20.558	0.229	4.2	10.75	-2.6
08-15-2000 14:12:33	20.654	0.144	1.0	15.57	-2.6
08-15-2000 14:13:33	20.694	0.129	0.8	18.28	-2.6
08-15-2000 14:14:33	20.678	0.146	7.5	15.81	-2.6
08-15-2000 14:15:33	20.700	0.110	4.2	14.08	-2.6
08-15-2000 14:16:33	20.729	0.086	2.4	13.61	-2.6
08-15-2000 14:17:33	20.741	0.070	16.2	12.83	-2.6
08-15-2000 14:18:34	20.764	0.056	8.1	11.72	-2.6
08-15-2000 14:19:34	20.772	0.041	4.0	10.64	-2.6
08-15-2000 14:20:34	20.755	0.014	3.6	3.39	-2.5
08-15-2000 14:21:34	20.751	0.007	2.1	2.59	-2.5
08-15-2000 14:22:34	20.752	0.004	1.8	2.52	-2.5
08-15-2000 14:23:34	20.754	-0.001	1.2	2.61	-2.5
08-15-2000 14:24:34	20.753	-0.002	1.2	2.67	-2.6
08-15-2000 14:25:34	20.753	-0.002	1.4	2.54	-2.6
08-15-2000 14:26:34	20.752	-0.002	1.4	2.73	-2.6
08-15-2000 14:27:34	20.750	-0.002	1.4	3.26	-2.6
08-15-2000 14:28:34	20.748	-0.003	2.3	3.26	-2.6
08-15-2000 14:29:34	20.747	-0.003	2.6	2.92	-2.6
08-15-2000 14:30:34	20.747	-0.003	2.5	2.81	-2.6
08-15-2000 14:31:32	20.748	-0.003	2.3	2.88	-2.6
08-15-2000 14:32:32	20.753	-0.009	2.0	2.76	-2.6
08-15-2000 14:33:32	20.754	-0.010	2.4	2.71	-2.7
08-15-2000 14:34:32	20.756	-0.011	3.2	2.65	-2.7
08-15-2000 14:35:32	20.755	-0.012	3.4	2.64	-2.7
08-15-2000 14:36:32	20.753	-0.011	3.9	2.69	-2.7
08-15-2000 14:37:32	20.754	-0.011	3.8	2.83	-2.6
08-15-2000 14:38:32	20.752	-0.011	3.1	2.98	-2.6
08-15-2000 14:39:32	20.755	-0.011	2.8	2.90	-2.6
08-15-2000 14:40:33	20.757	-0.011	3.5	2.79	-2.6
08-15-2000 14:41:33	20.759	-0.011	2.7	2.79	-2.6
08-15-2000 14:42:33	20.761	-0.011	3.3	2.67	-2.6

Test Run 2 STRATA Version 1.2.1

		O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
08-15-2000	16:21:33	23.783*	12.823*	1269.5*	46.62*	1906.6*
08-15-2000	16:22:33	20.708	0.164	-3.9	15.19	-3.1
08-15-2000	16:23:33	20.679	0.176	-4.4	15.71	-3.1
08-15-2000	16:24:33	20.708	0.151	-4.4	14.22	-3.1
08-15-2000	16:25:33	20.707	0.143	-3.9	14.92	-3.1
08-15-2000	16:26:33	20.648	0.138	-3.8	49.66	-3.0
08-15-2000	16:27:33	20.692	0.125	-4.9	15.38	-3.0
08-15-2000	16:28:33	20.753	0.080	-5.6	15.25	-2.9
08-15-2000	16:29:34	20.761	0.077	-5.8	15.32	-2.9
08-15-2000	16:30:34	20.757	0.089	-5.4	16.71	-2.9
08-15-2000	16:31:34	20.674	0.190	-5.3	41.98	-2.9
08-15-2000	16:32:34	20.682	0.164	-4.9	47.66	-2.9
08-15-2000	16:33:34	20.763	0.083	-4.4	19.89	-2.8
08-15-2000	16:34:32	20.776	0.076	-4.4	13.72	-2.8
08-15-2000	16:35:32	20.771	0.071	-5.0	14.21	-2.8
08-15-2000	16:36:32	20.716	0.094	2.3	23.88	-2.8
08-15-2000	16:37:32	20.753	0.072	-3.0	13.05	-2.8
08-15-2000	16:38:33	20.772	0.064	-3.9	12.43	-2.8
08-15-2000	16:39:33	20.770	0.062	17.1	13.65	-2.8
08-15-2000	16:40:33	20.795	0.054	2.2	12.29	-2.8
08-15-2000	16:41:34	20.802	0.043	-2.8	12.01	-2.8
08-15-2000	16:42:34	20.805	0.035	-3.7	11.58	-2.8
08-15-2000	16:43:34	20.803	0.026	-4.6	11.02	-2.9
08-15-2000	16:44:32	20.811	0.006	-4.1	8.78	-2.9
08-15-2000	16:45:32	20.817	0.006	-3.9	9.81	-2.9
08-15-2000	16:46:32	20.760	0.079	-4.1	25.64	-2.9
08-15-2000	16:47:32	20.428	0.471	62.9	27.83	-2.9
08-15-2000	16:48:32	20.536	0.263	147.9	8.78	-3.0
08-15-2000	16:49:32	20.607	0.219	161.9	8.61	-3.0
08-15-2000	16:50:33	20.576	0.263	127.6	10.81	-3.0
08-15-2000	16:51:33	20.477	0.339	31.9	10.21	-3.0
08-15-2000	16:52:33	20.504	0.340	25.7	7.72	-3.0
08-15-2000	16:53:33	20.463	0.394	54.5	6.84	-3.0
08-15-2000	16:54:33	20.479	0.373	104.7	6.09	-3.0
08-15-2000	16:55:33	20.448	0.405	122.9	6.13	-3.0
08-15-2000	16:56:33	20.407	0.449	212.6	5.74	-3.0
08-15-2000	16:57:33	20.418	0.462	391.4	6.38	-3.0
08-15-2000	16:58:33	20.374	0.498	513.7	5.80	-3.0
08-15-2000	16:59:33	20.343	0.546	539.1	5.53	-3.1
08-15-2000	17:00:33	20.371	0.581	413.9	5.76	-3.1
08-15-2000	17:01:33	20.337	0.645	263.7	10.00	-3.1
08-15-2000	17:02:33	20.375	0.562	148.0	15.06	-3.1
08-15-2000	17:03:33	20.447	0.369	59.2	13.96	-3.1
08-15-2000	17:04:34	20.609	0.208	7.2	13.23	-3.1
08-15-2000	17:05:34	20.529	0.276	1.4	32.69	-3.1
08-15-2000	17:06:34	20.523	0.289	1.3	34.40	-3.2
08-15-2000	17:07:34	20.462	0.374	153.5	20.67	-3.2
08-15-2000	17:08:34	20.509	0.303	191.5	8.21	-3.1
08-15-2000	17:09:34	20.505	0.324	183.2	7.22	-3.1

Test Run 2 STRATA Version 1.2.1

Run Averages

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
08-15-2000 17:54:38	20.720*	1.003*	184.5*	11.66*	63.6*

Operator: Peter Hilty

Plant Name: Newport Steel

Location: EAF Exhaust/Baghouse Inlet

Test Run 2 End

Final System Bias Check, Run 2 STRATA Version 1.2.1

Operator: Peter Hilty
 Plant Name: Newport Steel
 Location: EAF Exhaust/Baghouse Inlet

Reference Cylinder Numbers

	Zero	Span
O2	N2	Air
CO2	N2	CC84981
CO	N2	CC113985
NOx	N2	CC118512
SO2	N2	CC5784

Date/Time	08-15-2000		18:15:26		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00	0.0
Zero Cal	0.022	-0.267	-5.5	0.81	0.3
Zero Avg	-0.104	-0.101	-4.2	2.67	-3.3
Zero Bias%	0.5%	0.8%	0.1%	0.7%	0.4%
Zero Drift%	-0.1%	1.0%	0.6%	0.4%	-0.1%
Span Ref Cyl	20.900	8.000	50.0	50.50	400.0
Span Cal	20.896	8.016	46.1	50.15	393.3
Span Avg	20.769	7.918	46.2	50.22	390.3
Span Bias%	0.5%	0.5%	0.0%	0.0%	0.3%
Span Drift%	-0.2%	-0.4%	0.7%	-0.5%	-0.9%
Ini Zero Avg	-0.086	-0.301	-10.0	1.77	-1.9
Ini Span Avg	20.824	7.992	39.5	51.43	399.0
Run Avg	20.720	1.003	184.5	11.66	63.6
Co	-0.095	-0.201	-7.1	2.22	-2.6
Cm	20.796	7.955	42.8	50.83	394.7
Correct Avg	20.823	1.181	191.8	9.81	66.7
System Bias Check End					

Final System Bias Check for Run 3
Operator: Peter Hilty
Plant Name: Newport Steel
Location: EAF Exhaust/Baghouse Inlet

Date/Time	8/16/00 12:07:23 PASSED			
Analyte	O2	CO2	CO	NOx
Units	%	%	ppm	ppm
Zero Ref Cyl	0	0	0	0
Zero Cal	-0.037	0.005	0.1	-1.24
Zero Avg	-0.254	0.016	2.2	-0.79
Zero Bias%	0.9	0.1	0.2	0.2
Zero Drift%				
Span Ref Cyl	20.9	8	50	50.5
Span Cal	20.893	8	50.1	48.88
Span Avg	20.864	7.971	52.8	49.85
Span Bias%	0.1	0.1	0.3	0.4
Span Drift%				

8/15/00 15:34:33	20.518	0.255	235.9	5.78	-3
8/15/00 15:35:33	20.537	0.222	200	5.69	-3
8/15/00 15:36:33	20.518	0.251	225.4	5.83	-3
8/15/00 15:37:33	20.524	0.243	197.5	5.81	-3
8/15/00 15:38:33	20.547	0.205	159.1	5.33	-3
8/15/00 15:40:32	20.479	0.286	239.6	5.72	-3.3
8/15/00 15:41:32	20.404	0.372	174.5	6.27	-3
8/15/00 15:42:32	20.293	0.465	48.8	7.24	-3
8/15/00 15:43:33	20.349	0.407	56.6	6.29	-3
8/15/00 15:44:33	20.431	0.361	190.9	5.34	-3
8/15/00 15:45:33	20.447	0.344	775	4.9	-3.1
8/15/00 15:46:33	20.381	0.419	1148.7	4.74	-3.1
8/15/00 15:47:33	20.346	0.483	1195.7	4.93	-3.1
8/15/00 15:48:33	20.26	0.586	841.3	4.89	-3.1
8/15/00 15:49:33	20.239	0.55	729	5.75	-3.1
8/15/00 15:50:33	20.328	0.506	588.9	4.65	-3.1
8/15/00 15:51:33	20.309	0.58	799.8	4.03	-3.1
8/15/00 15:52:34	20.316	0.554	811.7	4.44	-3.1
8/15/00 15:53:34	20.307	0.64	388.7	3.94	-3.1
8/15/00 15:54:34	20.224	0.67	341.1	3	-3.1
8/15/00 15:55:34	20.243	0.669	260.4	3.06	-3.1
8/15/00 15:56:34	20.26	0.622	232.8	3.33	-3.1
8/15/00 15:57:34	20.281	0.616	196.1	3.44	-3.1
8/15/00 15:58:34	20.284	0.615	212.2	3.39	-3.2
8/15/00 15:59:34	20.539	0.241	54.8	15.1	-3.1
8/15/00 16:00:32	20.639	0.165	21.1	15.72	-3.1
8/15/00 16:01:32	20.669	0.139	14.1	15.36	-3.1
8/15/00 16:02:32	20.645	0.203	11.3	20.75	-3.1
8/15/00 16:03:32	20.509	0.334	10.4	32.89	-3.1
8/15/00 16:04:32	20.461	0.454	20	14.04	-3.1
8/15/00 16:05:33	20.313	0.74	138.8	6.35	-3.1
8/15/00 16:06:33	20.25	0.746	156.1	4.7	-3.1
8/15/00 16:07:33	20.357	0.592	57.5	10.09	-3.1
8/15/00 16:08:33	20.394	0.553	32.4	13.15	-3.1
8/15/00 16:09:33	20.448	0.44	19.8	16.82	-3.2
8/15/00 16:10:33	20.573	0.269	15.7	24.45	-3.2
8/15/00 16:11:33	20.564	0.276	11.2	22.45	-3.2
8/15/00 16:12:33	20.534	0.313	8.8	19.22	-3.2
8/15/00 16:13:33	20.5	0.37	14.6	14.43	-3.2
8/15/00 16:14:33	20.502	0.37	10.7	16.24	-3.2
8/15/00 16:15:34	20.523	0.329	6	17.74	-3.2
8/15/00 16:16:34	20.591	0.24	2.3	39.01	-3.2
8/15/00 16:17:34	20.587	0.213	-1.3	30.47	-3.2
8/15/00 16:18:34	20.678	0.154	-1.7	22.09	-3.2
8/15/00 16:19:34	20.71	0.122	-2.9	18.33	-3.2
8/15/00 16:20:34	20.716	0.11	-3.5	16.73	-3.2
8/15/00 16:22:33	20.708	0.164	-3.9	15.19	-3.1
8/15/00 16:23:33	20.679	0.176	-4.4	15.71	-3.1
8/15/00 16:24:33	20.708	0.151	-4.4	14.22	-3.1
8/15/00 16:25:33	20.707	0.143	-3.9	14.92	-3.1

8/15/00 16:26:33	20.648	0.138	-3.8	49.66	-3
8/15/00 16:27:33	20.692	0.125	-4.9	15.38	-3
8/15/00 16:28:33	20.753	0.08	-5.6	15.25	-2.9
8/15/00 16:29:34	20.761	0.077	-5.8	15.32	-2.9
8/15/00 16:30:34	20.757	0.089	-5.4	16.71	-2.9
8/15/00 16:31:34	20.674	0.19	-5.3	41.98	-2.9
8/15/00 16:32:34	20.682	0.164	-4.9	47.66	-2.9
8/15/00 16:33:34	20.763	0.083	-4.4	19.89	-2.8
8/15/00 16:34:32	20.776	0.076	-4.4	13.72	-2.8
8/15/00 16:35:32	20.771	0.071	-5	14.21	-2.8
8/15/00 16:36:32	20.716	0.094	2.3	23.88	-2.8
8/15/00 16:37:32	20.753	0.072	-3	13.05	-2.8
8/15/00 16:38:33	20.772	0.064	-3.9	12.43	-2.8
8/15/00 16:39:33	20.77	0.062	17.1	13.65	-2.8
8/15/00 16:40:33	20.795	0.054	2.2	12.29	-2.8
8/15/00 16:41:34	20.802	0.043	-2.8	12.01	-2.8
8/15/00 16:42:34	20.805	0.035	-3.7	11.58	-2.8
8/15/00 16:43:34	20.803	0.026	-4.6	11.02	-2.9
8/15/00 16:44:32	20.811	0.006	-4.1	8.78	-2.9
8/15/00 16:45:32	20.817	0.006	-3.9	9.81	-2.9
8/15/00 16:46:32	20.76	0.079	-4.1	25.64	-2.9
8/15/00 16:47:32	20.428	0.471	62.9	27.83	-2.9
8/15/00 16:48:32	20.536	0.263	147.9	8.78	-3
8/15/00 16:49:32	20.607	0.219	161.9	8.61	-3
8/15/00 16:50:33	20.576	0.263	127.6	10.81	-3
8/15/00 16:51:33	20.477	0.339	31.9	10.21	-3
8/15/00 16:52:33	20.504	0.34	25.7	7.72	-3
8/15/00 16:53:33	20.463	0.394	54.5	6.84	-3
8/15/00 16:54:33	20.479	0.373	104.7	6.09	-3
8/15/00 16:55:33	20.448	0.405	122.9	6.13	-3
8/15/00 16:56:33	20.407	0.449	212.6	5.74	-3
8/15/00 16:57:33	20.418	0.462	391.4	6.38	-3
8/15/00 16:58:33	20.374	0.498	513.7	5.8	-3
8/15/00 16:59:33	20.343	0.546	539.1	5.53	-3.1
8/15/00 17:00:33	20.371	0.581	413.9	5.76	-3.1
8/15/00 17:01:33	20.337	0.645	263.7	10	-3.1
8/15/00 17:02:33	20.375	0.562	148	15.06	-3.1
8/15/00 17:03:33	20.447	0.369	59.2	13.96	-3.1
8/15/00 17:04:34	20.609	0.208	7.2	13.23	-3.1
8/15/00 17:05:34	20.529	0.276	1.4	32.69	-3.1
8/15/00 17:06:34	20.523	0.289	1.3	34.4	-3.2
8/15/00 17:07:34	20.462	0.374	153.5	20.67	-3.2
8/15/00 17:08:34	20.509	0.303	191.5	8.21	-3.1
8/15/00 17:09:34	20.505	0.324	183.2	7.22	-3.1
8/15/00 17:11:33	20.384	0.43	21.2	7.86	-3.1
8/15/00 17:12:33	20.418	0.402	22.9	7.46	-3.1
8/15/00 17:13:33	20.454	0.405	98.4	7.37	-3.1
8/15/00 17:14:34	20.441	0.429	198	7.36	-3.2
8/15/00 17:15:34	20.392	0.474	290.4	6.38	-3.2
8/15/00 17:16:34	20.378	0.484	337.7	5.57	-3.3

(8/15/00 17:17:34	20.348	0.51	239.3	5.58	-3.3
8/15/00 17:18:34	20.355	0.507	255.3	5.73	-3.3
8/15/00 17:19:34	20.333	0.527	241	6.11	-3.3
8/15/00 17:20:34	20.37	0.481	393.5	5.4	-3.3
8/15/00 17:21:34	20.414	0.43	291.8	4.32	-3.3
8/15/00 17:22:32	20.476	0.37	155.1	4.33	-3.3
8/15/00 17:23:32	20.484	0.344	108.1	4.02	-3.3
8/15/00 17:24:32	20.532	0.335	36.2	4.5	-3.3
8/15/00 17:25:32	20.501	0.406	26	4.58	-3.2
8/15/00 17:26:32	20.475	0.461	36.1	4.26	-3.2
8/15/00 17:27:32	20.499	0.368	9.5	5.33	-3.2
8/15/00 17:28:32	20.582	0.241	-2.1	8.22	-3.2
8/15/00 17:29:33	20.662	0.156	-6.8	10.98	-3.2
8/15/00 17:30:33	20.687	0.138	-6.8	10.41	-3.2
8/15/00 17:31:33	20.7	0.119	-10.6	9.75	-3.2
8/15/00 17:32:33	20.716	0.106	-7.1	9.56	-3.2
8/15/00 17:33:33	20.721	0.102	-6.9	9.45	-3.2
8/15/00 17:34:33	20.721	0.099	-6.5	9.25	-3.2
8/15/00 17:35:33	20.724	0.093	-6.4	9.06	-3.2
8/15/00 17:36:33	20.726	0.089	-5.9	9.13	-3.2
8/15/00 17:37:33	20.726	0.087	-6.2	9.28	-3.2
8/15/00 17:38:33	20.702	0.124	-6.7	14.05	-3.2
8/15/00 17:39:33	20.58	0.281	-4.2	19.04	-3.2
8/15/00 17:40:33	20.5	0.474	8.6	7.37	-3.2
8/15/00 17:41:33	20.429	0.548	23.3	6.89	-3.2
8/15/00 17:42:33	20.518	0.393	0.2	9.77	-3.2
8/15/00 17:43:33	20.536	0.367	-2.7	11.42	-3.2
8/15/00 17:44:33	20.517	0.415	-4	12.25	-3.2
8/15/00 17:45:33	20.551	0.357	-5.1	13.58	-3.1
8/15/00 17:46:33	20.554	0.357	-3.6	17.04	-3.1
8/15/00 17:47:33	20.537	0.355	-2.6	15.46	-3.1
8/15/00 17:48:33	20.593	0.293	-7.1	17.57	-3.1
8/15/00 17:49:34	20.631	0.229	-7.1	16.94	-3.1
8/15/00 17:50:34	20.64	0.202	-6.1	16.31	-3.1
8/15/00 17:51:34	20.64	0.225	-5.6	16.46	-3.1
8/15/00 17:52:34	20.62	0.255	-4.7	15.76	-3.2
8/15/00 17:53:34	20.556	0.315	1.5	16.78	-3.2
8/15/00 17:54:34	20.518	0.357	-0.3	25.06	-3.2

Average of Test Run	O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
8/15/00 17:54:34	20.58	0.24	89.10	10.05	-2.93
Test Run 2 End					

Final System Bias Check for Run 2
Operator: Peter Hilty
Plant Name: Newport Steel
Location: EAF Exhaust/Baghouse Inlet

Date/Time	8/15/00 18:15:26 PASSED					
Analyte	O2	CO2	CO	NOx	SO2	
Units	%	%	ppm	ppm	ppm	
Zero Ref Cyl	0	0	0	0	0	0
Zero Cal	0.022	-0.267	-5.5	0.81	0.3	
Zero Avg	-0.104	-0.101	-4.2	2.67	-3.3	
Zero Bias%	0.5	0.8	0.1	0.7	0.4	
Zero Drift%	-0.1	1	0.6	0.4	-0.1	
Span Ref Cyl	20.9	8	50	50.5	400	
Span Cal	20.896	8.016	46.1	50.15	393.3	
Span Avg	20.769	7.918	46.2	50.22	390.3	
Span Bias%	0.5	0.5	0	0	0.3	
Span Drift%	-0.2	-0.4	0.7	-0.5	-0.9	
Ini Zero Avg	-0.086	-0.301	-10	1.77	-1.9	
Ini Span Avg	20.824	7.992	39.5	51.43	399	
Run Avg	20.72	1.003	184.5	11.66	63.6	
Co	-0.095	-0.201	-7.1	2.22	-2.6	
Cm	20.796	7.955	42.8	50.83	394.7	
Correct Avg	20.823	1.181	191.8	9.81	66.7	

8/15/00 14:44:34	20.761	-0.012	2.9	2.9	-2.7
8/15/00 14:45:34	20.76	-0.012	3	2.65	-2.7
8/15/00 14:46:34	20.759	-0.013	3.3	2.66	-2.7
8/15/00 14:47:32	20.76	-0.013	2.8	3.01	-2.7
8/15/00 14:48:32	20.755	-0.002	5.1	3.17	-2.8
8/15/00 14:49:32	20.619	0.155	75.4	3.72	-2.8
8/15/00 14:50:32	20.697	0.036	71.7	3.33	-2.8
8/15/00 14:51:32	20.734	0.013	36.7	3.11	-2.8
8/15/00 14:52:32	20.743	0.005	24.3	2.73	-2.8
8/15/00 14:53:32	20.746	0.009	21.1	2.66	-2.8
8/15/00 14:54:32	20.592	0.141	49.4	12.48	-2.8
8/15/00 14:55:33	20.539	0.163	134.2	4.66	-2.8
8/15/00 14:56:33	20.499	0.211	123.2	3.91	-2.8
8/15/00 14:57:33	20.472	0.233	101.8	4.05	-2.8
8/15/00 14:58:33	20.478	0.233	86.3	4.31	-2.8
8/15/00 14:59:33	20.436	0.277	109.9	3.6	-2.8
8/15/00 15:00:33	20.43	0.285	105.7	3.41	-2.8
8/15/00 15:01:33	20.435	0.274	88.2	3.52	-2.8
8/15/00 15:02:33	20.401	0.338	92.6	3.89	-2.9
8/15/00 15:03:33	20.426	0.311	103.3	4.24	-2.8
8/15/00 15:04:33	20.431	0.317	102.8	5.31	-2.8
8/15/00 15:05:33	20.439	0.32	138.9	4.29	-2.7
8/15/00 15:06:33	20.438	0.311	150.8	3.5	-2.7
8/15/00 15:07:33	20.433	0.355	174.3	3.71	-2.7
8/15/00 15:08:34	20.436	0.316	105.3	3.92	-2.9
8/15/00 15:09:34	20.522	0.251	59.6	3.95	-2.7
8/15/00 15:10:34	20.593	0.228	47.1	6.43	-2.7
8/15/00 15:11:34	20.49	0.323	87.6	5.06	-2.8
8/15/00 15:12:34	20.37	0.448	123	3.38	-2.8
8/15/00 15:13:34	20.506	0.255	29.8	3.83	-2.8
8/15/00 15:14:34	20.644	0.163	0.4	4.88	-2.8
8/15/00 15:15:34	20.664	0.142	1.3	5.29	-2.8
8/15/00 15:16:34	20.654	0.126	1.1	5.35	-2.9
8/15/00 15:17:34	20.689	0.123	0.3	5.48	-2.8
8/15/00 15:18:32	20.689	0.121	3.3	5.63	-2.8
8/15/00 15:19:32	20.698	0.099	10.8	5.7	-2.8
8/15/00 15:20:32	20.629	0.176	17	8.76	-2.8
8/15/00 15:21:32	20.657	0.143	18.9	8.14	-2.8
8/15/00 15:22:32	20.662	0.127	16.9	7.32	-2.8
8/15/00 15:23:33	20.667	0.12	17.4	7.42	-2.8
8/15/00 15:24:33	20.662	0.137	18.9	7.8	-2.8
8/15/00 15:25:33	20.661	0.129	10.7	7.29	-2.8
8/15/00 15:26:33	20.686	0.101	6.2	6.17	-2.8
8/15/00 15:27:33	20.689	0.095	5.9	5.87	-2.8
8/15/00 15:28:33	20.644	0.147	6.7	6.81	-2.9
8/15/00 15:29:33	20.598	0.164	3.5	7	-2.9
8/15/00 15:30:33	20.584	0.199	4.2	10.55	-2.9
8/15/00 15:31:33	20.531	0.263	156.4	8.68	-2.9
8/15/00 15:32:32	20.512	0.279	220.6	4.97	-2.9
8/15/00 15:33:32	20.519	0.269	228.5	4.92	-2.9

Test Run 2 STRATA Version 1.2.1

		O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
08-15-2000 15:32:32		20.512	0.279	220.6	4.97	-2.9
08-15-2000 15:33:32		20.519	0.269	228.5	4.92	-2.9
08-15-2000 15:34:33		20.518	0.255	235.9	5.78*	-3.0
08-15-2000 15:35:33		20.537	0.222	200.0	5.69	-3.0
08-15-2000 15:36:33		20.518	0.251	225.4	5.83	-3.0
08-15-2000 15:37:33		20.524	0.243	197.5	5.81	-3.0
08-15-2000 15:38:33		20.547	0.205	159.1	5.33	-3.0
08-15-2000 15:39:32		24.080*	0.251*	2511.1*	5.68*	1765.2*
08-15-2000 15:40:32		20.479	0.286	239.6	5.72	-3.3
08-15-2000 15:41:32		20.404	0.372	174.5	6.27	-3.0
08-15-2000 15:42:32		20.293	0.465	48.8	7.24	-3.0
08-15-2000 15:43:33		20.349	0.407	56.6	6.29	-3.0
08-15-2000 15:44:33		20.431	0.361	190.9	5.34	-3.0
08-15-2000 15:45:33		20.447	0.344	775.0*	4.90	-3.1
08-15-2000 15:46:33		20.381	0.419	1148.7*	4.74	-3.1
08-15-2000 15:47:33		20.346	0.483	1195.7*	4.93	-3.1
08-15-2000 15:48:33		20.260	0.586	841.3*	4.89	-3.1
08-15-2000 15:49:33		20.239	0.550	729.0*	5.75	-3.1
08-15-2000 15:50:33		20.328	0.506	588.9	4.65	-3.1
08-15-2000 15:51:33		20.309	0.580	799.8*	4.03	-3.1
08-15-2000 15:52:34		20.316	0.554	811.7*	4.44	-3.1
08-15-2000 15:53:34		20.307	0.640	388.7	3.94	-3.1
08-15-2000 15:54:34		20.224	0.670	341.1	3.00	-3.1
08-15-2000 15:55:34		20.243	0.669	260.4	3.06	-3.1
08-15-2000 15:56:34		20.260	0.622	232.8	3.33	-3.1
08-15-2000 15:57:34		20.281	0.616	196.1	3.44	-3.1
08-15-2000 15:58:34		20.284	0.615	212.2	3.39	-3.2
08-15-2000 15:59:34		20.539	0.241	54.8	15.10	-3.1
08-15-2000 16:00:32		20.639	0.165	21.1	15.72	-3.1
08-15-2000 16:01:32		20.669	0.139	14.1	15.36	-3.1
08-15-2000 16:02:32		20.645	0.203	11.3	20.75	-3.1
08-15-2000 16:03:32		20.509	0.334	10.4	32.89	-3.1
08-15-2000 16:04:32		20.461	0.454	20.0	14.04	-3.1
08-15-2000 16:05:33		20.313	0.740	138.8	6.35	-3.1
08-15-2000 16:06:33		20.250	0.746	156.1	4.70	-3.1
08-15-2000 16:07:33		20.357	0.592	57.5	10.09	-3.1
08-15-2000 16:08:33		20.394	0.553	32.4	13.15	-3.1
08-15-2000 16:09:33		20.448	0.440	19.8	16.82	-3.2
08-15-2000 16:10:33		20.573	0.269	15.7	24.45	-3.2
08-15-2000 16:11:33		20.564	0.276	11.2	22.45	-3.2
08-15-2000 16:12:33		20.534	0.313	8.8	19.22	-3.2
08-15-2000 16:13:33		20.500	0.370	14.6	14.43	-3.2
08-15-2000 16:14:33		20.502	0.370	10.7	16.24	-3.2
08-15-2000 16:15:34		20.523	0.329	6.0	17.74	-3.2
08-15-2000 16:16:34		20.591	0.240	2.3	39.01	-3.2
08-15-2000 16:17:34		20.587	0.213	-1.3	30.47	-3.2
08-15-2000 16:18:34		20.678	0.154	-1.7	22.09	-3.2
08-15-2000 16:19:34		20.710	0.122	-2.9	18.33	-3.2
08-15-2000 16:20:34		20.716	0.110	-3.5	16.73	-3.2

Test Run 4 Begin. STRATA Version 1.2.1

Operator: Peter Hilty

Plant Name: Newport Steel

Location: EAF Exhaust/Baghouse Inlet

	O2 %	CO2 %	CO ppm	NOx ppm
Begin calculating run averages				
8/16/00 13:09:43	20.451	0.51	411.5	3.68
8/16/00 13:10:43	20.445	0.503	304.4	2.64
8/16/00 13:11:42	20.476	0.558	332.2	4
8/16/00 13:12:43	20.521	0.595	348.8	4.18
8/16/00 13:13:43	20.514	0.621	484.2	3.9
8/16/00 13:14:42	20.513	0.56	338.9	3.66
8/16/00 13:15:43	20.45	0.694	241.5	1.88
8/16/00 13:16:44	20.248	0.906	217.8	1.96
8/16/00 13:17:43	20.222	0.916	234.5	2.46
8/16/00 13:18:42	20.288	0.784	237.3	4.7
8/16/00 13:19:43	20.181	0.865	262.8	6.36
8/16/00 13:20:43	20.168	0.784	237.6	6.34
8/16/00 13:21:42	20.424	0.498	182	12.9
8/16/00 13:22:43	20.418	0.609	129.1	9.94
8/16/00 13:23:43	20.122	0.978	196.3	3.34
8/16/00 13:24:42	20.167	0.892	261	4.18
8/16/00 13:25:43	20.22	0.831	300.2	3.94
8/16/00 13:26:43	20.145	0.95	257.9	4.22
8/16/00 13:27:42	20.24	0.805	245.8	4.5
8/16/00 13:28:43	20.336	0.769	208.1	4.72
8/16/00 13:29:44	20.332	0.765	175.2	4.68
8/16/00 13:30:42	20.39	0.685	173.8	4.38
8/16/00 13:31:43	20.331	0.788	146.2	7.32
8/16/00 13:32:44	20.573	0.58	106.4	11.48
8/16/00 13:33:42	20.669	0.4	57.6	17.1
8/16/00 13:34:43	20.746	0.283	34.3	34.18
8/16/00 13:35:43	20.798	0.221	21.2	28.04
8/16/00 13:36:42	20.788	0.228	21.6	23.7
8/16/00 13:37:43	20.771	0.206	20.1	23.64
8/16/00 13:38:44	20.802	0.188	31.3	23.78
8/16/00 13:39:42	20.825	0.171	22.9	22.04
8/16/00 13:40:43	20.86	0.143	14.3	19.72
8/16/00 13:41:43	20.883	0.129	10.6	18.9
8/16/00 13:42:44	20.871	0.12	8.9	20.84
8/16/00 13:43:42	20.89	0.098	9.1	18.9
8/16/00 13:44:43	20.904	0.084	10	16.56
8/16/00 13:45:44	20.91	0.087	11.3	18.92
8/16/00 13:46:42	20.91	0.089	13.7	19.68
8/16/00 13:47:43	20.913	0.089	15.1	19.66

8/16/00 13:48:44	20.91	0.089	14.2	19.26
8/16/00 13:49:42	20.906	0.088	14.1	18.9
8/16/00 13:50:43	20.861	0.167	33.1	18.84
8/16/00 13:51:44	20.396	0.614	108.7	23.64
8/16/00 13:52:42	20.505	0.47	91.2	13.02
8/16/00 13:53:43	20.646	0.324	64.9	8.5
8/16/00 13:54:43	20.527	0.415	95.9	7.84
8/16/00 13:55:42	20.491	0.453	50.1	6.74
8/16/00 13:56:43	20.513	0.429	72.6	6.24
8/16/00 13:57:43	20.501	0.436	141.5	5.74
8/16/00 13:58:42	20.474	0.466	170.7	5.42
8/16/00 13:59:43	20.467	0.477	155.4	5.3
8/16/00 14:00:43	20.428	0.518	137.6	3.66
8/16/00 14:01:42	20.387	0.538	108.9	4.38
8/16/00 14:02:43	20.399	0.534	145.7	4.82
8/16/00 14:03:43	20.414	0.586	168.6	4.16
8/16/00 14:04:42	20.385	0.61	150.3	3.3
8/16/00 14:05:43	20.397	0.585	143.6	3.38
8/16/00 14:06:43	20.412	0.535	124.3	3.16
8/16/00 14:07:42	20.444	0.489	105.2	3.14
8/16/00 14:08:43	20.465	0.464	107.4	2.48
8/16/00 14:09:43	20.468	0.466	116.4	2.02
8/16/00 14:10:42	20.572	0.34	43.3	14.32
8/16/00 14:11:43	20.714	0.218	9.9	15
8/16/00 14:12:43	20.762	0.162	7.3	13.58
8/16/00 14:13:42	20.754	0.228	27.5	13.82
8/16/00 14:14:43	20.536	0.449	73.5	9.48
8/16/00 14:15:44	20.522	0.475	59.3	8.48
8/16/00 14:16:43	20.423	0.525	22.1	8.72
8/16/00 14:17:43	20.482	0.465	16.1	9.52
8/16/00 14:18:42	20.491	0.473	45.1	9.2
8/16/00 14:19:43	20.531	0.477	148.4	7.96
8/16/00 14:20:42	20.536	0.478	222.6	6.64
8/16/00 14:21:42	20.483	0.517	281.9	6.52
8/16/00 14:22:44	20.386	0.588	182.7	5.98
8/16/00 14:23:43	20.407	0.523	234.1	5.62
8/16/00 14:24:43	20.448	0.51	299.8	4.84
8/16/00 14:25:43	20.471	0.533	268.3	4.6
8/16/00 14:26:43	20.502	0.469	167.7	6.32
8/16/00 14:27:43	20.535	0.467	158.2	13.52
8/16/00 14:28:43	20.553	0.472	101.7	11.3
8/16/00 14:29:43	20.601	0.409	22.5	19.64
8/16/00 14:30:42	20.612	0.413	15.7	14.52
8/16/00 14:31:42	20.548	0.523	51.2	7
8/16/00 14:32:42	20.488	0.546	74.1	4.52
8/16/00 14:33:44	20.569	0.45	24	6.5

8/16/00 14:34:44	20.656	0.314	5.5	13.76
8/16/00 14:35:43	20.64	0.335	8.8	16.14
8/16/00 14:36:43	20.703	0.269	4.3	14.4
8/16/00 14:37:43	20.655	0.319	16.2	12.24
8/16/00 14:38:43	20.574	0.489	42.7	7.06
8/16/00 14:39:43	20.384	0.764	109.3	2.16
8/16/00 14:40:42	20.446	0.603	70.2	5.62
8/16/00 14:41:42	20.463	0.581	46.9	8.62
8/16/00 14:42:42	20.462	0.633	50.4	6.88
8/16/00 14:43:44	20.328	0.808	98.3	4.38
8/16/00 14:44:44	20.532	0.472	42.7	12
8/16/00 14:45:43	20.655	0.365	19	20.44
8/16/00 14:46:43	20.687	0.343	12.5	38.26
8/16/00 14:47:43	20.616	0.426	14	12.06
8/16/00 14:48:43	20.635	0.363	10.3	10.82
8/16/00 14:49:43	20.655	0.39	9.5	10.18
8/16/00 14:50:42	20.52	0.655	62.6	4.04
8/16/00 14:51:42	20.607	0.323	46.7	8.44
8/16/00 14:52:44	20.799	0.169	8	10.82
8/16/00 14:53:44	20.823	0.151	6.9	10.86
8/16/00 14:54:44	20.803	0.175	8.9	11.4
8/16/00 14:55:44	20.788	0.176	10.7	11.94
8/16/00 14:56:43	20.813	0.172	26.3	12.16
8/16/00 14:57:43	20.814	0.157	25.8	12.2
8/16/00 14:58:43	20.851	0.13	9.1	10.44
8/16/00 14:59:43	20.856	0.122	6.9	10.38
8/16/00 15:00:44	20.854	0.105	6.9	9.36
8/16/00 15:01:42	20.86	0.092	7.3	9.12
8/16/00 15:02:43	20.863	0.092	9.5	9.64
8/16/00 15:03:44	20.866	0.092	9.8	9.38
8/16/00 15:04:42	20.869	0.091	10.4	8.72
8/16/00 15:05:43	20.845	0.081	9.8	2.06
8/16/00 15:06:44	20.845	0.077	9.1	1.22
8/16/00 15:07:42	20.847	0.076	8.8	1.3
8/16/00 15:08:43	20.851	0.073	8.7	1.3
8/16/00 15:09:44	20.855	0.072	8.7	1.2
Average of Test Run	O2	CO2	CO	NOx
	%	%	ppm	ppm
8/16/00 15:10:36	20.58	0.42	99.79	9.91
Test Run 4 End				

Operator:
Plant Name:
Location:

STRATA Version 1.2.1

Peter Hilty
Newport Steel
EAF Exhaust/Baghouse Inlet

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2	N2		CC84981	Air
CO2	N2		CC84981	CC113935
CO	N2	CC113985	CC113935	CC94790
NOx	N2	CC118512	CC106973	CC79974

Date/Time	08-16-2000		15:35:41	
Analyte	O2	CO2	CO	NOx
Units	%	%	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.0	0.00
Zero Avg	-0.256	0.077	0.0	-0.16
Zero Error%	1.0%	0.4%	0.0%	0.1%
Low Ref Cyl			50.0	50.50
Low Avg			52.2	51.04
Low Error%			0.2%	0.2%
Mid Ref Cyl			100.0	89.30
Mid Avg			101.7	91.59
Mid Error%			0.2%	0.9%
High Ref Cyl	20.900	15.000	152.0	197.40
High Avg	20.790	14.983	153.0	201.88
High Error%	0.4%	0.1%	0.1%	1.8%
Calibration Error Test End				

PASSED

Initial System Bias Check, Run 5 STRATA Version 1.2.1

Operator: Peter Hilty

Plant Name: Newport Steel

Location: EAF Exhaust/Baghouse Inlet

Reference Cylinder Numbers

	Zero	Span
O2	N2	Air
CO2	N2	CC113935
CO	N2	CC113985
NOx	N2	CC106973

Date/Time	08-17-2000	07:30:14	PASSED
Analyte	O2	CO2	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.0
Zero Cal	-0.256	0.077	0.0
Zero Avg	-0.163	0.104	1.3
Zero Bias%	0.4%	0.1%	0.1%
Zero Drift%			
Span Ref Cyl	20.900	15.000	50.0
Span Cal	20.790	14.983	52.2
Span Avg	20.861	15.084	50.9
Span Bias%	0.3%	0.5%	0.1%
Span Drift%			
System Bias Check End			

[illegible]

8/15/00	10:40:42	20.584	-0.056	3	32.04	-1.9
8/15/00	10:42:42	20.594	-0.07	-0.5	12.48	-1.9
8/15/00	10:43:42	20.672	-0.114	-3.2	17.36	-1.9
8/15/00	10:44:42	20.488	-0.007	7.2	32.31	-2
8/15/00	10:45:42	20.531	0.008	2.4	9.18	-1.9
8/15/00	10:46:42	20.651	-0.091	-2.6	20.18	-1.9
8/15/00	10:47:42	20.551	0.001	-0.6	17.02	-1.9
8/15/00	10:48:42	20.507	0.126	5.7	12.08	-1.9
8/15/00	10:49:42	20.526	0.04	7.8	10.52	-1.9
8/15/00	10:50:42	20.661	-0.098	-1.6	19.6	-2
8/15/00	10:51:43	20.693	-0.128	-1.4	16.87	-2
8/15/00	10:52:43	20.707	-0.141	-1.1	14.76	-2
8/15/00	10:53:43	20.681	-0.133	2.9	14.54	-2
8/15/00	10:54:43	20.716	-0.169	0.2	13.35	-2.1
8/15/00	10:55:43	20.728	-0.182	3.7	13.45	-2.1
8/15/00	10:56:43	20.735	-0.195	3.3	12.59	-2.1
8/15/00	10:57:43	20.726	-0.239	2.7	4.55	-2.1
8/15/00	10:58:43	20.738	-0.252	2.4	2.26	-2.1
8/15/00	10:59:43	20.745	-0.257	1.9	2.39	-2.1
8/15/00	11:00:43	20.748	-0.26	2.3	2.43	-2.1
8/15/00	11:01:43	20.748	-0.263	1.8	2.48	-2.2
8/15/00	11:02:43	20.75	-0.265	1.4	2.4	-2.2
8/15/00	11:03:43	20.754	-0.267	1.3	2.33	-2.2
8/15/00	11:04:43	20.757	-0.272	1.1	2.38	-2.2
8/15/00	11:05:43	20.757	-0.274	3	2.49	-2.2
8/15/00	11:06:43	20.76	-0.275	4	2.66	-2.2
8/15/00	11:07:41	20.757	-0.276	5.2	2.89	-2.2
8/15/00	11:08:41	20.754	-0.272	5.2	3.16	-2.2
8/15/00	11:09:41	20.618	-0.096	53.5	3.88	-2.2
8/15/00	11:10:41	20.669	-0.178	51.9	6.75	-2.2
8/15/00	11:11:41	20.57	-0.09	15.4	24.71	-2.2
8/15/00	11:12:42	20.532	-0.058	43.5	4.7	-2.2
8/15/00	11:13:42	20.503	-0.036	49.2	3.97	-2.2
8/15/00	11:14:42	20.495	-0.013	47.9	4.16	-2.2
8/15/00	11:15:42	20.453	0.006	71.3	4.31	-2.3
8/15/00	11:16:42	20.421	0.029	67.1	4.29	-2.2
8/15/00	11:17:42	20.464	-0.001	69	4.37	-2.2
8/15/00	11:18:42	20.479	-0.007	42.1	4.63	-2.3
8/15/00	11:19:42	20.469	0.036	79.8	5.9	-2.3
8/15/00	11:20:42	20.478	0.045	73.9	8.48	-2.3
8/15/00	11:21:42	20.447	0.083	36.3	9.66	-2.3
8/15/00	11:22:42	20.38	0.155	26.8	13.29	-2.3
8/15/00	11:23:42	20.509	-0.028	14.5	9.43	-2.3
8/15/00	11:24:42	20.698	-0.156	2.9	4.22	-2.3
8/15/00	11:25:42	20.691	-0.168	1.2	4.02	-2.4
8/15/00	11:26:42	20.691	-0.164	5.3	3.87	-2.4
8/15/00	11:27:42	20.711	-0.163	5.1	3.76	-2.4
8/15/00	11:28:42	20.744	-0.179	5.3	3.56	-2.3
8/15/00	11:29:43	20.602	-0.007	13.6	23.26	-2.3
8/15/00	11:32:43	20.471	0.127	40.9	7.31	-2.3

8/15/00	9:49:42	20.567	0.068	21.3	21.48	-1.3
8/15/00	9:50:42	20.478	0.199	24.8	8.26	-1.3
8/15/00	9:51:42	20.352	0.307	22	7	-1.4
8/15/00	9:53:42	20.331	0.29	32.1	8.31	-1.4
8/15/00	9:54:42	20.356	0.304	31.4	7.21	-1.4
8/15/00	9:55:42	20.406	0.276	56	7.26	-1.4
8/15/00	9:56:42	20.345	0.255	159.1	6.39	-1.5
8/15/00	9:57:42	20.341	0.279	138.3	5.83	-1.5
8/15/00	9:58:42	20.349	0.257	196.2	4.76	-1.4
8/15/00	9:59:43	20.357	0.25	177.4	3.54	-1.4
8/15/00	10:00:43	20.372	0.295	246.6	3.86	-1.5
8/15/00	10:01:43	20.367	0.277	233.3	3.22	-1.5
8/15/00	10:02:43	20.381	0.285	133.6	3.41	-1.5
8/15/00	10:03:43	20.205	0.508	142.6	2.56	-1.5
8/15/00	10:04:43	20.195	0.507	135.6	2.53	-1.5
8/15/00	10:05:43	20.233	0.514	101.2	2.7	-1.5
8/15/00	10:06:43	20.196	0.593	100.6	2.98	-1.6
8/15/00	10:07:43	20.227	0.492	109.4	4.95	-1.6
8/15/00	10:08:43	20.344	0.34	82	9.01	-1.6
8/15/00	10:09:43	20.381	0.29	85.7	7.66	-1.6
8/15/00	10:10:43	20.421	0.173	21	13.9	-1.6
8/15/00	10:11:43	20.511	0.07	2.5	20.13	-1.6
8/15/00	10:12:43	20.528	0.078	5.2	21.86	-1.6
8/15/00	10:13:43	20.403	0.201	35.7	10.57	-1.7
8/15/00	10:14:43	20.416	0.215	19.2	8.38	-1.7
8/15/00	10:15:41	20.408	0.227	17.8	10.46	-1.7
8/15/00	10:16:41	20.406	0.246	18.8	11.09	-1.7
8/15/00	10:17:41	20.393	0.275	16.5	9.85	-1.7
8/15/00	10:18:41	20.36	0.339	34.8	7.05	-1.7
8/15/00	10:19:41	20.389	0.295	23.6	6.21	-1.7
8/15/00	10:20:41	20.323	0.364	47.5	5.73	-1.7
8/15/00	10:21:42	20.395	0.176	14.8	7.15	-1.7
8/15/00	10:22:42	20.558	-0.024	-0.4	16.46	-1.8
8/15/00	10:23:42	20.612	-0.026	-0.7	14.33	-1.7
8/15/00	10:24:42	20.597	-0.02	-0.2	13.96	-1.7
8/15/00	10:25:42	20.485	0.069	6.6	18.15	-1.7
8/15/00	10:26:42	20.566	-0.023	0.3	16.16	-1.7
8/15/00	10:27:42	20.657	-0.094	-0.7	15.55	-1.7
8/15/00	10:28:43	20.679	-0.119	-1.6	13.09	-1.7
8/15/00	10:29:43	20.691	-0.113	-1.9	12.59	-1.7
8/15/00	10:30:42	20.608	0.008	-2.3	9.75	-1.7
8/15/00	10:31:43	20.606	0.004	-2.9	9.87	-1.8
8/15/00	10:32:43	20.605	0.017	-2.4	9.48	-1.8
8/15/00	10:33:43	20.625	-0.046	-2.7	10.79	-1.8
8/15/00	10:34:43	20.684	-0.127	-2.6	12.94	-1.8
8/15/00	10:35:43	20.635	-0.039	-2.8	8.51	-1.8
8/15/00	10:36:43	20.633	-0.038	-3.5	7.98	-1.8
8/15/00	10:37:43	20.665	-0.09	-3	10.06	-1.8
8/15/00	10:38:41	20.644	-0.057	-3.6	8.92	-1.8
8/15/00	10:39:42	20.647	-0.074	-3	9.28	-1.9

8/15/00	8:58:43	20.7	-0.082	3.5	13.03	-0.7
8/15/00	8:59:43	20.72	-0.103	2.3	14.21	-0.7
8/15/00	9:00:43	20.737	-0.116	1.4	13.81	-0.7
8/15/00	9:01:43	20.668	-0.045	1.5	26.44	-0.7
8/15/00	9:02:43	20.617	0.064	6.2	18.29	-0.7
8/15/00	9:03:42	20.606	0.056	4.2	15.4	-0.7
8/15/00	9:04:42	20.708	-0.035	1.6	22.29	-0.7
8/15/00	9:05:42	20.73	-0.062	1.5	19.33	-0.7
8/15/00	9:06:42	20.741	-0.071	1.5	17.88	-0.8
8/15/00	9:07:42	20.735	-0.057	1.8	17.41	-0.7
8/15/00	9:08:42	20.715	-0.045	1.7	14.98	-0.7
8/15/00	9:09:42	20.657	0.025	1.3	12.65	-0.7
8/15/00	9:10:42	20.533	0.365	15.3	12.62	-0.8
8/15/00	9:11:42	20.024	1.195	163.6	6.38	-0.8
8/15/00	9:13:42	20.688	-0.062	11.5	23.24	-0.8
8/15/00	9:14:42	20.675	-0.039	5.6	24.52	-0.8
8/15/00	9:15:42	20.675	-0.057	4	21.51	-0.9
8/15/00	9:16:42	20.704	-0.066	7.3	20.38	-0.8
8/15/00	9:17:42	20.7	-0.102	10.6	15.56	-0.8
8/15/00	9:18:42	20.75	-0.145	3	13.54	-0.8
8/15/00	9:19:43	20.748	-0.135	29.4	14.59	-0.8
8/15/00	9:20:43	20.787	-0.168	9.7	12.73	-0.8
8/15/00	9:21:43	20.802	-0.184	5	11.8	-0.9
8/15/00	9:22:43	20.808	-0.19	3.3	11.61	-0.9
8/15/00	9:23:43	20.814	-0.196	3.5	10.06	-0.9
8/15/00	9:24:43	20.817	-0.206	4.4	8.44	-0.9
8/15/00	9:25:43	20.787	-0.235	5.6	3.53	-1
8/15/00	9:26:43	20.792	-0.24	6.7	2.54	-0.9
8/15/00	9:27:43	20.791	-0.24	5.8	2.59	-0.9
8/15/00	9:28:43	20.787	-0.241	5.9	2.42	-0.9
8/15/00	9:29:43	20.786	-0.241	6.2	2.58	-1
8/15/00	9:30:43	20.786	-0.246	5.8	2.45	-1
8/15/00	9:31:43	20.777	-0.172	23.6	2.31	-1
8/15/00	9:32:43	20.539	-0.022	40.7	3.23	-1
8/15/00	9:33:43	20.582	-0.035	32	15.72	-1.1
8/15/00	9:34:41	20.493	0.099	14.8	5.67	-1.1
8/15/00	9:35:41	20.381	0.204	9.9	7.09	-1.1
8/15/00	9:36:41	20.414	0.179	11	7.02	-1.1
8/15/00	9:37:41	20.421	0.171	23.1	7.15	-1.2
8/15/00	9:38:41	20.4	0.204	58.3	6.61	-1.2
8/15/00	9:39:41	20.34	0.25	70.2	6.17	-1.2
8/15/00	9:40:41	20.323	0.253	213.8	5.6	-1.2
8/15/00	9:41:42	20.299	0.269	212.2	4.65	-1.2
8/15/00	9:42:42	20.288	0.353	316.4	3.42	-1.3
8/15/00	9:43:42	20.291	0.393	358.6	3.35	-1.3
8/15/00	9:44:42	20.312	0.328	192.1	3.5	-1.3
8/15/00	9:45:42	20.331	0.275	120.4	6	-1.3
8/15/00	9:46:42	20.298	0.306	112.6	6.02	-1.3
8/15/00	9:47:42	20.286	0.315	119.7	3.25	-1.3
8/15/00	9:48:42	20.325	0.24	107.1	5.9	-1.3

Test Run 1 Begin. STRATA Version 1.2.1

Operator: Peter Hilly

Plant Name: Newport Steel

Location: EAF Exhaust/Baghouse Inlet

		O2 %	CO2 %	CO ppm	NOx ppm	SO2 ppm
Begin calculating run averages						
8/15/00	8:15:41	20.408	0.409	246.8	2.58	-0.2
8/15/00	8:16:41	20.357	0.384	167.8	2.5	-0.2
8/15/00	8:17:41	20.377	0.296	175	2.96	-0.2
8/15/00	8:18:41	20.664	0.033	13.8	7.1	-0.2
8/15/00	8:19:41	20.748	-0.07	7.2	7.28	-0.3
8/15/00	8:20:41	20.747	-0.031	46.5	6.27	-0.3
8/15/00	8:21:42	20.689	0.004	100.7	5.87	-0.3
8/15/00	8:22:42	20.505	0.196	24.2	13.11	-0.3
8/15/00	8:23:42	20.426	0.266	15.9	5.88	-0.3
8/15/00	8:24:42	20.416	0.32	20.3	6.31	-0.3
8/15/00	8:25:42	20.359	0.372	41.8	7.7	-0.4
8/15/00	8:26:42	20.399	0.308	72.4	6.09	-0.4
8/15/00	8:27:42	20.398	0.319	94.9	4.99	-0.4
8/15/00	8:28:42	20.36	0.328	99	5.09	-0.4
8/15/00	8:29:42	20.337	0.346	160.5	5.26	-0.4
8/15/00	8:30:42	20.354	0.316	244.6	4.81	-0.4
8/15/00	8:31:42	20.386	0.3	290.6	3.98	-0.4
8/15/00	8:32:42	20.413	0.231	215.9	5.27	-0.4
8/15/00	8:33:42	20.431	0.214	213.5	7.27	-0.4
8/15/00	8:34:42	20.472	0.192	158.5	6.25	-0.4
8/15/00	8:35:42	20.473	0.173	129.1	3.54	-0.4
8/15/00	8:36:42	20.482	0.167	95.6	4.98	-0.4
8/15/00	8:37:42	20.465	0.184	76.1	6.9	-0.5
8/15/00	8:38:43	20.48	0.196	45.8	7.56	-0.5
8/15/00	8:39:43	20.49	0.224	24.6	7.74	-0.5
8/15/00	8:40:43	20.477	0.239	23.4	7.17	-0.5
8/15/00	8:41:43	20.579	0.083	5.7	12.51	-0.5
8/15/00	8:42:43	20.619	0.068	1.1	10.05	-0.5
8/15/00	8:43:43	20.562	0.134	7	7.45	-0.5
8/15/00	8:44:41	20.534	0.177	7.5	11.2	-0.5
8/15/00	8:45:42	20.446	0.344	21.5	12.84	-0.5
8/15/00	8:46:42	20.465	0.293	11.4	15.49	-0.5
8/15/00	8:47:42	20.462	0.311	13.1	14.51	-0.6
8/15/00	8:48:42	20.406	0.413	38.3	11.1	-0.6
8/15/00	8:49:42	20.32	0.451	50.7	7.2	-0.6
8/15/00	8:50:42	20.42	0.267	33.3	9.15	-0.7
8/15/00	8:51:42	20.513	0.174	6.5	16.24	-0.7
8/15/00	8:52:42	20.568	0.101	3	18.82	-0.7
8/15/00	8:53:42	20.631	0.03	2.1	21.8	-0.7
8/15/00	8:54:42	20.66	0.008	1.7	22.14	-0.7
8/15/00	8:55:43	20.672	-0.016	1.1	19.82	-0.8
8/15/00	8:56:43	20.703	-0.041	0.8	17.38	-0.7
8/15/00	8:57:43	20.667	-0.003	3.3	10.71	-0.7

Test Run 4 Begin. STRATA Version 1.2.1

Operator: Peter Hilty

Plant Name Newport Steel

Location: EAF Exhaust/Baghouse Inlet

	O2 %	CO2 %	CO ppm	NOx ppm
Begin calculating run averages				
8/16/00 13:09:43	20.451	0.51	411.5	1.84
8/16/00 13:10:43	20.445	0.503	304.4	1.32
8/16/00 13:11:43	20.458	0.51	332.2	2
8/16/00 13:12:43	20.458	0.51	348.8	2.09
8/16/00 13:13:43	20.514	0.621	484.2	1.95
8/16/00 13:14:42	20.513	0.56	338.9	1.83
8/16/00 13:15:43	20.45	0.694	241.5	0.94
8/16/00 13:16:44	20.248	0.906	217.8	0.98
8/16/00 13:17:43	20.222	0.916	234.5	1.23
8/16/00 13:18:42	20.288	0.784	237.3	2.35
8/16/00 13:19:43	20.181	0.865	262.8	3.18
8/16/00 13:20:43	20.168	0.784	237.6	3.17
8/16/00 13:21:42	20.424	0.498	182	6.45
8/16/00 13:22:43	20.418	0.609	129.1	4.97
8/16/00 13:23:43	20.122	0.978	196.3	1.67
8/16/00 13:24:42	20.167	0.892	261	2.09
8/16/00 13:25:43	20.22	0.831	300.2	1.97
8/16/00 13:26:43	20.145	0.95	257.9	2.11
8/16/00 13:27:42	20.24	0.805	245.8	2.25
8/16/00 13:28:43	20.336	0.769	208.1	2.36
8/16/00 13:29:44	20.332	0.765	175.2	2.34
8/16/00 13:30:42	20.39	0.685	173.8	2.19
8/16/00 13:31:43	20.331	0.788	146.2	3.66
8/16/00 13:32:44	20.573	0.58	106.4	5.74
8/16/00 13:33:42	20.669	0.4	57.6	8.55
8/16/00 13:34:43	20.746	0.283	34.3	17.09
8/16/00 13:35:43	20.798	0.221	21.2	14.02
8/16/00 13:36:42	20.788	0.228	21.6	11.85
8/16/00 13:37:43	20.771	0.206	20.1	11.82
8/16/00 13:38:44	20.802	0.188	31.3	11.89
8/16/00 13:39:42	20.825	0.171	22.9	11.02
8/16/00 13:40:43	20.86	0.143	14.3	9.86
8/16/00 13:41:43	20.883	0.129	10.6	9.45
8/16/00 13:42:44	20.871	0.12	8.9	10.42
8/16/00 13:43:42	20.89	0.098	9.1	9.45
8/16/00 13:44:43	20.904	0.084	10	8.28
8/16/00 13:45:44	20.91	0.087	11.3	9.46
8/16/00 13:46:42	20.91	0.089	13.7	9.84
8/16/00 13:47:43	20.913	0.089	15.1	9.83
8/16/00 13:48:44	20.91	0.089	14.2	9.63

FBT

8/16/00 13:49:42	20.906	0.088	14.1	9.45
8/16/00 13:50:43	20.861	0.167	33.1	9.42
8/16/00 13:51:44	20.396	0.614	108.7	11.82
8/16/00 13:52:42	20.505	0.47	91.2	6.51
8/16/00 13:53:43	20.646	0.324	64.9	4.25
8/16/00 13:54:43	20.527	0.415	95.9	3.92
8/16/00 13:55:42	20.491	0.453	50.1	3.37
8/16/00 13:56:43	20.513	0.429	72.6	3.12
8/16/00 13:57:43	20.501	0.436	141.5	2.87
8/16/00 13:58:42	20.474	0.466	170.7	2.71
8/16/00 13:59:43	20.467	0.477	155.4	2.65
8/16/00 14:00:43	20.428	0.518	137.6	1.83
8/16/00 14:01:42	20.387	0.538	108.9	2.19
8/16/00 14:02:43	20.399	0.534	145.7	2.41
8/16/00 14:03:43	20.414	0.586	168.6	2.08
8/16/00 14:04:42	20.385	0.61	150.3	1.65
8/16/00 14:05:43	20.397	0.585	143.6	1.69
8/16/00 14:06:43	20.412	0.535	124.3	1.58
8/16/00 14:07:42	20.444	0.489	105.2	1.57
8/16/00 14:08:43	20.465	0.464	107.4	1.24
8/16/00 14:09:43	20.468	0.466	116.4	1.01
8/16/00 14:10:42	20.572	0.34	43.3	7.16
8/16/00 14:11:43	20.714	0.218	9.9	7.5
8/16/00 14:12:43	20.762	0.162	7.3	6.79
8/16/00 14:13:42	20.754	0.228	27.5	6.91
8/16/00 14:14:43	20.536	0.449	73.5	4.74
8/16/00 14:15:44	20.522	0.475	59.3	4.24
8/16/00 14:16:43	20.423	0.525	22.1	4.36
8/16/00 14:17:43	20.482	0.465	16.1	4.76
8/16/00 14:18:42	20.491	0.473	45.1	4.6
8/16/00 14:19:43	20.531	0.477	148.4	3.98
8/16/00 14:20:42	20.536	0.478	222.6	3.32
8/16/00 14:21:42	20.483	0.517	281.9	3.26
8/16/00 14:22:44	20.386	0.588	182.7	2.99
8/16/00 14:23:43	20.407	0.523	234.1	2.81
8/16/00 14:24:43	20.448	0.51	299.8	2.42
8/16/00 14:25:43	20.471	0.533	268.3	2.3
8/16/00 14:26:43	20.502	0.469	167.7	3.16
8/16/00 14:27:43	20.535	0.467	158.2	6.76
8/16/00 14:28:43	20.553	0.472	101.7	5.65
8/16/00 14:29:43	20.601	0.409	22.5	9.82
8/16/00 14:30:42	20.612	0.413	15.7	7.26
8/16/00 14:31:42	20.548	0.523	51.2	3.5
8/16/00 14:32:42	20.488	0.546	74.1	2.26
8/16/00 14:33:44	20.569	0.45	24	3.25
8/16/00 14:34:44	20.656	0.314	5.5	6.88
8/16/00 14:35:43	20.64	0.335	8.8	8.07

8/16/00 14:36:43	20.703	0.269	4.3	7.2
8/16/00 14:37:43	20.655	0.319	16.2	6.12
8/16/00 14:38:43	20.574	0.489	42.7	3.53
8/16/00 14:39:43	20.384	0.764	109.3	1.08
8/16/00 14:40:42	20.446	0.603	70.2	2.81
8/16/00 14:41:42	20.463	0.581	46.9	4.31
8/16/00 14:42:42	20.462	0.633	50.4	3.44
8/16/00 14:43:44	20.328	0.808	98.3	2.19
8/16/00 14:44:44	20.532	0.472	42.7	6
8/16/00 14:45:43	20.655	0.365	19	10.22
8/16/00 14:46:43	20.687	0.343	12.5	19.13
8/16/00 14:47:43	20.616	0.426	14	6.03
8/16/00 14:48:43	20.635	0.363	10.3	5.41
8/16/00 14:49:43	20.655	0.39	9.5	5.09
8/16/00 14:50:42	20.52	0.655	62.6	2.02
8/16/00 14:51:42	20.607	0.323	46.7	4.22
8/16/00 14:52:44	20.799	0.169	8	5.41
8/16/00 14:53:44	20.823	0.151	6.9	5.43
8/16/00 14:54:44	20.803	0.175	8.9	5.7
8/16/00 14:55:44	20.788	0.176	10.7	5.97
8/16/00 14:56:43	20.813	0.172	26.3	6.08
8/16/00 14:57:43	20.814	0.157	25.8	6.1
8/16/00 14:58:43	20.851	0.13	9.1	5.22
8/16/00 14:59:43	20.856	0.122	6.9	5.19
8/16/00 15:00:44	20.854	0.105	6.9	4.68
8/16/00 15:01:42	20.86	0.092	7.3	4.56
8/16/00 15:02:43	20.863	0.092	9.5	4.82
8/16/00 15:03:44	20.866	0.092	9.8	4.69
8/16/00 15:04:42	20.869	0.091	10.4	4.36
8/16/00 15:05:43	20.845	0.081	9.8	1.03
8/16/00 15:06:44	20.845	0.077	9.1	0.61
8/16/00 15:07:42	20.847	0.076	8.8	0.65
8/16/00 15:08:43	20.851	0.073	8.7	0.65
8/16/00 15:09:44	20.855	0.072	8.7	0.6
Average of Test Run	O2	CO2	CO	NOx
	%	%	ppm	ppm
8/16/00 15:10:36	20.58	0.42	99.79	4.96
Test Run 4 End				