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:  Background Chapter Reference:	3 3 33
Title:	Air Emissions Test Report, Total Particulate Matter Emissions, Harsell Positive Pressure Baghouse, Kentucky Electric Steel, Inc., Ashland, KY. Prepared for Kentucky Electric Steel, Inc., Ashland, KY. July 2000. Submitted by Environmental Quality Management, Inc., Cincinnati, OH. PN: 050163.0009.





PAUL E. PATTON

COMMONWEALTH OF KENTUCKY

### NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION

Division for Air Quality 803 Schenkel Ln Frankfort KY 40601-1403

August 14, 2000

Travis Bailey Kentucky Electric Steel P. O. Box 3500 Ashland, KY 41105

Dear Sir:

On May 10-12, 2000, personnel from the Kentucky Division for Air Quality observed particulate compliance tests on Kentucky Electric Steel's Harsell Open Top Baghouse. Testing was performed by PES and EQ of Cincinnati, Ohio, in a satisfactory manner. The test report was complete and acceptable. Results were as follows:

Run	Date	Time	gr/DSCF	lb/hr
1	5-11	13:55 - 19:45	0.0012	4.80
2	5-12	7:15 – 11:20	0.0014	5.51
3	5-12	12:18 - 16:18	0.0007	2.43
			$\overline{0.0011}$	$\overline{4.25}$

The emissions stated in the report include the back half catch, which is not used in Kentucky. The allowable emission rate for this source is .0052 gr/DSCF. The baghouse was in compliance at the time of the test.

Sincerely,

Gerald Slucher, Chief Source Test Section

GS/JJ/mlp

Cc: Facility File 21-019-00020 Ashland Regional Office





### AIR EMISSIONS SOURCE TESTING PROTOCOL COMPLIANCE SAMPLING PROGRAM KENTUCKY ELECTRIC STEEL, INC. ASHLAND, KENTUCKY

Prepared for:

Kentucky Electric Steel, Inc. P.O. Box 3500 Ashland, Kentucky 41105

PN 050163.0009

Prepared by:

800 229 7495

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

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2	Sampling and Analytical Procedures  Location of Measurement Sites  Stack Gas Volumetric Flow Rate  Stack Gas Molecular Weight  Stack Gas Moisture Content  Particulate Matter  Visible Emission Observations	2-1 2-1 2-1 2-1 2-2 2-2 2-4
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4-1	Field Equipment Calibration Summary	4-2
4-2	Field Checks of Sampling Equipment	4-2

### INTRODUCTION

Environmental Quality Management, Inc. (EQ) has been retained by Kentucky Electric Steel, Inc. (KES) to plan and conduct a compliance particulate sampling evaluation from the Harsell Positive Pressure Baghouse servicing Lectromelt Electric Arc Furnaces A and B and Ladle Metallurgy Furnace. Sampling is being performed in accordance with the requirements of operating Permit Number V-98-031. Table 1-1 presents the sampling efforts to be performed at the baghouse exhaust.

The test program is scheduled to be conducted May 11 and 12, 2000.

TABLE 1-1. SAMPLING REQUIREMENTS

Test Point No.	Test Point Name	Parameter Tested	Test Method
1	Harsell Baghouse Inlet	Flow <sup>1</sup>	EPA Method 1 for Velocity EPA Method 2 for Temperature
2	Harsell Baghouse Outlet	O <sub>2</sub> /CO <sub>2</sub> Moisture PM Visible Emissions	EPA Method 3 EPA Method 4 EPA Method 5D EPA Method 9

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

The plant contact is:

Mr. Travis Bailey Kentucky Electric Steel, Inc. P.O. Box 3500 Ashland, Kentucky 41105 (606) 929-1330

### The EQ contact is:

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

### SAMPLING AND ANALYTICAL PROCEDURES

The sampling and analytical procedures to be used in this test program conform to EPA Reference Method 1-4, 5D, and 9 as published in the <u>Federal Register</u>. 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. Sample locations are shown in Section 3. Exact measurements will be made onsite. Selection of cells to be sampled and location of sampling points within the baghouse will follow guidelines in EPA Method 5D. A schematic of the baghouse outlet is shown in Figure 3-3.

### 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

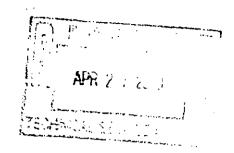
EPA Reference Method 3, "Gas Analysis for the Determination of Dry Molecular Weight," will be used to determine stack gas dry molecular weight. Bag samples will be collected



### Kentucky Electric Steel, Inc.

P. O. Box 3500 • Ashland, Kentucky 41105-3500 • (606) 929-1200

April 24, 2000



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

Dear Mr. Slucher:

Please find attached copies of Kentucky Electric Steel, Inc.'s Emission Testing Protocol for the test dates of May 11th and May 12th, 2000.

If you have any questions regarding the enclosed or need additional information, please feel free to contact me at (606) 929-1330.

Sincerely,

Travis A. Bailey

Manager

Human Resources & Risk Control

TAB:jla

**Enclosures** 

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 Harsell Baghouse is routed through 20 bag sections. 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 ten minutes of sampling per point, this will result in a net sampling time of four hours per test run. After three test runs, 12 of the 20 cells will have been sampled. Each test run will be approximately 240 minutes in length, and will cover approximately three EAF heat cycles. Exact 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.

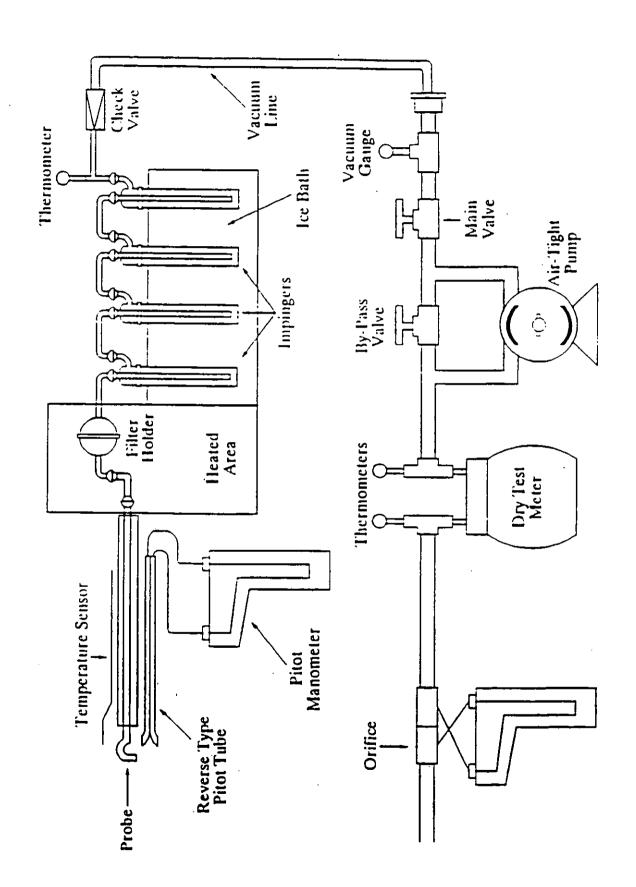


Figure 2-1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

### **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.

### PROCESS DESCRIPTION/SAMPLING LOCATIONS

Kentucky Electric Steel, Inc. owns and operates and electric arc furnace (EAF) melt shop and bar steel rolling facility located on U.S. Route 60 approximately 12 miles west of Ashland, Kentucky.

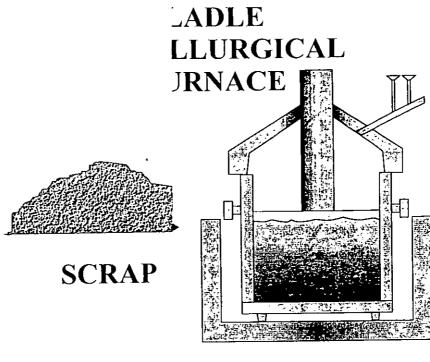
Kentucky Electric Steel, Inc. has two EAFs for steel production. Scrap steel is delivered by rail and truck and is stored in open piles. Scrap steel and various fluxing agents are weighed and charged to the EAF. The charge material is melted by electrical current flowing among three graphite electrodes lowered into the furnace. Slag (melt impurities) is separated from the product metal and is transferred to slag storage and processing using an endloader. Molten metal is tapped from the EAF into preheated transfer ladles by tilting the furnace, allowing the metal to flow through a hole in the side.

Molten metal is then transferred to the ladle metallurgy furnace (LMF). Raw materials (bulk alloys and fluxes) are added to the molten metal in the LMF to further purify it. The metal is heated during refining using electrodes. After metal treatment is complete, the transfer ladle is removed from the LMF and carried to the continuous casting machine.

At the continuous caster, molten metal is poured into a preheated tundish and then flows into molds and is allowed to partially cool. The strips of metal are cut into pieces at the caster to form billets. Cooled billets are later reheated in a reheat furnace and rolled to the desired dimensions. The bar steel is descaled using water sprays and the ends of the bars are sheared off. The final product is bound into bundles and stored until shipped offsite.

Emissions from the EAFs and LMF are vented to the Harsell Positive Pressure Baghouse. A general process flow diagram is provided in Figure 3-1.

The baghouse flue gas flow rate will be measured at an inlet location in a section of rectangular duct approximately 193 inches downstream of a bend in the duct and 165 inches upstream of a reduction in duct size. Dimensions of this area of the duct are 131.5 inches by 144



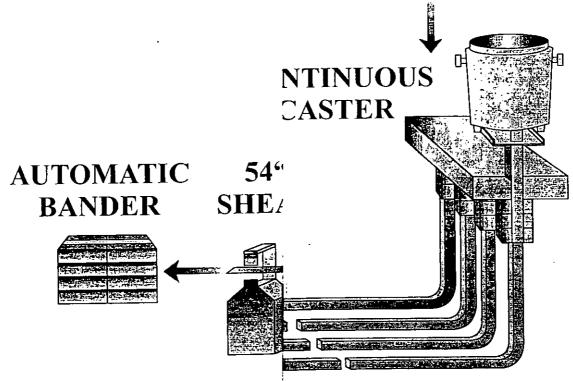


Figure 3-1. Pro

KES, Inc.	$\mathbf{E}_{\mathbf{Q}}$
Process Flow Diagram: Plant Process Flow	
Drawing No: 0	
Revision: 0	
Date: 1/9/98	

inches. Six ports on the top of the duct will be sampled, eight points per port, for a total of 48 points. A schematic is shown in Figure 3-2.

Figure 3-3 is a schematic of the baghouse outlet compartments to be sampled for the particulate emissions. A sampling matrix of three by two points, six points per compartment, will be used for sampling purposes. Each compartment will be sampled for 60 minutes. Four compartments will be sampled per test run.

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.

Fan and damper data is monitored continuously electronically. Data will be recorded at 15 minute intervals during testing.

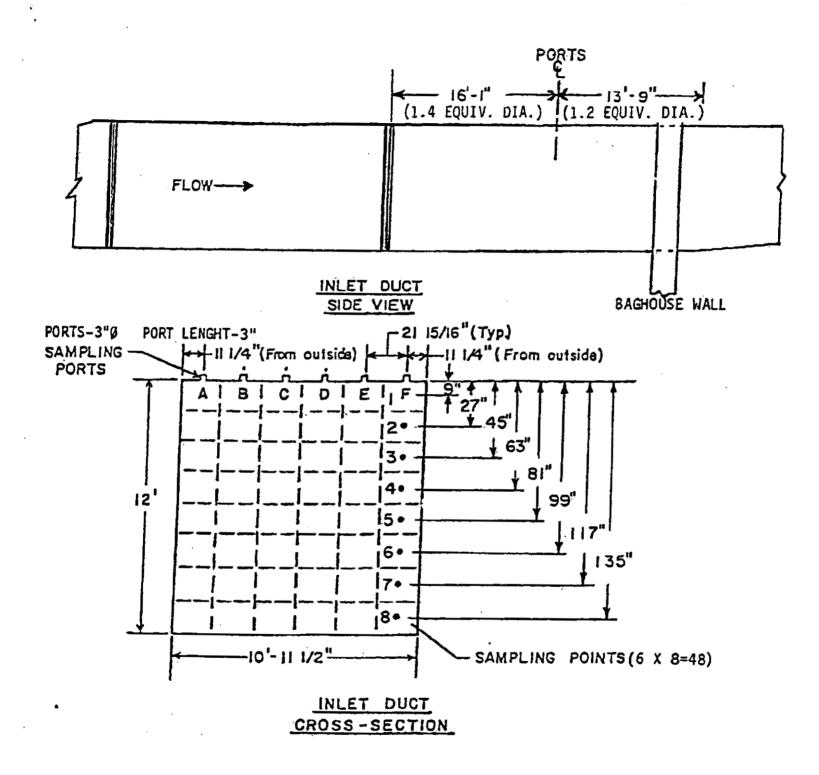
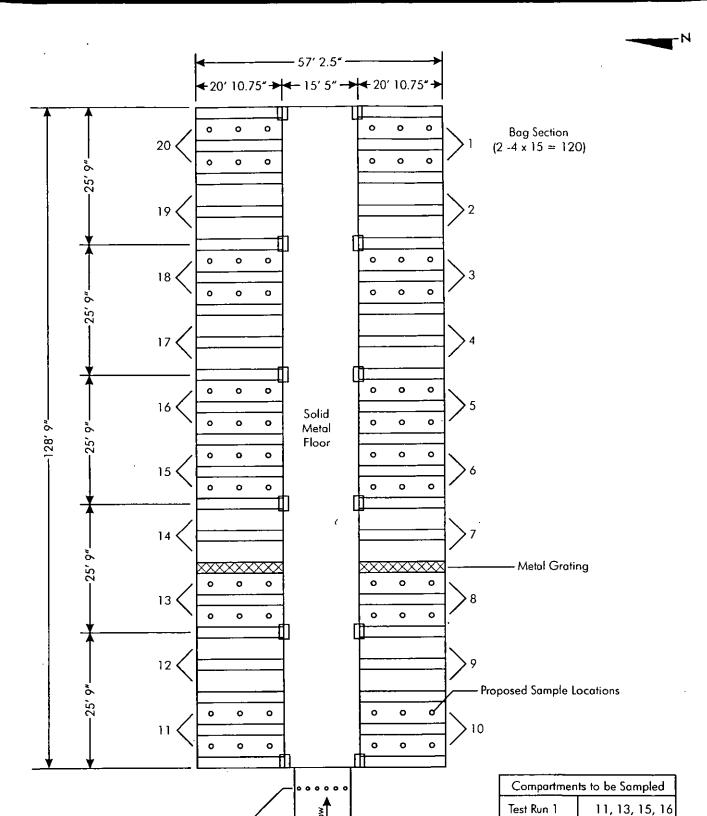


Figure 3-2. Inlet Velocity Measurement Location



Proposed KES, Inc. Outlet Sampling Points

Inlet Duct BAGHOUSE Plan View

€ Ports (6)

Figure 3-3. Schematic of Baghouse Outlet

Test Run 2

Test Run 3

18, 20, 1, 3

5, 6, 8, 10

### 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 are performed in preparation for this project. The meter boxes are re-calibrated after the test.

Listed in Table 4-2 is the additional calibration checks which are performed on the sampling equipment onsite, 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 ±0.02Y ▲H @ ±0.15 post-test Y ±0.05 Y
Orsat	Certified cylinder gas	±0.5%
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	±1.5%
Impinger (or condenser thermometer)	ASTM-3F	±2°F
Dry gas thermometer	ASTM-3F	±5°F
Probe nozzles	Caliper	±0.004 in.
Barometer	NBS traceable barometer	±0.1 in. Hg

<sup>\*</sup> As recommended in the <u>Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III. Stationary Source-Specific Methods.</u> 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	±1.5%
Probe Nozzles	Caliper	±0.004 in.

### 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	May 10	Arrival at Plant / Safety Orientation / Set up equipment	
Day 2	May 11	Conduct 4 hour particulate sampling	2 Runs
Day 3	May 12	Conduct 4 hour particulate sampling	1 Run

### FINAL REPORT FORMAT

### TABLE OF CONTENTS

SECTION 1	INTRODUCTION
SECTION 2	SUMMARY OF TEST RESULTS
SECTION 3	SAMPLING AND ANALYTICAL PROCEDURES
	Location of Measurement Sites Stack Gas Volumetric Flow Rate Stack Gas Dry Molecular Weight Stack Gas Moisture Content Particulate Concentration and Mass Emission Rates
SECTION 4	PROCESS DESCRIPTION/SAMPLING LOCATIONS
SECTION 5	OUALITY ASSURANCE/QUALITY CONTROL

### **APPENDICES**

Α	CALCULATIONS
В	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 and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lanc
Frankfort, Kentucky 40601

### COMPLIANCE TEST PROTOCOL

GENERAL INFORMATION					
PLANT NAME Kentucky Electric Steel, Inc. PLANT IDE 21-019-00020					
ADDRESS P.O. Box 3500 Ashland, Kentucky 41105 PERMITIDE V-98-031					
PLANT CONTACT Travis Bailey TELEPHONE NO. 606/929-1330					
AFFECTED FACILITIES TO BE TESTED Electric Arc Furnaces A and B, Ladle					
Metallurgy Furnace and Associated Dust Handling Equipment					
TENTATIVE TEST DATE May 11 and 12, 2000					
PROCESS INFORMATION					
MAXIMUM RATED CAPACITY 68 tons/hr (Hot Metal Production from both EAFs					
RATE TO BE RUN DURING TEST Approximately 40 tons/hr					
(Permuted rate will be no more than 110% of overage test rate)					
METHOD OF DETERMINING RATE Records of charge weights and materials, and					
tap weights and materials					
NORMAL OPERATING CYCLES (c.g. Shesiday: soot blowing. etc.) Approximately 20 heats/day					
(24 hours/day)					
OPERATING CONDITIONS THAT TEND TO CAUSE "WORST CASE" POLLUTION EMISSIONS					
Attempt to maximize hot metal production					
NORMAL MAINTENANCE SCHEDULE FOR EQUIPMENT AFFECTING EMISSIONS					
Monitor baghouse pressure drop, inspect bags, and monitor control					
system fan amperes					

### COMPLIANCE TEST PROTOCOL CONTINUED

TYPE AND	MANUFACTURER OR ALL CONTROL EQUIPMEN'S
	1 Positive Pressure Baghouse, Harsell Engineering Corp.,
	1 2400 Bag, 20DW120
<del></del> -	
	•
<del></del>	
	E MONITORED AND RECORDED TO ENSURE REPRESENTATIVE—OPERATION DURING TEST, AN MUM VALUES.
Baghou	se Pressure Drop - 5" W.C. (Typical)
Furnac	e Blower Fan Amperage - 103 Amps (Approximate)
West F	an Amperage - 182 Amps (Approximate)
	an Amperage - 183 Amps (Approximate)
EASL F	an Amperage - 103 Amps (Approximate)
	ALCYCLES Bags are cleaned with reverse air and via shaking hourly cycle
on an	
on an	hourly cycle
on an	hourly cycle
on an	hourly cycle
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### COMPLIANCE TEST PROTOCOL CONTINUED

	TESTING PIRM	NAME Environme	ental Ouality Ma	nagement, Inc.					
	ADDRESS	1310 Kemp			Ohio 45240				
		ONTACT Tom Gerst		TELEPHONE NO: 51					
		ECTED FACILITIES TO BE		E INFORMATION REQUI	RED BELOW:				
	Affected Facility	Pollulants	Total Time Per Test	No. of Tests (minimum of 3)	Tesc Methods To be Used				
EAF	, LMF	Particulate Matter	240 minutes	3	EPA Methods 1-4				
	]								
۸	AND LOCATION PHYSICAL OF SEE SAMPLING THE GIVE A DET TRANSPORT AND JUSTIF	IAGRAM OF THE SAME ON OF TRAVERSE POIN ISTACLES, IN OR AROU ATTACHED SAMPLIN RAIN INFORMATION AILED DESCRIPTION PROCEDURES WHIC ICATION FOR DEVIA MPLING PRONE 4 £	TS, DISTANCES FROM IND THE STACK. G PLAN OF ANY SAMPLING THE DO NOT COMPLY	I FLOW DISTURBANCE OR SAMPLE RECOV	/ERY AND				
	PROBELINER N	MATERIAL OF CONSTRUC	TION Borosilio	ate Glass					
	PROBE LINER MATERIAL OF CONSTRUCTION Borosilicate Glass								

### COMPLIANCE TEST PROTOCOL CONTINUED

	STACK TEMPERATURE 130° F STACK % MOISTURE 2%							
	STACK GAS VELOCITY 70 FPM							
	STACK GAS COMPOSITION, INCLUDING APPROXIMATE CONCENTRATION OF ORGANICS							
	$0_2 - 20.3\%$ , $CO - 0\%$ , $CO_2 - 0\%$ , $N_2 - 79.7\%$							
	FOR INSTRUMENTAL METHODS LIST EXPECTED CONCENTRATIONS, ALLOWABLE CONCENTRATIONS, INSTRUMENT SPANS, AND CAL GAS CONCENTRATIONS							
	THE TRANSPORT OF THE TAX OF THE T							
	LABORATORY ANALYSIS							
	GIVE DETAILED DESCRIPTION OF ANY ANALYTICAL PROCEDURE AND/OR EQUIPMENT WHICH DOES NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JUSTIFICATION FOR DEVIATION.							
	DOES NOT COMPLY WITH THE SPECIFIED PROCEDURES AND JOSTIFICATION 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 samples will be maintained with a chain of custody form. A							
	sample form is provided in the attached Sampling Plan							
•								
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	ALL LAGORATION PROCEDURES SUAL MANY DESTINANT OF DATA SUBMITTED MUSTUES OF I							
	ALL LABORATORY PROCEDURES SHALL HAVE PERTINENT QA DATA SUBMITTED WHETHER OR THE WORK IS PERFORMED IN-HOUSE OR BY A THIRD PARTY.							
	DATA SHEETS SEE ATTACHED SAMPLING PLAN							
:	SUBMIT EXAMPLES OF ALL DATA SHEETS TO BE USED.							

# APPENDIX B EXAMPLE DATA SHEETS

# FIELD DATA SHEET

Plant	· ·			San	Sample Type:	Operator:	ator:	No	Nozzle (D:		Thermoc	Thermocouple #:	
Samp	Sampling Location	tion		Pbar		.::		Ass	Assumed Bws:	WS:	Filter #:	!	
Run	Run Number:		Date:	:CO5:	ć	    8  8		Met	Meter Box #:		•	∆Н@:	
Pretet	Pretest Leak Rate:	age:	cfm @	in. Hg. Prot	Probe Length/Type:	)e:	Pitot #:	· ·	Post-Test Leak Rate	sak Rate		ļ	in. Hg.
Prete	st Leak Cl	Pretest Leak Check: Pitot:	Orsat:		Stack Diameter:		R:		at-Test Le	ak Chec	Post-Test Leak Check: Pitot:	Orsat:	
Traverse	Sampling	Traverse Sumpling Clock Time	Ges Meter	Velocity	Orifice Presu	Orifice Pressure Differential	Stack	Temperature		Impinger	Dry Gas Meter Temp.	$\Box$	Pump
E S		(24-hour	Reeding (Vm) n3	Heed (Ap)	(AH)	(AH) in H2O	Temp.	Proba		Temp.	hlet Tra in Opt	Outlet Care	Vacuum
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									+	7	1		
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### GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant:			Date:
Sampling Lo	· · · · · · · · · · · · · · · · · · ·		
			Operators:
Barometric f	Pressure, in.	Hg:	Static Pressure, in. H <sub>2</sub> O:
Moisture, %:		Molecular w	rt., Dry: Pitot Tube, Cp:
Stack Dimer	nsion, in. Dia	emeter or Side	1: Side 2:
Wet Bulb, <sup>O</sup> f	=:	Dry Bu	lb, <sup>o</sup> F:
		•	
Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
Point Number	Head in, H <sub>2</sub> O	Temp.	$Mdi = (0.44 \times ) + (0.32 \times ) + (0.28 \times )$
	20	<del>                                     </del>	Md =
· · · · · · · · · · · · · · · · · · ·			
	<u> </u>		$Ms = Md \times (1 \cdot \frac{\% H_2O}{100}) + 18 \left( \frac{\% H_2O}{100} \right)$
	ļ		$Ms = ($ $) \times (1 - \frac{100}{100}) + 18(\frac{100}{100})$
			100
			Ma =
-		-	Ta = OF = OR (OF + 460)
•	<u> </u>	<del> </del>	c D
			$Pa = Pb + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{13.6}$
		<del> </del>	 Pa = in. Hg
			√ <u>\( \tilde{\DP} \) = </u>
		<u> </u>	
			$V_{8} = 85.49 \times C_{P} \times \sqrt{\frac{T_{3} (^{\circ}R)}{P_{3} \times M_{8}}}$
	<u> </u>		Ve = 85.49 x ( ) x ( ) x \
			¥
			Vs = ft/s
			As = tt <sup>2</sup>
2			
			Qs = Vs x As x 60 s/m
			Qs = x x 00
	<del></del>	<del> </del>	Qs = acfm
		<del> </del>	$Qe_{atd} = Qe \times 17.647 \times \frac{Pe}{Te} \times (1 - \frac{\% H_2O}{100})$
			··· 16 100
	<u></u>	Te =	Qe <sub>std</sub> = x 17.647 x
ļ	<b>4</b> ΔP ■	115 -	···· 100
			Os <sub>etd</sub> = decim

### Pacific Environmental Services, Inc.

### Dry Molecular Weight Determination

Client/Project:	- <del></del>	Orsat No.	
Date/Time:		Operator:	
Sample Type:		Comments:	
Ambient Temp. 1F		Site Location:	

Run No.(s)	Gas	Rui	n 1	Ru	n 2	Ru	n 3	Average	Multiplier	Molecular Weigh of
		Actual	Net	Actual	Net	Actual	Net	Volume %		Stack Gas, Md (lb/Mole)
· [	CO3		•						0 44	
	0,4				<del></del>				0 32	
Ī	co•								0 28	
	N <sub>2</sub> ¢								0 28	
L			<del>-</del>	·					Md =	

Run No.(s)	Gas	Ru	n 1	Ru	ın 2	Ru	n 3	Average	Multiplier	Molecular Weign of
		Actual	Net	Actual	Net	Actual	Net	Volume		Stack Gas, Md (lb/Mole)
. [	CO3								0.44	
	0,4	·							0.32	
	co				,				0.28	
	N <sub>2</sub> c								0 28	
		·		<del>'</del>	<u> </u>				Md =	

Run No.(s)	Gas	Rui	n 1	Ru	n 2	Ru	n 3	Average Net	Multiplier	Molecular Weight of
		Actual	Net	Actual	Net	Actual	Net	Volume %		Stack Gas, Md (Ib/Mole)
ſ	CO,								0 44	
	0,4		·						0.32	
Ī	CO								0.28	
	N²ç								0.28	
									Md ≖	

 $<sup>^{\</sup>rm e}$  O  $_{\rm Z}$  Net Volume is O  $_{\rm Z}$  actual reading minus. CO  $_{\rm Z}$  actual reading.

GRACE ENVIRONMENTAL BERRICES, INC.

 $<sup>^{\</sup>text{b}}$  CO Net Volume. is CO actual reading minus  $\text{O}_{\text{2}}$  actual reading.

<sup>&</sup>lt;sup>6</sup> N<sub>2</sub> Net Volume is 100 minus CO actual reading.

# ANALYTICAL REQUEST AND CHAIN OF CUSTODY

PLANT:			PROJECT #:					₹	WLYTIC	ANALYTICAL REQUEST	EST			
RECOVERY PERSON:					_				-	/				<u> </u>
SAMPLE TECHNICIAN:					<u></u>	\				<u> </u>	\	\	\	COMMENTS
SAMPLE IDENTIFICATION	PATE TE	COLLECTION DATE TIME	SAMPLE NAME	NUMBER OF CONTAINERS	_	_			\					(Type of container, special preparation,
-							+	+	+	$\downarrow$				special handling, etc.)
							+	-	-					
						-	-	-				1		
							-					-		
								-	-					
								-					+	
								-						
							-							
							-		-					
										_			-	
								<u>  .</u>					i yan	
													+	

SHIPPER'S NAME AND ID NUMBER	
RELINOUISHER'S SIGNATURE	RECEIVER'S SIGNATURE
DATE/TIME	DATE/TIME
RELINGUISHER'S NAME	RECEIVEN'S NAME

Frank Bailey Kentucky Sectice Steel Ashdond, in 41105

To Mary Jon Cang 14 00

VILLE IN

in May 10-12, 2000, , would from the Contract of Division of the Country Francis portunate compliance cests on Kentucky Electric Wiely Hornell Gran Top Raylorece. Sesting was performed by PES and ER, of incomment, this, in a cuti exiting manner. The test reject is as emplois and acceptable, near to were as follows

lo/m SOSCE iner 4.70 0.0012 1365-13:13 5.51 1.0014 5.1 715-1120 7 43 0.0007 5-12 1218-1018

The emissions stated on the sport include the brickway called, with is watering study. The allowing a course with the for some 10052 West . The Inglesse was not in Complement of the Time of the Fell

C.C. Much 1. 11 21-019-00020 Whilehal agust Office ## 100 Jon Schiffel

2hus "May 11 Ky Electric Steel-Eclic Hall 606 929 1200

Flat 155 Vm, 18.747 pt i 2 3 4 5 6 7 8 dust

Alop 735 Vm, 295.810 csp 000% - cll muss baylors

Du 1000 T5:3007 fundille 10.001@ 5 in Hz path the Voke

fragilizer from mod at 2:44 p, 355, 55 p

line headling to zhouse Russians et 356 p

Nlay 12 2000 fri

That 7.15 Vm, 296.400 1.8 1.9 1.3 1.6 1.9 2.1 2.9 2.3

slop 1100 Vmg 493, 789 0.000 993 - alloeme biglioner

T5-1607 Du 1.240 final U1 1600 @ 4 m 14 pith Me Se

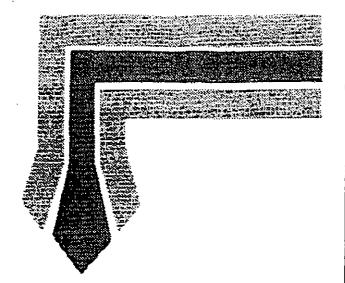
oranity from shop not out 844 945

start 7218 Vm, 404, 320 pt 1 2 3 4 5 6 7 8

stop 400 Vm 672, 672 pp 1.3 .98 1.00 1.7 1.9 1.8 2.1 2.0

Au Ts final lk 600 @ 5 m Hg pitet Ok Vok

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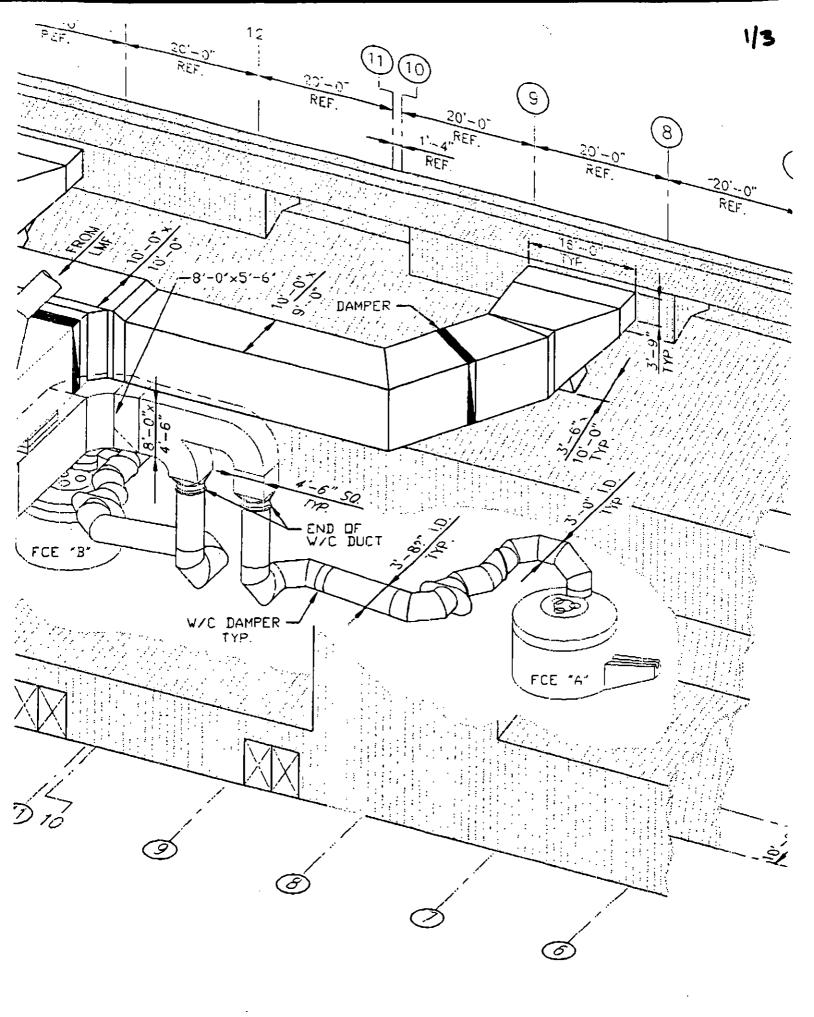


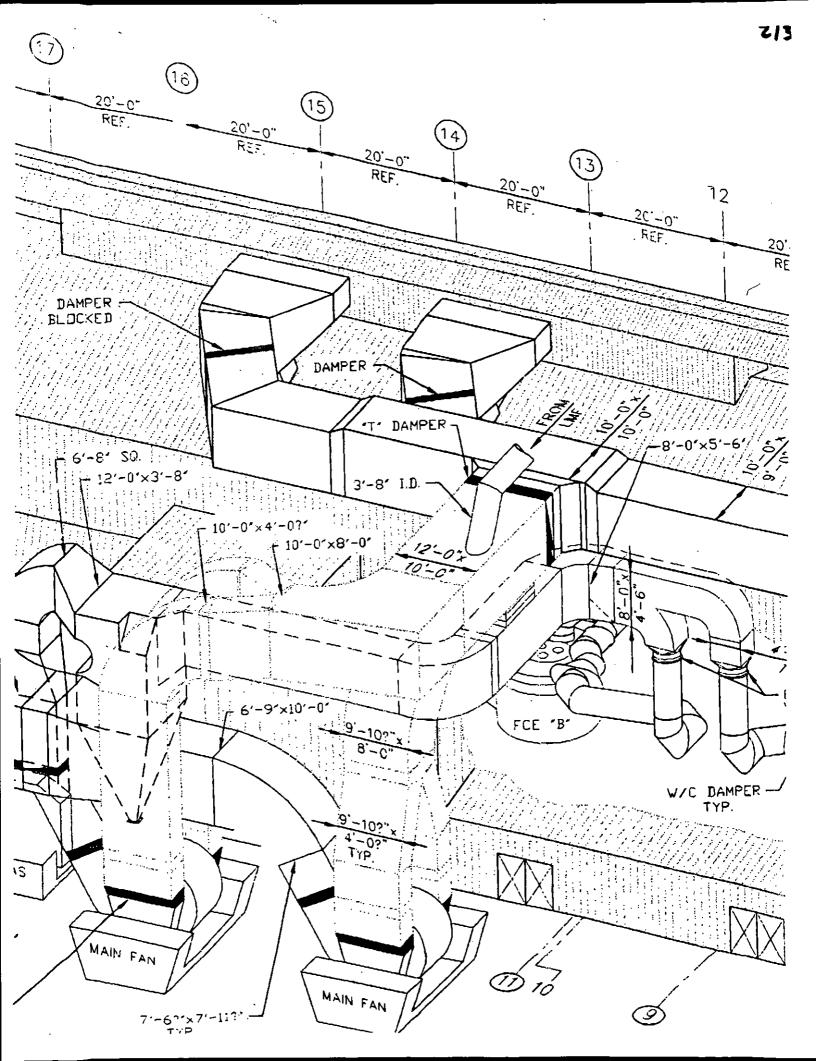
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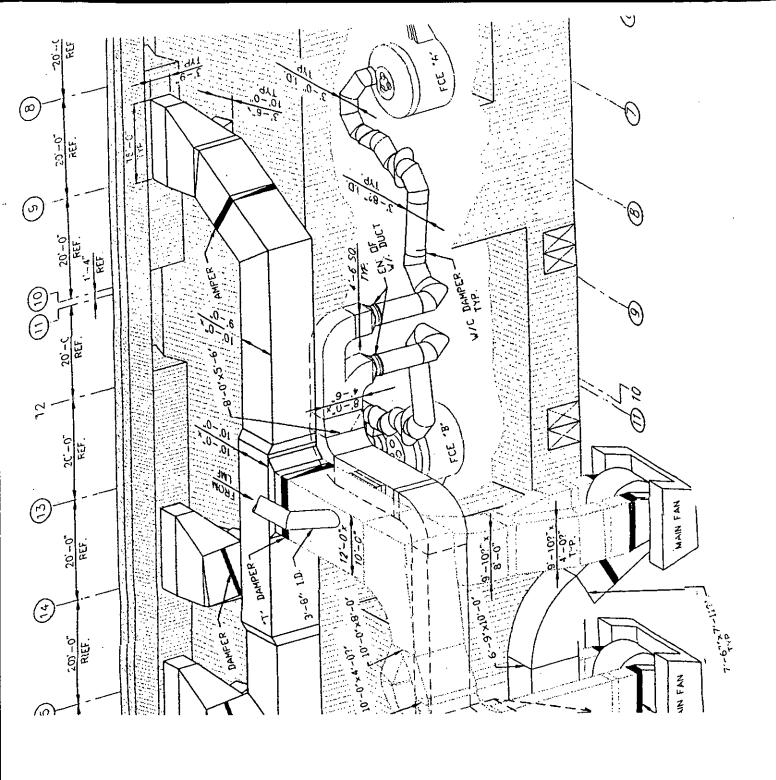
Date of Transmittal: _7/28/00
Time of Transmittal:
Number of Pages (including cover):
To Verify Receipt, Call: (513) 825 7500

To: Janu Jayus Company: Ky Dag	Phone No:
Fax No: 507-573-3787	
From: 64 GARSTLE	
Message:  Schlematic of Kess Duct Layout, The	US IS A CORY OF THE LARGER
DRAWENC I HAD. THE CORES ON	CLAP TO MAKE A CAPEAR
Ficee.	
ROME CALL IF YOU	NOTE IN STREET

Environmental Quality Management, Inc. 1310 Kemper Meadow Drive, Cincinnati, Ohio 45240 Tel: (513) 825-7500, Fax: (513) 825 7495







## AIR EMISSIONS TEST REPORT TOTAL PARTICULATE MATTER EMISSIONS HARSELL POSITIVE PRESSURE BAGHOUSE KENTUCKY ELECTRIC STEEL, INC. ASHLAND, KENTUCKY

Prepared for

Kentucky Electric Steel, Inc. P.O. Box 3500 Ashland, Kentucky 41105

July 2000

Submitted by

Environmental Quality Management, Inc. 1310 Kemper Meadow Drive, Suite 100 Cincinnati, Ohio 45240 (513) 825-7500 Fax: (513) 825-7495

PN: 050163.0009

#### ENVIRONMENTAL QUALITY MANAGEMENT, INC.

1310 Kemper Meadow Drive • Suite 100 Cincinnati, Ohio 45240 (513) 825-7500 FAX (513) 825-7495

July 6, 2000

Mr. Gerald Slucher
Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department of Environmental Protection
Division of Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601



Dear Mr. Slucher:

On behalf of our client, Kentucky Electric Steel, Inc. (KESI), we are pleased to submit the Air Emissions Test Report for Total Particulate Matter Emissions for KESI's Harsell Positive Pressure Baghouse. This test was required as a condition of KESI's Title V Operating Permit (Permit Number V-98-031).

Please contact Mr. Travis Bailey, KESI, at (606) 929-1330 with any questions or comments.

Sincerely, ENVIRONMENTAL QUALITY MANAGEMENT, INC.

Thomas ( Gentle 1508

Thomas C. Gerstle, P.E. Project Manager

Cc: Mr. Travis Bailey, KESI

Ms. Sheri Bussard, EQ

Mr. Fred Hall, EQ

Ms. Tina Wise, EQ

050163.0009

Attachment



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#### **SECTION 1**

### INTRODUCTION

On May 11 and 12, 2000, Environmental Quality Management, Inc. (EQ) and Pacific Environmental Services, Inc. (PES) personnel conducted a compliance air emission program at the Kentucky Electric Steel, Inc. facility in Ashland, Kentucky. Sampling was conducted following the procedures of EPA Reference Methods. Total particulate matter emissions were measured from the Harsell positive pressure baghouse outlet sampling location.

EQ utilized EPA Reference Methods 1 and 2 to determine the inlet stack gas velocity and temperature. EPA Method 3 was used to determine the stack gas molecular weight. Moisture, particulate matter, and visible emissions were measured following the procedures of EPA Reference Methods 4, 5D, and 9, respectively at the baghouse outlet. In addition, visible emission observations were conducted via EPA Method 9 at the melt shop roof monitor.

Mr. Eddie Hall of Kentucky Electric Steel, Inc. and Messrs. Tom Gerstle and Fred Hall of EQ monitored process operations for the purposes of testing. Mr. John Jayne and Mr. Rick Seelhorst, of the Kentucky Division of Environmental Protection observed process operations and sampling efforts. Messrs. Ron Kolde, Dan Scheffel, and Gary Gay of PES and Ms. Tina Wise of EQ conducted sampling efforts.

#### **SECTION 2**

#### SUMMARY OF TEST RESULTS

Sampling of the Harsell baghouse was conducted on May 11 and 12, 2000. Three test runs, four to five hours in length, were conducted for velocity, moisture,  $O_2$  and  $CO_2$  and particulate matter. Visible emission observations were also conducted at the baghouse and melt shop exhausts. Sampling was conducted following EPA Reference Methods 1-4, 5D, and 9.

Table 2.1 summarizes the stack gas conditions measured for the three sample periods at the inlet. Stack gas velocities averaged 81.5 feet per second (fps) at 154°F and 2.1 percent moisture. Stack gas composition averaged zero percent CO<sub>2</sub> and 21 percent O<sub>2</sub>. Volumetric flow rates averaged 622,736 actual cubic feet per minute (acfm) or 522,102 dry standard cubic feet per minute (dscfm). Measurements were consistent for the three test runs.

Table 2.2 summarizes the stack gas conditions measured for the three sample periods at the outlet. Stack gas velocities averaged 1.9 feet per second (fps) at 159°F and 2.1 percent moisture. Stack gas composition averaged zero percent CO<sub>2</sub> and 21 percent O<sub>2</sub>. Volumetric flow rates averaged 603,900 actual cubic feet per minute (acfm) or 497,700 dry standard cubic feet per minute (dscfm). Measurements were consistent for the three test runs.

Table 2.3 summarizes the filterable particulate concentrations and mass emission rates and metal production and baghouse pressure drop. The filterable particulate concentration averaged 0.0019 grains per dry standard cubic foot (gr/dscf), with an average mass emission rate of 8.13 pounds per hour (lb/hr). The molton metal production averaged 45 tons/hr (total for both furnaces) and the baghouse pressure drop averaged 5.5 inches of water.

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 at each source in conjuction with the particulate sampling runs. The observations were recorded separately for the baghouse exhaust and melt shop roof monitor. The raw emission observation data was entered into a computer spreadsheet to calculate the melting, charging and tapping

averages. These data are provided in Table 2.4. The baghouse observation data is provided in Table 2.5.

The melting periods are summarized into rolling 6 minute averages. The charges were averaged for the time period commencing at the moment the EAF starts to open and ending either three minutes after the EAF roof is returned to the closed position or six minutes after commencement of opening of the roof whichever is longer. The tapping periods were averaged for the time period commencing at the moment the EAF begins to tilt and ending either three minutes after steel ceases to flow or six minutes after steel begins to flow, whichever is longer.

TABLE 2.1 SUMMARY OF STACK GAS CONDITIONS HARSELL BAGHOUSE INLET

Site/ Run No. Time Stack (Velocity, 1.1 5/11 1355-1945 80.4 1.2 5/12 0630-1050 82.3	Stack Gas /elocity, fps*	Volumetric Flow Rate		1 14111.	raine. Actitutely Efectfic Steel, Ashland, Kentucky	rric Steel, ASh	land, Kentuc
5/11 1355-1945	city, fps*		Flow Kate	Tomat.	, , ,		
5/11 1355-1945		acfm	dscfm	°F	Moisture, %	0 2	°, %
5/12 0630-1050		614,725	538 404	136			
5/12 0630-1050			totion	150	7.1	0:0	21.0
		629,190	522.645	157	9 (		
L					<b>6:.</b> 0	0.0	21.0
3/12 1030-1619 81.7		624,292	505,257	169	7.0	0.0	
					7:.7	0.0	0.12
Average 81.5		622,736	522.102	154	,	0	

Feet per second.
 Actual cubic feet per minute.
 Dry standard cubic feet per minute.

Note: Stack gas conditions presented are the average of pre and post-test velocity measurements conducted at the inlet sampling location.

SUMMARY OF STACK GAS CONDITIONS HARSELL BAGHOUSE OUTLET TABLE 2.2

Date: May 11 and 12, 2000	2, 2000				Plant:	Plant: Kentucky Electric Steel, Ashland, Kentucky	tric Steel, Ash	land, Kentuck
Site/	Ţ	Stack Gas	Volumetri	Volumetric Flow Rate	Temp.	Moisture.	CO.	0
Run No.	1	Velocity, fps	acfm	dscfm	4	%	" %	î %
0-1	5/11 1355-1945	2.0	630,570	536,400	146	1.2	0:0	21.0
0.2	5/12 0630-1050	1.9	628,030	511,300	162	2.5	0.0	21.0
0-3	5/12 1050-1619	1.7	553,010	445,500	168	2.6	0.0	21.0
Ave	Average	1.9	603,900	497,700	159	2.1	0.0	21.0

Feet per second.
 Actual cubic feet per minute.
 Dry standard cubic feet per minute.

NOTE: Volumetric flow rates were taken at the inlet and applied to the outlet per Method 5D. Other parameters were measured at the outlet location.

# STACK TEST REVIEW

NAME Ky Electric Stack TEST	NO.
SOURCE TYPE Have Printing Pressul Bez hower IN	NO. 130-3
	OF TEST 5-12-00 1218-1618
TEST PERFORMED BY EQ	
DATA REQUIRED	RESULTS
T <sub>S</sub> , Stack temperature  P <sub>S</sub> , Stack pressure  T <sub>m</sub> , Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)  V <sub>C</sub> , 45  168  oF  29.44  in. Hg.  97  oF  175.352  in. Hg.  70.788	V <sub>H20</sub> , Volume of water 4,378 cf B <sub>wo</sub> , Moisture of content 2,6% V <sub>ne</sub> , Volume of sample 165,017 at stack cond. cf M <sub>dry</sub> , Molecular wt dry 28,84 M <sub>wet</sub> , Molecular wt wet 28,56 Velocity 1,65 fps
CO <sub>2</sub>	Isokinetic Ratio 1.93 gr/scf @@@@@@@
O.02762 ΔP, Velocity head O.00763 in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. O.84	Lb/mm BTU
240 min x 60  0, Sampling time sec.  An, area of nozzle D=1,240" 0.00839 ft²  D²x 0.005454	
Weight of collected 7.05 mg gm pollutant CO2, Waste only %	REVIEWED BY
A <sub>8</sub> , Area of stack D= ft $\frac{D2}{4}$ $\pi$ 5381 ft	RECOMMENDATION
Boiler Heat Capacity mmBTU/Hr.	V = Qu To Ao Tu
7.6504 405-15)  7.6504 405-15)  7.6504 45555 500	1.65 = (33,296,074+39612,842)2 (460+168) by 5000 see

# STACK TEST REVIEW

NAME Kentucley Chalic Steel	TEST NO
	RUN NO. <u>10-1</u>
MODEL OR NAME	DATE OF TEST 5-11-00 1355- 1945
TEST PERFORMED BY	EQ/PES
DATA REQUIRED	RESULTS
T <sub>S</sub> , Stack temperature  P <sub>S</sub> , Stack pressure  T <sub>m</sub> , Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)  V <sub>S</sub> 29.60  in.Hg.  94  oF  P <sub>M</sub> , Meter pressure  43.5 gm  173.319 cf	V <sub>H20</sub> , Volume of water Z.048 cf Bwo, Moisture of content 1.370 V <sub>ne</sub> , Volume of sample 101.774 at stack cond. cf M <sub>dry</sub> , Molecular wt dry Z8.84 M <sub>wet</sub> , Molecular wt wet 28.70 Velocity 1.76 fps
CO <sub>2</sub>	Isokinetic Ratio 1,10  gr/scf @######  0.0012 no back had
0.032/87 ΔP, Velocity head <u>0.00/036</u> in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. <u>0.84</u>	Lb/Hr Lb/mm BTU
©, Sampling timesec.  An, area of nozzle D=1.00 "005454ft^2 D2x 0.005454	
Weight of collected 12.15 gm pollutant CO <sub>2</sub> , Waste only	REQUESTED BY
A <sub>S</sub> , Area of stack $D = \text{ ft}  \frac{D2}{4}  \pi  5381  \text{ft}$ $855 \times 1545  4$	DATERECOMMENDATION
Boiler Heat Capacity mmBTU/Hr.	$\overline{V} = \frac{Q_L}{A_0}  \overline{I_0} \qquad Q_L = Q_{10.7110}$
REMARKS	H = 67112,210/2 (460+145) m Acc = 5381/2 (400+136) 3600cc
,5	see 3 2019 (400+136) 3600 sec

જ્ડ

### STACK TEST REVIEW

and the Company of the Company	
NAME Mentacky Electric Steel TH	
SOURCE TYPE Havell Perative Present Daguery RI	N NO. 130-Z
MODEL OR NAME DA	ATE OF TEST $5-12-00$ $7^{15}$ $11^{20}$
TEST PERFORMED BY	EQ JES
DATA REQUIRED	RESULTS
T <sub>S</sub> , Stack temperature  P <sub>S</sub> , Stack pressure  T <sub>m</sub> . Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)  T <sub>S</sub> 29.45  To 7  To 7  To 9  To 7  To 10  To 7  To 7  To 10  To 7  To	V <sub>H20</sub> , Volume of water 4,754 cf Bwo, Moisture of content 2,5% Vne, Volume of sample 186,787 at stack cond. cf Mdry, Molecular wt dry 78,84 Mwet, Molecular wt wet 28,57 Velocity 1.70 fps
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Isokinetic Ratio   09 gr/scf @@@@@@g O.0014
O <sub>1</sub> 03151 ΔP, Velocity head <u>O<sub>1</sub>000993</u> in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. <u>O<sub>1</sub>84</u>	Lb/Hr Lb/mm BTU
<u>240</u> min x 60	·
0, Sampling time sec.  An, area of nozzle D=1,240 " 0.00839 ft <sup>2</sup> D <sup>2</sup> x 0.005454	
Weight of collected 17.40 gm pollutant CO <sub>2</sub> , Waste only	REQUESTED BY
A <sub>s</sub> , Area of stack $D = \text{ ft } \frac{D2}{4} \pi \qquad 5387 \qquad \text{ft}^2$	RECOMMENDATION
Boiler Heat Capacity mmBTU/Hr.	
REMARKS	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

TABLE 2.3
SUMMARY OF FILTERABLE PARTICULATE EMISSIONS
HARSELL BAGHOUSE OUTLET

Dates: May 11 and 12, 2000	, 2000		P	lant: Ken	tucky Elect	Plant: Kentucky Electric Steel, Ashland, Kentucky	ntucky
		File	Filterable Particulate Matter	ate Matter			
N W	Date/Time	Conce	Concentration	Mass	Mass Rate	Molton Metal	Baghouse Pressure Drop
Vall 100	Date line	gr/dscf	lb/dscf	lb/hr <sup>c</sup>	lb/ton <sup>d</sup>	Tons/hr.	Inches Water (Range)
0-1	5/11 1355-1945	2.07E-03	2.96E-07	9.54	0.25	38.8	5.4 (5 - 6.1)
0.2	5/12 0630-1050	2.16E-03	3.09E-07	9.48	0.20	48	5.5 (5 - 5.8)
0.3	5/12 1050-1619	1.41E-03	2.01E-07	5.37	0.11	48	5.6 (5.2 - 5.8)
Average		1.88E-03	2.69E-07	8.13	0.19	45	5.5 (5 - 6.1)
*Grains per dry standard cubic foot Pounds per dry standard cubic foot Pound per hour Pounds per ton of steel produced							

TABLE 2.4. VISIBLE EMISSION OBSERVATION SUMMARY, MELT SHOP ROOF MONITOR

	TES	ST 1			TE	ST 2			TE	ST 3 _	
Time	٧E	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
13:59:00	0		Charge	7:15:00	0		Melt	12:18:00	5		Melt
13:59:15	0		Charge	7:15:15	0		Melt	12:18:15	15		Melt
13:59:30	Ö		Charge	7:15:30	0		Melt	12:18:30	15		Melt
13:59:45	0		Charge	7:15:45	0		Melt	12:18:45	15		Melt
14:00:00	5		Charge	7:16:00	0		Melt	12:19:00	30	<del>                                     </del>	Melt
14:00:15	5		Charge	7:16:15	0		Melt	12:19:15	30		Melt
14:00:30	5		Charge	7:16:30	0	"	Melt	12:19:30	30		Melt
14:00:45	5		Charge	7:16:45	0		Melt	12:19:45	30		Melt
14:01:00	5		Charge	7:17:00	0		Melt	12:20:00	35		Melt
14:01:15	0	Î	Charge	7:17:15	0		Melt	12:20:15	35		Melt
14:01:30	0	1	Charge	7:17:30	0		Melt	12:20:30	40		Melt
14:01:45	0		Charge	7:17:45	0		Melt	12:20:45	40		Melt
14:02:00	0		Charge	7:18:00	0		Melt	12:21:00	40		Melt
14:02:15	0		Charge	7:18:15	0		Melt	12:21:15	40		Melt
14:02:30	0		Charge	7:18:30	0		Melt	12:21:30	35		Melt
14:02:45	Ö		Charge	7:18:45	0		Melt	12:21:45	35		Melt
14:03:00	0		Charge	7:19:00	0		Meit	12:22:00	30		Melt
14:03:15	0		Charge	7:19:15	0		Melt	12:22:15	30		Melt
14:03:30	0		Charge	7:19:30	0		Melt	12:22:30	30		Melt
14:03:45	0		Charge	7:19:45	0		Melt	12:22:45	25		Melt
14:04:00	0		Charge	7:20:00	0		Melt	12:23:00	25		Melt
14:04:15	0		Charge	7:20:15	0		Melt	12:23:15	15		Melt
14:04:30	0		Charge	7:20:30	Ö		Melt	12:23:30	15		Melt
14:04:45	0		Charge	7:20:45	0	0.00	Melt	12:23:45	15	27.29	Melt
14:05:00	0		Charge	7:21:00	0	0.00	Melt	12:24:00	15	27.71	Melt
14:05:15	10		Charge	7:21:15	0	0.00	Melt	12:24:15	15	27.71	Melt
14:05:30	10		Charge	7:21:30	0	0.00	Melt	12:24:30	10	27.50	Melt
14:05:45	5		Charge	7:21:45	0	0.00	Melt	12:24:45	5	27.08	Melt
14:06:00	5		Charge	7:22:00	0	0.00	Melt	12:25:00	5	26.04	Melt
14:06:15	5		Charge	7:22:15	0	0.00	Melt	12:25:15	5	25.00	Melt
14:06:30	0	J .	Charge	7:22:30	0	0.00	Melt	12:25:30	5	23.96	Melt
14:06:45	0		Charge	7:22:45	0	0.00	Melt	12:25:45	5	22.92	Melt
14:07:00	0		Charge	7:23:00	0	0.00	Melt	12:26:00	5	21.67	Melt
14:07:15	0		Charge	7:23:15	0	0.00	Melt	12:26:15	0	20.21	Melt
14:07:30	0	1	Charge	7:23:30	0	0.00	Melt	12:26:30	0	18.54	Melt
14:07:45	0		Charge	7:23:45	0	0.00	Melt	12:26:45	0	16.88	Melt
14:08:00	0	1	Charge	7:24:00	0	0.00	Melt	12:27:00	0	15.21	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TE:	ST 3	
Tíme	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:08:15	0		Charge	7:24:15	0	0.00	Melt	12:27:15	0	13.54	Melt
14:08:30	0		Charge	7:24:30	0	0.00	Melt	12:27:30	0	12.08	Melt
14:08:45	0		Charge	7:24:45	0	0.00	Melt	12:27:45	0	10.63	Melt
14:09:00	0		Charge	7:25:00	0	0.00	Melt	12:28:00	0	9.38	Melt
14:09:15	0		Charge	7:25:15	0	0.00	Melt	12:28:15	0_	8.13	Melt
14:09:30	0		Charge	7:25:30	0	0.00	Melt	12:28:30	0	6.88	Melt
14:09:45	0		Charge	7:25:45	0	0.00	Melt	12:28:45	0	5.83	Melt
14:10:00	0_		Charge	7:26:00	0	0.00	Melt	12:29:00	0	4.79	Melt
14:10:15	0	_	Charge	7:26:15	0	0.00	Melt	12:29:15	0	4.17	Melt
14:10:30	0		Charge_	7:26:30	0	0.00	Melt	12:29:30	0	3.54	Melt
14:10:45	0		Charge	7.26:45	0	0.00	Melt	12:29:45	0	2.92	Melt
14:11:00	0		Charge	7:27:00	0	0.00	Melt	12:30:00	0	2.29	Melt
14:11:15	0		Charge	7:27:15	0	0.00	Melt	12:30:15	0	1.67	Melt
14:11:30	0		Charge	7:27:30	0	0.00	Melt	12:30:30	0	1.25	Melt
14:11:45	0		Charge	7:27:45	0	0.00	Melt	12:30:45	0	1.04	Melt
14:12:00	0		Charge	7:28:00	0	0.00	Melt	12:31:00	0		Charge
14:12:15	0		Charge	7:28:15	0	0.00	Melt	12:31:15	0		Charge
14:12:30	0		Charge	7:28:30	0	0.00	Melt	12:31:30	0		Charge
14:12:45	0		Charge	7:28:45	0	0.00	Melt	12:31:45	0		Charge
14:13:00	0	-	Charge	7:29:00	0	0.00	Melt	12:32:00	0		Charge
14:13:15	0		Charge	7:29:15	0	0.00	Melt	12:32:15	0		Charge
14:13:30	0		Charge	7:29:30	0	0.00	Melt	12:32:30	0		Charge
14:13:45	0		Charge	7:29:45	0	0.00	Melt	12:32:45	0		Charge
14:14:00	0		Charge	7:30:00	0		Tap	12:33:00	10		Charge
14:14:15	0		Charge	7:30:15	0		Tap	12:33:15	5		Charge
14:14:30	0		Charge	7:30:30	0		Tap	12:33:30	10		Charge
14:14:45	0		Charge	7:30:45	10		Tap_	12:33:45	15		Charge
14:15:00	0		Charge	7:31:00	0		Тар	12:34:00	5		Charge
14:15:15	0		Charge	7:31:15	0		Тар	12:34:15	5		Charge
14:15:30	5			7:31:30	0		Tap	12:34:30	5		Charge
14:15:45	5		Charge	7:31:45	10		Тар	12:34:45	5		Charge
14:16:00	5		Charge	7:32:00	10		Tap	12:35:00	0		Charge
14:16:15	. 5		Charge	7:32:15	5		Tap	12:35:15	0		Charge
14:16:30	5		Charge	7:32:30	5		Тар	12:35:30	5_		Charge
14:16:45	10		Charge	7:32:45	0		Тар	12:35:45	5		Charge
14:17:00	10		Charge	7:33:00	0		Tap	12:36:00	5		Charge
14:17:15	5		Charge	7:33:15	0		Tap	12:36:15	10		Charge
14:17:30	5		Charge	7:33:30	0		Tap	12:36:30	15		Charge
14:17:45	5		Charge	7:33:45	0		Tap	12:36:45	15		Charge
14:18:00	5		Charge	7:34:00	0		Tap	12:37:00	20		Charge
14:18:15	5		Charge	7:34:15	0		Тар	12:37:15	20		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:18:30	5		Charge	7:34:30	0		Тар	12:37:30	20		Charge
14:18:45	0		Charge	7:34:45	0		Tap	12:37:45	20	6.96	Charge
14:19:00	0		Charge	7:35:00	0		Tap	12:38:00	20		Melt
14:19:15	0		Charge	7:35:15	0		Тар	12:38:15	20		Melt
14:19:30	0		Charge	7:35:30	0		Тар	12:38:30	20		Melt
14:19:45	0		Charge	7:35:45	0		Tap	12:38:45	15		Melt
14:20:00	0		Charge	7:36:00	0		Tap	12:39:00	15		Melt
14:20:15	0		Charge	7:36:15	5		Тар	12:39:15	15		Melt
14:20:30	0		Charge	7:36:30	5		Тар	12:39:30	15		Melt
14:20:45	0		Charge	7:36:45	0	1.79	Tap	12:39:45	10		Melt
14:21:00	0		Charge	7:37:00	5		Charge	12:40:00	15		Melt
14:21:15	0		Charge	7:37:15	5		Charge	12:40:15	15		Melt
14:21:30	0		Charge	7:37:30	Ö		Charge	12:40:30	10		Melt
14:21:45	0		Charge	7:37:45	0		Charge	12:40:45	20		Melt
14:22:00	0		Charge	7:38:00	5		Charge	12:41:00	20		Melt
14:22:15	0		Charge	7:38:15	0		Charge	12:41:15	20		Melt
14:22:30	- 0		Charge	7:38:30	0		Charge	12:41:30	20		Melt
14:22:45	5		Charge	7:38:45	_0		Charge	12:41:45	15		Melt
14:23:00	5		Charge	7:39:00	0		Charge	12:42:00	15		Melt
14:23:15	5		Charge	7:39:15	10		Charge	12:42:15	15		Melt
14:23:30	10	1	Charge	7:39:30	5		Charge	12:42:30	5		Melt
14:23:45	10		Charge	7:39:45	5		Charge	12:42:45	5		Melt
14:24:00	- 5		Charge	7:40:00	0		Charge	12:43:00	5		Melt
14:24:15	0		Charge	7:40:15	10		Charge	12:43:15	5		Melt
14:24:30	0		Charge	7:40:30	_5		Charge	12:43:30	10		Melt
14:24:45	0		Charge	7:40:45	5		Charge	12:43:45	0	13.54	Melt
14:25:00	0		Charge	7:41:00	_5		Charge	12:44:00	0	12.71	Melt
14:25:15	5		Charge	7:41:15	_5		Charge	12:44:15	0	11.88	Melt
14:25:30	5		Charge	7:41:30	5		Charge	12:44:30	5	11.25	Melt
14:25:45	5		Charge	7:41:45	0		Charge	12:44:45	15	11.25	Melt
14:26:00	5		Charge	7:42:00	0		Charge	12:45:00	15	11.25	Melt
14:26:15	0		Charge	7:42:15	0		Charge	12:45:15	15	11.25	Melt
14:26:30	0		Charge	7:42:30	0		Charge	12:45:30	10	11.04	Melt
14:26:45	0		Charge	7:42:45	0		Charge	12:45:45	5	10.83	Melt
14:27:00			Charge	7:43:00	0		Charge	12:46:00	10		Тар
14:27:15	0		Charge	7:43:15	0		Charge	12:46:15	10		Tap
14:27:30	0		Charge	7:43:30	10		Charge	12:46:30	10		Tap
14:27:45	0		Charge	7:43:45	15		Charge	12:46:45	15		Тар
14:28:00			Charge	7:44:00	25		Charge	12:47:00	15		Tap
14:28:15		T	Charge	7:44:15	35		Charge	12:47:15	10		Тар
14:28:30		1	Charge	7:44:30	35	1	Charge	12:47:30	15		Tap

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TES	ST 2			TES	T 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:28:45	0	Ť	Charge	7:44:45	35		Charge	12:47:45	30		Тар
14:29:00	0		Charge	7:45:00	35		Charge	12:48:00	25		Тар
14:29:15	0		Charge	7:45:15	40		Charge	12:48:15	25		Тар
14:29:30	O		Charge	7:45:30	35		Charge	12:48:30	25		Тар
14:29:45	0		Charge	7:45:45	35		Charge	12:48:45	30		Tap_
14:30:00	0		Charge	7:46:00	30		Charge	12:49:00	30		Тар
14:30:15	0		Charge	7:46:15	30		Charge	12:49:15	25		Tap
14:30:30	0		Charge	7:46:30	30		Charge	12:49:30	25		Tap
14:30:45	0		Charge	7:46:45	25		Charge	12:49:45	25		Tap
14:31:00	0		Charge	7:47:00	25		Charge	12:50:00	30		Tap
14:31:15	5		Charge	7:47:15	20		Charge	12:50:15	25		Tap
14:31:30	10	1	Charge	7:47:30	20		Charge	12:50:30	25		Тар
14:31:45	10		Charge	7:47:45	15		Charge	12:50:45	20		Тар
14:32:00	5		Charge	7:48:00	15		Charge	12:51:00	15		Tap
14:32:15	5	<del>-</del>	Charge	7:48:15	10		Charge	12:51:15	15		Tap
14:32:30	5	<del>                                     </del>	Charge	7:48:30	20_		Charge	12:51:30	10		Тар
14:32:45	0		Charge	7:48:45	25		Charge	12:51:45	5		Tap
14:33:00	0	_	Charge	7:49:00	20		Charge	12:52:00	5		Tap
14:33:15	0		Charge	7:49:15	5		Charge	12:52:15	10		Tap
14:33:30	0		Charge	7:49:30	5		Charge	12:52:30	5		Tap
14:33:45	0		Charge	7:49:45	5		Charge	12:52:45	5		Тар
14:34:00	0		Charge	7:50:00	5_		Charge	12:53:00	0		Tap
14:34:15	0		Charge	7:50:15	5		Charge	12:53:15	0		Tap
14:34:30	0		Charge	7:50:30	0		Charge	12:53:30	0		Tap
14:34:45	0		Charge	7:50:45	0		Charge	12:53:45	0	15.47	Tap
14:35:00	0		Charge	7:51:00	0		Charge	12:54:00	0		Charge
14:35:15	5		Charge	7:51:15	30		Charge	12:54:15	0		Charge
14:35:30	5		Charge	7:51:30	30		Charge	12:54:30	0		Charge
14:35:45	0		Charge	7:51:45	40		Charge	12:54:45	0		Charge
14:36:00	0		Charge	7:52:00	35		Charge	12:55:00	0		Charge
14:36:15			Charge	7:52:15	25		Charge	12:55:15	25		Charge
14:36:30	0		Charge	7:52:30	20		Charge	12:55:30	35		Charge
14:36:45	0		Charge	7:52:45	20		Charge	12:55:45	30		Charge
14:37:00	5		Charge	7:53:00	10		Charge		30		Charge
14:37:15	0		Charge	7:53:15	0		Charge	12:56:15	25		Charge
14:37:30	0		Charge	7:53:30	0		Charge	12:56:30	30		Charge
14:37:45		1.60	Charge	7:53:45	0		Charge	12:56:45	30		Charge
14:38:00	-		Тар	7:54:00	10		Charge	12:57:00	30		Charge
14:38:15	0		Тар	7:54:15	10		Charge	12:57:15	35		Charge
14:38:30			Тар	7:54:30	10		Charge	12:57:30	35		Charge
14:38:45		T	Тар	7:54:45	10		Charge	12:57:45	30		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

<u> </u>	TES	T 1		<u> </u>	TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:39:00	0		Тар	7:55:00	10		Charge	12:58:00	25		Charge
14:39:15	0		Тар	7:55:15	0		Charge	12:58:15	25		Charge
14:39:30	0		Tap	7:55:30	0		Charge	12:58:30	20		Charge
14:39:45	0		Тар	7:55:45	0		Charge	12:58:45	20		Charge
14:40:00	0		Tap	7:56:00	0		Charge	12:59:00	10		Charge
14:40:15	0		Tap	7:56:15	0		Charge	12:59:15	10	_	Charge
14:40:30	0		Tap	7:56:30	0		Charge	12:59:30	5		Charge
14:40:45	5		Тар	7:56:45	15		Charge	12:59:45	5		Charge
14:41:00	5		Тар	7:57:00	15		Charge	13:00:00	0	_	Charge
14:41:15	5		Тар	7:57:15	10		Charge	13:00:15	0		Charge
14:41:30	10		Tap	7:57:30	0		Charge	13:00:30	0		Charge
14:41:45	10_		Tap	7:57:45	0		Charge	13:00:45	0	-	Charge
14:42:00	5_		Тар	7:58:00	0		Charge	13:01:00	0		Charge
14:42:15	5		Тар	7:58:15	15		Charge	13:01:15	0		Charge
14:42:30	5_		Tap_	7:58:30	10		Charge	13:01:30	0		Charge
14:42:45	0		Тар	7:58:45	10		Charge	13:01:45	0	_	Charge
14:43:00	0		Tap	7:59:00	10		Charge	13:02:00	0		Charge
14:43:15	10		Тар	7:59:15	5		Charge	13:02:15	0		Charge
14:43:30	10		Тар	7:59:30	0		Charge	13:02:30	0		Charge
14:43:45	15		Тар	7:59:45	0	11.20	Charge	13:02:45	0		Charge
14:44:00	15		Tap	8:00:00	0		Melt	13:03:00	0		Charge
14:44:15	15_		Тар	8:00:15	0		Melt	13:03:15	0		Charge
14:44:30	15		Тар	8:00:30	0		Melt	13:03:30	0		Charge
14:44:45	10	5.00	Тар	8:00:45	0_		Melt	13:03:45	0	11.38	Charge
14:45:00	10		Charge	8:01:00	0		Melt	13:04:00	0		Melt
14:45:15	15		Charge	8:01:15	0		Melt	13:04:15	0		Melt
14:45:30	15		Charge	8:01:30	0		Meit	13:04:30	0		Melt
14:45:45	15		Charge	8:01:45	0		Melt	13:04:45	Ō		Melt
14:46:00	15		Charge	8:02:00	0	!	Melt _	13:05:00	0		Melt
14:46:15	20_		Charge	8:02:15	0		Melt	13:05:15	0		Melt
14:46:30	20		Charge	8:02:30	0		Melt	13:05:30	0		Melt
14:46:45	20		Charge	8:02:45	0		Melt	13:05:45	0		Melt
14:47:00	20		Charge	8:03:00	0		Melt	13:06:00	0		Melt
14:47:15	15		Charge	8:03:15	0		Melt	13:06:15	0		Melt
14:47:30	15		Charge	8:03:30	0		Melt	13:06:30	0		Melt
14:47:45	15		Charge	8:03:45	0		Melt	13:06:45	0		Melt
14:48:00	10		Charge	8:04:00	0		Melt	13:07:00	0		Melt
14:48:15	10		Charge	8:04:15	0		Melt	13:07:15	0		Melt
14:48:30	5		Charge	8:04:30	0		Melt	13:07:30	0		Melt
14:48:45	5		Charge	8:04:45	0		Melt	13:07:45	0		Melt
14:49:00	5		Charge	8:05:00	0		Melt	13:08:00	0		Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1		<del></del>	TE	ST 2			TES	ST 3	-
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
14:49:15	5		Charge	8:05:15	0		Melt	13:08:15	0		Melt
14:49:30	10		Charge	8:05:30	0		Melt	13:08:30	0		Melt
14:49:45	15		Charge	8:05:45	0	0.00	Melt	13:08:45	0		Melt
14:50:00	10		Charge	8:06:00	0	0.00	Melt	13:09:00	0		Melt
14:50:15	10		Charge	8:06:15	0	0.00	Melt	13:09:15	0		Melt
14:50:30	10		Charge	8:06:30	0	0.00	Melt	13:09:30	0		Melt
14:50:45	15		Charge	8:06:45	0	0.00	Melt	13:09:45	0	0.00	Melt
14:51:00	15		Charge	8:07:00	0	0.00	Melt	13:10:00	0	0.00	Melt
14:51:15	10		Charge	8:07:15	0	0.00	Melt	13:10:15	0	0.00	Melt
14:51:30	5		Charge	8:07:30	0	0.00	Melt	13:10:30	0	0.00	Melt
14:51:45	5		Charge	8:07:45	0	0.00	Melt	13;10:45	0	0.00	Melt
14:52:00	5		Charge	8:08:00	0	0.00	Melt	13:11:00	0	0.00	Melt
14:52:15	10		Charge	8:08:15	0	0.00	Melt	13:11:15	0	0.00	Melt
14:52:30	15		Charge	8:08:30	0	0.00	Melt	13:11:30	0	0.00	Melt
14:52:45	20		Charge	8:08:45	0	0.00	Melt	13:11:45	0	0.00	Melt
14:53:00	15		Charge	8:09:00	0	0.00	Melt	13:12:00	0	0.00	Melt
14:53:15	10		Charge	8:09:15	0	0.00	Melt	13:12:15	0	0.00	Melt
14:53:30	10		Charge	8:09:30	0	0.00	Melt	13:12:30	0,	0.00	Melt
14:53:45	5		Charge	8:09:45	0	0.00	Melt	13:12:45	0	0.00	Melt
14:54:00	5		Charge	8:10:00	0	0.00	Melt	13:13:00	0	0.00	Melt
14:54:15	5		Charge	8:10:15	0	0.00	Melt	13:13:15	0	,0.00	Melt
14:54:30	5		Charge	8:10:30	0	0.00	Melt	13:13:30	0	0.00	Melt
14:54:45	5		Charge	8:10:45	0	0.00	Melt	13:13:45	0	0.00	Melt
14:55:00	5		Charge	8:11:00	0	0.00	Melt	13:14:00	0	0.00	Melt
14:55:15	0		Charge	8:11:15	0	0.00	Melt	13:14:15	0	0.00	Melt
14:55:30	0		Charge	8:11:30	0	0.00	Melt	13:14:30	0	0.00	Melt
14:55:45	0	10.34	Charge	8:11:45	0	0.00	Melt	13:14:45	0	0.00	Melt
14:56:00	0		Melt	8:12:00	0	0.00	Melt	13:15:00	0	0.00	Melt
14:56:15	0		Melt	8:12:15	0	0.00	Melt	13:15:15	0	0.00	Melt
14:56:30	0		Melt	8:12:30	0	0.00	Melt	13:15:30	0	0.00	Melt
14:56:45	0		Melt	8:12:45	0	0.00	Melt	13:15:45	0	0.00	Melt
14:57:00	0		Melt	8:13:00	0	0.00	Meit	13:16:00	0	0.00	Melt
14:57:15	0		Melt	8:13:15	0	0.00	Melt	13:16:15	0	0.00	Melt
14:57:30	0		Melt	8:13:30	0	0.00	Melt	13:16:30	0	0.00	Melt
14:57:45	0		Melt	8:13:45	0	0.00	Melt_	13:16:45	0	0.00	Melt
14:58:00	0		Melt	8:14:00	0	0.00	Melt	13:17:00	0	0.00	Melt
14:58:15	0		Melt	8:14:15	0	0.00	Melt	13:17:15	0	0.00	Melt
14:58:30	0		Melt	8:14:30	0	0.00	Melt	13:17:30	0	0.00	Melt
14:58:45	0		Melt	8:14:45	0	0.00	Melt	13:17:45	0	0.00	Melt
14:59:00	0		Melt	8:15:00	0	0.00	Melt	13:18:00	0	0.00	Melt
14:59:15	0		Melt	8:15:15	0	0.00	Melt	13:18:15	0	0.00	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	Т1			TE	ST 2	···		TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-mln Avg	Activity	Time	VE	6-min Avg	Activity
14:59:30	0		Melt	8:15:30	0	0.00	Melt	13:18:30	0	0.00	Melt
14:59:45	10		Melt	8:15:45	0	0.00	Melt	13:18:45	0	0,00	Melt
15:00:00	10		Melt	8:16:00	0	0.00	Melt	13:19:00	0	0.00	Melt
15:00:15	5		Melt	8:16:15	0	0.00	Melt	13:19:15	0	0.00	Melt
15:00:30	5		Melt	8:16:30	0	0.00	Melt	13:19:30	0	0.00	Melt
15:00:45	5		Melt	8:16:45	0	0.00	Melt	13:19:45	. 0	0.00	Melt
15:01:00	5	_	Melt	8:17:00	0	0.00	Melt	13:20:00	0	0.00	Melt
15:01:15	0		Melt	8:17:15	0	0.00	Melt	13:20:15	0	0.00	Melt
15:01:30	0		Melt	8:17:30	0	0.00	Melt	13:20:30	0	0.00	Melt
15:01:45	0	1.67	Melt	8:17:45	0	0.00	Melt	13:20:45	0	0.00	Melt
15:02:00	0	1.67	Melt	8:18:00	0	0.00	Melt	13:21:00	0	0.00	Melt
15:02:15	0	1.67	Melt	8:18:15	0	0.00	Melt	13:21:15	0	0.00	Melt
15:02:30	0	1.67	Melt	8:18:30	0	0.00	Melt	13:21:30	0	0.00	Melt
15:02:45	0	1.67	Melt	8:18:45	0	0.00	Melt	13:21:45	0	0.00	Melt
15:03:00	0	1.67	Melt	8:19:00	0	0.00	Melt	13:22:00	0	0.00	Melt
15:03:15	0	1.67	Meit	8:19:15	0	0.00	Meit	13:22:15	0	0.00	Melt
15:03:30	0	1.67	Melt	8:19:30	0	0.00	Melt	13:22:30	0 :	0.00	Melt
15:03:45	0	1.67	Melt	8:19:45	0	0.00	Melt	13:22:45	0′	0.00	Melt
15:04:00	0	1.67	Melt	8:20:00	0	0.00	Melt	13:23:00	0	0.00	Melt
15:04:15	0	1.67	Melt	8:20:15	0	0.00	Melt	13:23:15	0	0.00	Melt
15:04:30	0	1.67	Melt	8:20:30	0	0.00_	Melt	13:23:30	0	0.00	Melt
15:04:45	0	1.67	Melt	8:20:45	0	0.00	Melt	13:23:45	0	0.00	Melt
15:05:00	0	1.67	Melt	8:21:00	0	0.00	Melt	13:24:00	0	0.00	Melt
15:05:15	0	1.67	Melt	8:21:15	0	0.00	Melt	13:24:15	0	0.00	Melt
15:05:30	0	1.67	Melt	8:21:30	0	0.00	Melt	13:24:30	0	0.00	Melt
15:05:45	0	1.25	Melt	8:21:45	0	0.00	Melt	13:24:45	0	0.00	Melt
15:06:00	0	0.83	Melt	8:22:00	0	0.00	Melt	13:25:00	0		Тар
15:06:15	0	0.63	Melt	8:22:15	0	0.00	Melt	13:25:15	0		Tap
15:06:30	0	0.42	Melt_	8:22:30	0	0.00	Melt	13:25:30	0		Тар
15:06:45	0	0.21	Melt	8:22:45	0_	0.00	Melt	13:25:45	0		Tap
15:07:00	0	0.00	Melt	8:23:00	0	0.00	Melt	13:26:00	15		Tap
15:07:15	0	0.00	Melt	8:23:15	0	0.00	Melt	13:26:15	15		Tap
15:07:30	0	0.00	Melt	8:23:30	0	0.00	Melt	13:26:30	10		Tap
15:07:45	Ô	0.00	Melt	8:23:45	0	0.00	Meit	13:26:45	5		Тар
15:08:00	0	0.00	Melt	8:24:00	0	0.00	Melt	13:27:00	10		Тар
15:08:15	5	0.21	Melt	8:24:15	0_	0.00	Melt	13:27:15	5		Тар
15:08:30	5	0.42	Melt	8:24:30	0	0.00	Melt	13:27:30	0		Тар
15:08:45	5	0.63	Melt	8:24:45	0	0.00	Melt	13:27:45	10		Тар
15:09:00	5	0.83	Melt	8:25:00	0	0.00	Melt	13:28:00	5		Tap
15:09:15	0	0.83	Melt	8:25:15	0	0.00	Melt	13:28:15	5		Тар
15:09:30	Q	0.83	Melt	8:25:30	0	0.00	Melt	13:28:30	0		Tap

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:09:45	0	0.83	Melt	8:25:45	0	0.00	Melt	13:28:45	0		Тар
15:10:00	0		Тар	8:26:00	0	0.00	Melt	13:29:00	0		Tap
15:10:15	0		Tap	8:26:15	0	0.00	Melt	13:29:15	0		Tap
15:10:30	0		Тар	8:26:30	0	0.00	Melt	13:29:30	0		Тар
15:10:45	5		Тар	8:26:45	0	0.00	Melt	13:29:45	0		Тар
15:11:00	5		Tap	8:27:00	0_	0.00	Melt	13:30:00	0		Тар
15:11:15	10		Тар	8:27:15	0	0.00	Melt	13:30:15	0		Тар
15:11:30	20		Тар	8:27:30	0	0.00	Melt	13:30:30	0		Тар
15:11:45	15		Тар	8:27:45	0	0.00	Melt	13:30:45	0		Тар
15:12:00	15		Tap	8:28:00	0	0.00	Melt	13:31:00	0		Тар
15:12:15	15		Тар	8:28:15	0	0.00	Melt	13:31:15	0		Tap
15:12:30	10		Тар	8:28:30	0	0.00	Melt	13:31:30	0		Тар
15:12:45	10		Tap	8:28:45	0	0.00	Melt	13:31:45	0		Тар
15:13:00	15		Тар	8:29:00	0	0.00	Melt	13:32:00	0		Тар
15:13:15	15		Tap	8:29:15	0	0.00	Melt	13:32:15	0		Tap
15:13:30	15		Тар	8:29:30	0	0.00	Mett	13:32:30	0		Tap
15:13:45	15		Тар	8:29:45	0	0.00	Melt	13:32:45	0	2.50	Тар
15:14:00	10		Тар	8:30:00	0		Charge	13:33:00	0		Charge
15:14:15	5		Tap	8:30:15	0		Charge	13:33:15	0		Charge
15:14:30	5		Tap	8:30:30	25		Charge	13:33:30	0		Charge
15:14:45	5		Tap	8:30:45	30		Charge	13:33:45	0		Charge
15:15:00	5		Тар	8:31:00	25		Charge	13:34:00	0		Charge
15:15:15	0		Tap	8:31:15	25		Charge	13:34:15	0		Charge
15:15:30	0		Тар	8:31:30	10		Charge	13:34:30	0		Charge
15:15:45	0		Тар	8:31:45	40		Charge	13:34:45	0		Charge
15:16:00	0		Тар	8:32:00	30		Charge	13:35:00	0		Charge
15:16:15	0		Тар	8:32:15	25		Charge	13:35:15	0		Charge
15:16:30	10		· Tap	8:32:30	20		Charge	13:35:30	0		Charge
15:16:45	10	7.68	Тар	8:32:45	15		Charge	13:35:45	0		Charge
15:17:00	5		Charge	8:33:00	5		Charge	13:36:00	0		Charge
15:17:15	5		Charge	8:33:15	0		Charge	13:36:15	0		Charge
15:17:30	5		Charge	8:33:30	0		Charge	13:36:30	0		Charge
15:17:45	0		Charge	8:33:45	0		Charge	13:36:45	0		Charge
15:18:00	0		Charge	8:34:00	0		Charge	13:37:00	0		Charge
15:18:15	0		Charge	8:34:15	0		Charge	13:37:15	0		Charge
15:18:30	0		Charge	8:34:30	0		Charge	13:37:30	0		Charge
15:18:45	0		Charge	8:34:45	0		Charge	13:37:45	0		Charge
15:19:00	0		Charge	8:35:00	0		Charge	13:38:00	0		Charge
15:19:15	0		Charge	8:35:15	0		Charge	13:38:15	0		Charge
15:19:30	Ő		Charge	8:35:30	0		Charge	13:38:30	0		Charge
15:19:45	0		Charge	8:35:45	0	10.42	Charge	13:38:45	0		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2		1	TE	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:20:00	0		Charge	8:36:00	0		Melt	13:39:00	0	7.19	Charge
15:20:15	0		Charge	8:36:15	0		Melt	13:39:15	0	<del>-</del>	Charge
15:20:30	0		Charge	8:36:30	0	î —	Melt	13:39:30	0	<del>                                     </del>	Charge
15:20:45	_0		Charge	8:36:45	0		Meit	13:39:45	0		Charge
15:21:00	0		Charge	8:37:00	0		Melt	13:40:00	20		Charge
15:21:15	0		Charge	8:37:15	0		Melt	13:40:15	35		Charge
15:21:30	0		Charge	8:37:30	0		Melt	13:40:30	35		Charge
15:21:45	0		Charge	8:37:45	0		Melt	13:40:45	30		Charge
15:22:00	0		Charge	8:38:00	0		Melt	13:41:00	30		Charge
15:22:15	0		Charge	8:38:15	0		Melt	13:41:15	25		Charge
15:22:30	0		Charge	8:38:30	0		Melt	13:41:30	30		Charge
15:22:45	0		Charge	8:38:45	0		Melt	13:41:45	20		Charge
15:23:00	0		Charge	8:39:00	0		Melt	13:42:00	25		Charge
15:23:15	0		Charge	8:39:15	0		Melt	13:42:15	25		Charge
15:23:30	0		Charge	8:39:30	0		Melt	13:42:30	30		Charge
15:23:45	0		Charge	8:39:45	0		Melt	13:42:45	20		Charge
15:24:00	0		Charge	8:40:00	0		Melt	13:43:00	20		Charge
15:24:15	10		Charge	8:40:15	_0		Melt	13:43:15	20		Charge
15:24:30	10		Charge	8:40:30	0		Melt	13:43:30	15		Charge
15:24:45	5		Charge	8:40:45	0		Melt	13:43:45	20		Charge
15:25:00	5		Charge	8:41:00	0		Melt	13:44:00	20		Charge
15:25:15	5		Charge	8:41:15	0		Melt	13:44:15	20		Charge
15:25:30	5		Charge	8:41:30	0		Melt	13:44:30	15		Charge
15:25:45	10		Charge	8:41:45	0	0.00	Melt	13:44:45	15		Charge
15:26:00	10		Charge	8:42:00	0	0.00	Melt	13:45:00	20		Charge
15:26:15	10		Charge	8:42:15	0	0.00	Melt	13:45:15	15		Charge
15:26:30	5		Charge	8:42:30	0	0.00	Melt	13:45:30	15		Charge
15:26:45	5		Charge	8:42:45	0	0.00	Melt	13:45:45	10		Charge
15:27:00	5		Charge	8:43:00	0	0.00	Melt	13:46:00	10		Charge
15:27:15	0		Charge	8:43:15	0	0.00	Melt	13:46:15	10		Charge
15:27:30	0		Charge	8:43:30	0	0.00	Melt	13:46:30	10		Charge
15:27:45	0			8:43:45	0	0.00	Melt	13:46:45	15		Charge
15:28:00	0		Charge	8:44:00	0	0.00	Melt	13:47:00	15		Charge
15:28:15	0		Charge	8:44:15	0	0.00	Melt	13:47:15	15		Charge
15:28:30	0			8:44:30	0	0.00	Melt	13:47:30	15		Charge
15:28:45	0			8:44:45	0	0.00	Melt	13:47:45	5		Charge
15:29:00	0			8:45:00	15		Тар	13:48:00	10		Charge
15:29:15	0			8:45:15	15		Тар	13:48:15	5		Charge
15:29:30	0			8:45:30	15		Tap	13:48:30	5		Charge
15:29:45	0			8:45:45	20		Тар	13:48:45	10		Charge
15:30:00	0		Charge	8:46:00	15		Тар	13:49:00	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:30:15	0		Charge	8:46:15	15		Тар	13:49:15	5		Charge
15:30:30	0		Charge	8:46:30	20		Тар	13:49:30	0		Charge
15:30:45	0		Charge	8:46:45	20		Тар	13:49:45	0		Charge
15:31:00	0		Charge	8:47:00	20		Tap	13:50:00	0		Charge
15:31:15	0		Charge	8:47:15	20		Tap	13:50:15	0		Charge
15:31:30	5		Charge	8:47:30	25		Тар	13:50:30	0		Charge
15:31:45	10		Charge	8:47:45	30		Тар	13:50:45	10		Charge
15:32:00	10		Charge	8:48:00	25		Tap	13:51:00	10		Charge
15:32:15	5		Charge	8:48:15	25		Тар	13:51:15	10		Charge
15:32:30	5		Charge	8:48:30	30		Tap	13:51:30	15		Charge
15:32:45	5		Charge	8:48:45	25		Tap_	13:51:45	15		Charge
15:33:00	0		Charge	8:49:00	25		Tap	13:52:00	20		Charge
15:33:15	0		Charge	8:49:15	25		Тар	13:52:15	20		Charge
15:33:30	0		Charge	8:49:30	25		Tap	13:52:30	15		Charge
15:33:45	0		Charge	8:49:45	20		Тар	13:52:45	15		Charge
15:34:00	0		Charge	8:50:00	15		Тар	13:53:00	10		Charge
15:34:15	0		Charge	8:50:15	10		Тар	13:53:15	10		Charge
15:34:30	Ö		Charge	8:50:30	10		Tap	13:53:30	5		Charge
15:34:45	0		Charge	8:50:45	5	19.58	Тар	13:53:45	5		Charge
15:35:00	0		Charge	8:51:00	0		Charge	13:54:00	5		Charge
15:35:15	0		Charge	8:51:15	0		Charge	13:54:15	0		Charge
15:35:30	0		Charge	8:51:30	0		Charge	13:54:30	0		Charge
15:35:45	0		Charge	8:51:45	0		Charge	13:54:45	0		Charge
15:36:00	0		Charge	8:52:00	0		Charge	13:55:00	0		Charge
15:36:15	0		Charge	8:52:15	10		Charge	13:55:15	0		Charge
15:36:30	0		Charge	8:52:30	10		Charge	13:55:30	0		Charge
15:36:45	0		Charge	8:52:45	5_		Charge	13:55:45_	0		Charge
15:37:00	0		Charge	8:53:00	0		Charge	13:56:00	0		Charge
15:37:15	0		Charge	8:53:15	0		Charge	13:56:15	0		Charge
15:37:30	0		Charge	8:53:30	0		Charge	13:56:30	0	-	Charge
15:37:45	0		Charge	8:53:45	0		Charge	13:56:45	0		Charge
15:38:00	0		Charge	8:54:00	0		Charge	13:57:00	0		Charge
15:38:15	0		Charge	8:54:15	0		Charge	13:57:15	0		Charge
15:38:30	0		Charge	8:54:30	0		Charge	13:57:30	0		Charge
15:38:45	0		Charge	8:54:45	0		Charge	13:57:45	0		Charge
15:39:00	0		Charge	8:55:00	0		Charge	13:58:00	0		Charge
15:39:15	5		Charge	8:55:15	0		Charge	13:58:15	0		Charge
15:39:30	5		Charge	8:55:30	0		Charge	13:58:30	0		Charge
15:39:45	5		Charge	8:55:45	0		Charge	13:58:45	0		Charge
15:40:00	5		Charge	8:56:00	0		Charge	13:59:00	0		Charge
15:40:15	0		Charge	8:56:15	0		Charge	13:59:15	0		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1		Γ	TE	ST 2	<del></del> ,	T -	TE	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:40:30	0		Charge	8:56:30	0		Charge	13:59:30	0		Charge
15:40:45	0		Charge	8:56:45	0		Charge		0	<del> </del>	Charge
15:41:00	0		Charge	8:57:00	0		Charge		0	<del>                                     </del>	Charge
15:41:15	0		Charge	8:57:15	0		Charge		0		Charge
15:41:30			Charge	8:57:30	0		Charge		0		Charge
15:41:45			Charge	8:57:45	0		Charge	14:00:45	0		Charge
15:42:00	0		Charge	8:58:00	0		Charge	14:01:00	0		Charge
15:42:15	0		Charge	8:58:15	0		Charge	14:01:15	0		Charge
15:42:30	0		Charge	8:58:30	.0		Charge	14:01:30	0		Charge
15:42:45		1.54	Charge	8:58:45	0		Charge	14:01:45	0		Charge
15:43:00	0		Melt	8:59:00	10		Charge	14:02:00	0		Charge
15:43:15	0 .		Melt	8:59:15	15		Charge	14:02:15	0		Charge
15:43:30	0		Melt	8:59:30	15		Charge	14:02:30	0		Charge
15:43:45	0		Melt	8:59:45	0		Charge	14:02:45	0		Charge
15:44:00	0		Melt	9:00:00	0		Charge	14:03:00	10		Charge
15:44:15	0		Melt	9:00:15	0		Charge	14:03:15	15	_	Charge
15:44:30	0		Melt	9:00:30	0		Charge	14:03:30	20		Charge
15:44:45	0		Melt	9:00:45	0		Charge	14:03:45	20		Charge
15:45:00	0		Melt	9:01:00	0		Charge	14:04:00	20		Charge
15:45:15	0		Melt	9:01:15	0		Charge	14:04:15	20		Charge
15:45:30	0		Melt	9:01:30	0		Charge	14:04:30	15		Charge
15:45:45	0		Melt	9:01:45	0		Charge	14:04:45	15		Charge
15:46:00	0		Melt	9:02:00	0		Charge	14:05:00	15		Charge
15:46:15	0		Melt	9:02:15	0		Charge	14:05:15	15		Charge
15:46:30	0		Melt	9:02:30	0		Charge	14:05:30	20		Charge
15:46:45	0		Melt	9:02:45	0		Charge	14:05:45	25		Charge
15:47:00	0		Melt	9:03:00	0		Charge	14:06:00	30	_	Charge
15:47:15	0		Melt	9:03:15	0		Charge	14:06:15	30		Charge
15:47:30	0		Melt	9:03:30	0		Charge	14:06:30	35		Charge
15:47:45	0		Melt	9:03:45	0	1.25	Charge	14:06:45	40		Charge
15:48:00	LMF Cond		Melt	9:04:00	0		Melt	14:07:00	40		Charge
15:48:15	LMF Cond		Melt	9:04:15	0		Melt	14:07:15	40		Charge
15:48:30	LMF Cond		Melt	9:04:30	0		Melt	14:07:30	50		Charge
15:48:45	LMF Cond	T	Melt	9:04:45	0		Melt	14:07:45	40		Charge
15:49:00	LMF Cond		Melt	9:05:00	0		Melt	14:08:00	40		Charge
15:49:15	LMF Cond		Melt	9:05:15	0		Melt	14:08:15	30		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TE	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
15:49:30	LMF Cond		Melt	9:05:30	0		Melt	14:08:30	40		Charge
15:49:45	LMF Cond		Melt	9:05:45	0		Melt	14:08:45	30		Charge
15:50:00	LMF Cond		Melt	9:06:00	10		Melt	14:09:00	30		Charge
15:50:15	0		Melt	9:06:15	0		Melt	14:09:15	30		Charge
15:50:30	0		Melt	9:06:30	0		Melt	14:09:30	30		Charge
15:50:45	0		Melt	9:06:45	0		Melt	14:09:45	30		Charge
15:51:00	0		_ Melt	9:07:00	0		Melt	14:10:00	25		Charge
15:51:15	0		Melt	9:07:15	Ö		Melt	14:10:15	25		Charge
15:51:30	5		Melt	9:07:30	0		Melt	14:10:30	25		Charge
15:51:45	5		Melt	9:07:45	10		Melt	14:10:45	25		Charge
15:52:00	5		Melt	9:08:00	0		Melt	14:11:00	15		Charge
15:52:15	5		Melt	9:08:15	0		Melt	14:11:15	10		Charge
15:52:30	5		Melt	9:08:30	0		Melt	14:11:30	10		Charge
15:52:45	0		Melt	9:08:45	0		Melt	14:11:45	10		Charge
15:53:00	0		Melt	9:09:00	0		Melt	14:12:00	5		Charge
15:53:15	0		Melt	9:09:15	0		Melt	14:12:15	5		Charge
15:53:30	0		Melt	9:09:30	0		Melt	14:12:30	0		Charge
15:53:45	10		Melt	9:09:45	0	0.83	Melt	14:12:45	15		Charge
15:54:00	15		Melt	9:10:00	0	0.83	Melt	14:13:00	15		Charge
15:54:15	10		Melt	9:10:15	0	0.83	Melt	14:13:15	20		Charge
15:54:30	25		Melt	9:10:30	0	0.83	Melt	14:13:30	20		Charge
15:54:45	70		Melt	9:10:45	0	0.83	Melt	14:13:45	20		Charge
15:55:00	75		Melt	9:11:00	0	0.83	Melt	14:14:00	20		Charge
15:55:15	80		Melt	9:11:15	0	0.83	Melt	14:14:15	25		Charge
15:55:30	70		Melt	9:11:30	Ö	0.83	Melt	14:14:30	25		Charge
15:55:45	65	19.35	Melt	9:11:45	0	0.83	Melt	14:14:45	20		Charge
15:56:00	75	21.67	Melt	9:12:00	0	0.42	Melt	14:15:00	15		Charge
15:56:15	90	25.42	Melt	9:12:15	0	0.42	Melt	14:15:15	15		Charge
15:56:30	85	28.96	Melt	9:12:30	0	0.42	Melt	14:15:30	15		Charge
15:56:45	80	32.29	Melt	9:12:45	0	0.42	Melt	14:15:45	10		Charge
15:57:00	70	35.21	Melt	9:13:00	0	0.42	Melt	14:16:00	10		Charge
15:57:15	50	37.29	Melt	9:13:15	0	0.42	Melt	14:16:15	20		Charge
15:57:30	50	39.17	Melt	9:13:30	0	0.42	Melt	14:16:30	20		Charge
15:57:45	50	41.04	Melt	9:13:45	0	0.00	Melt	14:16:45	10		Charge
15:58:00	60	43.33	Melt	9:14:00	0	0.00	Melt	14:17:00	20		Charge
15:58:15	60	45.63	Melt	9:14:15	0	0.00	Melt	14:17:15	15		Charge
15:58:30	70	48.33	Melt	9:14:30	0	0.00	Melt	14:17:30	15		Charge
15:58:45	65	51.04	Melt	9:14:45	0	0.00	Melt	14:17:45	15	11.81	Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	ST 1		·· <del>·</del>	TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-mln Avg	Activity
15:59:00	65	53.75	Melt	9:15:00	0	0.00	Meit	14:18:00	10		Melt
15:59:15	65	56.46	Melt	9:15:15	0	0.00	Melt	14:18:15	10		Melt
15:59:30	60	58.96	Melt	9:15:30	0	0.00	Melt	14:18:30	10		Melt
15:59:45	50	60.63	Melt	9:15:45	0	0.00	Melt	14:18:45	15		Melt
16:00:00	40	61.67	Melt	9:16:00	0	0.00	Melt	14:19:00	15		Melt
16:00:15	35_	62.71	Melt	9:16:15	0	0.00	Melt	14:19:15	15		Melt
16:00:30	25	62.71	Melt	9:16:30	0	0.00	Melt	14:19:30	15		Melt
16:00:45	20	60.63	Melt	9:16:45	0	0.00	Melt	14:19:45	15		Melt
16:01:00	20	58.33	Melt	9:17:00	0	0.00	Melt	14:20:00	15		Melt
16:01:15	15	55.63	Melt	9:17:15	0	0.00	Melt	14:20:15	15		Melt
16:01:30	15	53.33	Melt	9:17:30	0	0.00	Melt	14:20:30	15		Melt
16:01:45	15	51.25	Melt	9:17:45	0	0.00	Melt	14:20:45	15		Melt
16:02:00	15	48.75	Melt	9:18:00	0	0.00	Melt	14:21:00	15		Melt
16:02:15	10	45.42	Melt	9:18:15	0	0.00	Melt	14:21:15	15		Melt
16:02:30	10_	42.29	Melt	9:18:30	0	0.00	Melt	14:21:30	15		Melt
16:02:45	5	39.17	Melt	9:18:45	0	0.00	Melt	14:21:45	15		Melt
16:03:00	5	36.46	Melt	9:19:00	0	0.00	Melt	14:22:00	15		Melt
16:03:15	5	34.58	Melt	9:19:15	0	0.00	Melt	14:22:15	15		Melt
16:03:30	10	32.92	Melt	9:19:30	0	0.00	Melt	14:22:30	15		Melt
16:03:45	15	31.46	Melt	9:19:45	0	0.00	Melt	14:22:45	15		Melt
16:04:00	15	29.58	Melt	9:20:00	0	0.00	Melt	14:23:00	15		Melt
16:04:15	15	27.71	Melt	9:20:15	0	0.00	Melt	14:23:15	15		Melt
16:04:30	15	25.42	Melt	9:20:30	0	0.00	Melt	14:23:30	15		Melt
16:04:45	5	22.92	Melt	9:20:45	0	0,00	Melt	14:23:45	15	14.38	Melt
16:05:00	5	20.42	Melt	9:21:00	0	0.00	Melt	14:24:00	15	14.58	Melt
16:05:15	5	17.92	Melt	9:21:15	0	0.00	Melt	14:24:15	20	15.00	Melt
16:05:30	5	15.63	Melt	9:21:30	0	0.00	Melt	14:24:30	20	15.42	Melt
16:05:45	0	13.54	Melt	9:21:45	0	0.00	Melt	14:24:45	30	16.04	Melt
16:06:00	0	11.88	Melt	9:22:00	0	0.00	Melt	14:25:00	30	16.67	Melt
16:06:15	0	10.42	Melt	9:22:15	0	0.00	Melt	14:25:15	25	17.08	Melt
16:06:30	0	9.38	Melt	9:22:30	0	0.00	Melt	14:25:30	20	17.29	Melt
16:06:45	0	8.54	Melt	9:22:45	0	0.00	Melt	14:25:45	20	17.50	Melt
16:07:00	0	7.71	Melt	9:23:00	0	0.00	Melt	14:26:00	20	17.71	Melt
16:07:15	0	7.08	Melt	9:23:15	0	0.00	Melt	14:26:15	15	17.71	Melt
16:07:30	0	6.46	Melt_	9:23:30	0	0.00	Melt	14:26:30	15	17.71	Melt
16:07:45	0	5.83	Melt	9:23:45	0	0.00	Melt	14:26:45	15	17.71	Melt
16:08:00	0	5.21	Melt	9:24:00	0	0.00	Melt	14:27:00	15	17.71	Melt
16:08:15	0	4.79	Melt	9:24:15	0	0.00	Melt	14:27:15	15	17.71	Melt
16:08:30	0	4.38	Melt	9:24:30	10	0.42	Melt	14:27:30	15	17.71	Melt
16:08:45	0	4.17	Melt	9:24:45	10	0.83	Melt	14:27:45	15	17.71	Melt
16:09:00	0	3.96	Melt	9:25:00	10	1.25	Melt	14:28:00	15	17.71	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2	<del></del>		TES	ST 3	<del></del>
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:09:15	0	3.75	Melt	9:25:15	10	1.67	Melt	14:28:15	15	17.71	Melt
16:09:30	0	3.33	Melt	9:25:30	10	2.08	Melt	14:28:30	15	17.71	Melt
16:09:45	0_	2.71	Melt	9:25:45	5	2.29	Melt	14:28:45	15	17.71	Melt
16:10:00	0	2.08	Melt	9:26:00	0	2.29	Melt	14:29:00	15	17.71	Melt
16:10:15	0	1.46	Melt	9:26:15	0	2.29	Melt	14:29:15	15	17.71	Melt
16:10:30	0	0.83	Melt	9:26:30	0	2.29	Melt	14:29:30	_ 15	17.71	Melt
16:10:45	0	0.63	Melt	9:26:45	0	2.29	Melt	14:29:45	10	17.50	Melt
16:11:00	0	0.42	Melt	9:27:00	0	2.29	Melt	14:30:00	10	17.29	Melt
16:11:15	0	0.21	Melt	9:27:15	0	2.29	Melt	14:30:15	_ 10	16.88	Melt
16:11:30	0	0.00	Melt	9:27:30	0	2.29	Melt	14:30:30	10	16.46	Melt
16:11:45	0	0.00	Melt	9:27:45	0	2.29	Melt	14:30:45	10	15,63	Melt
16:12:00	0	0.00	Melt	9:28:00	0	2.29	Melt	14:31:00	_ 15	15.00	Melt
16:12:15	10	0.42	Melt	9:28:15	0	2.29_	Melt	14:31:15	15	14.58	Melt
16:12:30	5	0.63	Melt	9:28:30	0	2.29	Melt	14:31:30	15	14.38	Melt
16:12:45	5	0.83	Melt	9:28:45	0	2.29	Melt	14:31:45	_ 15	14.17	Melt
16:13:00	5	1.04	Melt	9:29:00	0	2.29	Melt	14:32:00	15	13.96	Melt
16:13:15	5	1.25	Melt	9:29:15	0	2.29	Melt	14:32:15	15	13.96	Melt
16:13:30	0	1.25	Melt	9:29:30	0	2.29	Melt	14:32:30	15	13.96	Melt
16:13:45	_ 0 _	1.25	Melt	9:29:45	0	2.29	_ Melt	14:32:45	10	13,75	Melt
16:14:00	0	1.25	Melt	9:30:00	0	2.29	Melt	14:33:00	10	13.54	Melt
16:14:15	0	1.25	Melt	9:30:15	0	2.29	Melt	14:33:15	_ 10	13.33	Melt
16:14:30	0	1.25	Melt	9:30:30	0	1.88	Melt	14:33:30	10	13,13	Melt
16:14:45	0	1.25	Melt	9:30:45	0	1.46	Melt	14:33:45	10	12.92	Melt
16:15:00	0	1.25	Melt	9:31:00	0	٠	Charge	14:34:00	10	12.71	Melt
16:15:15	0	1.25	Melt	9:31:15	10		Charge	14:34:15	_ 10	12.50	Melt
16:15:30	0	1.25	Melt	9:31:30	10		Charge	14:34:30	10	12.29	Melt
16:15:45	0	1.25	Melt	9:31:45	15		Charge	14:34:45	10_	12.08	Melt
16:16:00	0	1.25	Melt	9:32:00	25		Charge	14:35:00	10		Тар
16:16:15	5	1.46	Melt	9:32:15	30_		Charge	14:35:15	10		Тар
16:16:30	10	1.88	Melt	9:32:30	30		Charge	14:35:30	10		Tap
16:16:45	10	2.29	Melt	9:32:45	40		Charge	14:35:45	10		Тар
16:17:00	5	2.50	Melt	9:33:00	45		Charge	14:36:00	15		Tap
16:17:15	5	2.71	Melt	9:33:15	45		Charge	14:36:15	20		Tap
16:17:30	5	2.92	Melt	9:33:30	35		Charge	14:36:30	20		Тар
16:17:45	0	2.92	Melt	9:33:45	40		Charge	14:36:45	20		Тар
16:18:00	0	2.92	Meit	9:34:00	40		Charge	14:37:00	15		Тар
16:18:15	0	2.50	Meit	9:34:15	30		Charge	14:37:15	15_		Тар
16:18:30	10	2.71	Melt	9:34:30	25		Charge	14:37:30	15		Tap
16:18:45	20	3.33	Melt	9:34:45	20		Charge	14:37:45	15		Тар
16:19:00	10	3.54	Melt	9:35:00	20		Charge	14:38:00	15		Tap
16:19:15	5	3.54	Melt	9:35:15	15		Charge	14:38:15	15		Тар

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1		I	TE	ST 2				ST 3	<del></del>
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:19:30	5	3.75	Melt	9:35:30	15		Charge	14:38:30	15	Ť	Tap
16:19:45	0	3.75	Melt	9:35:45	15		Charge	14:38:45	15	<del>                                     </del>	Тар
16:20:00	0		Charge	9:36:00	15		Charge	14:39:00	15		Tap
16:20:15	0		Charge	9:36:15	10		Charge	14:39:15	10	f	Tap
16:20:30	0		Charge	9:36:30	10		Charge	14:39:30	10		Тар
16:20:45	0		Charge	9:36:45	5	22.71	Charge	14:39:45	10		Tap
16:21:00	0		Charge	9:37:00	0		Melt	14:40:00	10		Tap
16:21:15	0		Charge	9:37:15	0		Melt	14:40:15	10		Tap
16:21:30	Ö		Charge	9:37:30	0	··· <u>-</u>	Melt	14:40:30	10		Tap
16:21:45	0		Charge	9:37:45	0		Melt	14:40:45	10		Тар
16:22:00	0		Charge	9:38:00	5		Melt	14:41:00	10		Tap
16:22:15	0		Charge	9:38:15	5		Melt	14:41:15	10		Tap
16:22:30	5		Charge	9:38:30	5		Melt	14:41:30	10		Tap
16:22:45	5		Charge	9:38:45	10		Melt	14:41:45	10		Тар
16:23:00	10		Charge	9:39:00	15		Melt	14:42:00	10		Тар
16:23:15	10		Charge	9:39:15	15		Melt	14:42:15	10		Tap
16:23:30	5		Charge	9:39:30	15		Melt	14:42:30	10		Тар
16:23:45	5		Charge	9:39:45	20		Melt	14:42:45	5	12.34	Тар
16:24:00	0		Charge	9:40:00	25		Melt	14:43:00	5		Charge
16:24:15	0		Charge	9:40:15	25		Melt	14:43:15	5		Charge
16:24:30	5		Charge	9:40:30	25		Melt	14:43:30	5		Charge
16:24:45	5		Charge	9:40:45	20		Melt	14:43:45	5		Charge
16:25:00	5		Charge	9:41:00	10		Melt	14:44:00	10		Charge
16:25:15	5		Charge	9:41:15	10		Melt	14:44:15	10		Charge
16:25:30	5		Charge	9:41:30	5		Melt	14:44:30	15		Charge
16:25:45	0	2.71	Charge	9:41:45	0		Melt	14:44:45	15		Charge
16:26:00 16:26:15	0		Melt	9:42:00	10		Charge	14:45:00	15		Charge
16:26:30	0		Melt	9:42:15	10		Charge	14:45:15	10		Charge
16:26:45	0		Melt Melt	9:42:30	10		Charge	14:45:30	10		Charge
16:27:00	0	-	Melt	9:42:45 9:43:00	5			14:45:45	10		Charge
16:27:15	0		Melt	9:43:15	0		Charge	14:46:00	10		Charge
16:27:30	0		Melt	9:43:30	0		Charge	14:46:15	10		Charge
16:27:45	0		Melt	9:43:45	5		Charge	14:46:30	10		Charge
16:28:00	0	<del></del>	Melt	9:44:00	5	}	Charge	14:46:45	10		Charge
16:28:15	0		Melt	9:44:15	0		Charge	14:47:00	10		Charge
16:28:30	0		Melt	9:44:30	10	<del></del>	Charge	14:47:15	10		Charge
16:28:45	0	<del></del>	Melt	9:44:45	0	<del></del> !	Charge	14:47:30	10		Charge
16:29:00	0	<del>  </del>	Melt	9:45:00	0		Charge Charge	14:47:45	10		Charge
16:29:15	0	<del></del>	Melt	9:45:15	0		Charge	14:48:00	10		Charge
16:29:30	Ö	<del></del>  -	Melt	9:45:30	0		Charge	14:48:15	10		Charge
				3.70.00			Unarge	14:48:30	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TE	ST 3	·
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:29:45	0		Melt	9:45:45	0		Charge	14:48:45	10		Charge
16:30:00	0		Melt	9:46:00	0		Charge	14:49:00	10		Charge
16:30:15	0		Melt	9:46:15	5		Charge	14:49:15	5		Charge
16:30:30	0		Melt	9:46:30	10		Charge	14:49:30	5		Charge
16:30:45	0		Melt	9:46:45	_ 0		Charge	14:49:45	5		Charge
16:31:00	0		Melt	9:47:00	_15		Charge	14:50:00	5		Charge
16:31:15	0		Melt	9:47:15	20		Charge	14:50:15	5		Charge
16:31:30	0		Melt	9:47:30	35		Charge	14:50:30	5		Charge
16:31:45	0	0.00	Melt	9:47:45	35	7.29	Charge	14:50:45	0		Charge
16:32:00	0	0.00	Melt	9:48:00	35		_Melt	14:51:00	0		Charge
16:32:15	0	0.00	Melt	9:48:15	40		Melt	14:51:15	0		Charge
16:32:30	0	0.00	Melt	9:48:30	_35		Melt	14:51:30	0		Charge
16:32:45	0	0.00	Melt	9:48:45	40		Melt	14:51:45	0		Charge
16:33:00	0	0.00	Melt	9:49:00	_40		Melt	14:52:00	0		Charge
16:33:15	0 _	0,00	Melt	9:49:15	40		Melt	14:52:15	0		Charge
16:33:30	Ö	0.00	Melt	9:49:30	40		Melt	14:52:30	0		Charge
16:33:45	0	0.00	Melt	9:49:45	35		Melt	14:52:45	0		Charge
16:34:00	0	0.00	Melt	9:50:00	35		Melt	14:53:00	0		Charge
16:34:15	0	0.00	Melt	9:50:15	30		Melt	14:53:15	0		Charge
16:34:30	0	0.00	Melt	9:50:30	_25		Melt	14:53:30	0		Charge
16:34:45	0	0.00	Melt	9:50:45	30		Melt	14:53:45	0		Charge
16:35:00	0	0.00	Melt	9:51:00	30		Melt	14:54:00	0		Charge
16:35:15	0	0.00	Melt	9:51:15	30		Melt	14:54:15	0		Charge
16:35:30	0	0.00	Melt	9:51:30	25		Melt	14:54:30	0		Charge
16:35:45	0	0.00	Melt	9:51:45	20		Melt	14:54:45	0		Charge
16:36:00	0	0.00	Melt	9:52:00	20		Melt	14:55:00	0		Charge
16:36:15	0	0.00	Melt	9:52:15	20		Melt	14:55:15	0		Charge
16:36:30	0	0.00	Melt	9:52:30	5		Melt	14:55:30	15		Charge
16:36:45	0	0.00	Melt	9:52:45	15		Melt	14:55:45	25		Charge
16:37:00	0	0.00	Melt	9:53:00	10		Melt	14:56:00	25		Charge
16:37:15	0	0.00	Melt	9:53:15	10		Melt	14:56:15	30		Charge
16:37:30	0	0.00	Melt	9:53:30	10		Melt	14:56:30	30		Charge
16:37:45	0	0.00	Melt	9:53:45	5	26.04	Melt	14:56:45	30		Charge
16:38:00	0	0.00	Melt	9:54:00	15	25.21	Melt	14:57:00	30		Charge
16:38:15	0	0.00	Melt	9:54:15	20	24.38	Melt	14:57:15	30		Charge
16:38:30	0	0.00	Melt	9:54:30	20	23.75	Melt	14:57:30	25		Charge
16:38:45	5	0.21	Melt	9:54:45	20	22.92	Melt	14:57:45	25		Charge
16:39:00	5	0.42	Melt	9:55:00	15		Tap	14:58:00	25		Charge
16:39:15	5	0.63	Melt	9:55:15	20		Тар	14:58:15	20		Charge
16:39:30	0	0.63	Melt	9:55:30	20		Tap	14:58:30	20		Charge
16:39:45	0	0.63	Melt	9:55:45	20		Tap	14:58:45	15		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

[	11			TE	ST 2		TEST 3				
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
16:40:00	0	0.63	Melt	9:56:00	20		Тар	14:59:00	15		Charge
16:40:15	0	0.63	Melt	9:56:15	20		Тар	14:59:15	15		Charge
16:40:30	0_	0.63	Melt	9:56:30	15		Тар	14:59:30	15		Charge
16:40:45	0	0.63	Melt	9:56:45	15_		Тар	14:59:45	15		Charge
16:41:00	0	0.63	Melt	9:57:00	10		Тар	15:00:00	15		Charge
16:41:15	0 _	0.63	Melt	9:57:15	10_		Тар	15:00:15	15		Charge
16:41:30	0	0.63	Melt	9:57:30	10		Тар	15:00:30	10		Charge
16:41:45	0	0.63	Melt	9:57:45	10		Тар	15:00:45	10		Charge
16:42:00	0	0.63	Melt	9:58:00	5_		Тар	15:01:00	10		Charge
16:42:15	0	0.63	Melt	9:58:15	0_		Тар	15:01:15	10_		Charge
16:42:30	0	0.63	Melt	9:58:30	0_		Тар	15:01:30	10		Charge
16:42:45	0	0.63	Melt	9:58:45	0		Тар	15:01:45	5	10.07	Charge
16:43:00	0		_Tap	9:59:00	0		Тар	15:02:00	5		Melt
16:43:15	0		Тар	9:59:15	0		Тар	15:02:15	5		Melt
16:43:30	5		Тар	9:59:30	0		Тар	15:02:30	5		Melt
16:43:45	10		Тар	9:59:45	0		Тар	15:02:45	5		Melt
16:44:00	5	•	Тар	10:00:00	0		Тар	15:03:00	5		Melt
16:44:15	5		Тар	10:00:15	0		Тар	15:03:15	5		Melt
16:44:30	10		Тар	10:00:30	0		Тар	15:03:30	5		Melt
16:44:45	15		Тар	10:00:45	0		Тар	15:03:45	5		Melt
16:45:00	15		Тар	10:01:00	0		Тар	15:04:00	5		Melt
16:45:15	15		Tap	10:01:15	0		Тар	15:04:15	0		Melt
16:45:30	15		Tap	10:01:30	0		Тар	15:04:30	0		Melt
16:45:45	10		Tap	10:01:45	0		Тар	15:04:45	0		Melt
16:46:00	10		Тар	10:02:00	0		Тар	15:05:00	0		Melt
16:46:15	10	ı	_Тар	10:02:15	0		Tap	15:05:15	0		Melt
16:46:30	10		Тар	10:02:30	0		Tap	15:05:30	0		Melt
16:46:45	15		Tap	10:02:45	0		Tap	15:05:45	0		Melt
16:47:00	20		Tap	10:03:00	0		Тар	15:06:00	0		Melt
16:47:15	20		Tap	10:03:15	0	5.59	Тар	15:06:15	0		Melt
16:47:30	15		Tap	10:03:30	0		Charge	15:06:30	0		Melt
16:47:45	15		Tap	10:03:45	0		Charge	15:06:45	0		Melt
16:48:00	15		Tap	10:04:00	0		Charge	15:07:00	0		Melt
16:48:15	15		Тар	10:04:15	0		Charge	15:07:15	0		Melt
16:48:30	15		Тар	10:04:30	0		Charge	15:07:30	0		Melt
16:48:45	15_		Тар	10:04:45	15		Charge	15:07:45	0	1.88	Melt
16:49:00	20		Tap	10:05:00	10		Charge	15:08:00	0	1.67	Melt
16:49:15	20		Тар	10:05:15	10		Charge	15:08:15	0	1.46	Melt
16:49:30	20		Tap	10:05:30	10		Charge	15:08:30	0	1.25	Melt
16:49:45	15	12.68	Tap	10:05:45	20		Charge	15:08:45	0	1.04	Melt
16:50:00	15		Charge	10:06:00	5		Charge	15:09:00	0	0.83	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1		TEST 2				TEST 3				
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	
16:50:15	10	Í	Charge	10:06:15	5		Charge	15:09:15	Ö	0.63	Melt	
16:50:30	10		Charge	10:06:30	10		Charge	15:09:30	0	0.42	Melt_	
16:50:45	10		Charge	10:06:45	15		Charge	15:09:45	0	0.21	Melt	
16:51:00	10		Charge	10:07:00	20		Charge	15:10:00	Ö	0.00	Melt	
16:51:15	5		Charge	10:07:15	25		Charge	15:10:15	0	0.00	Melt	
16:51:30	_ 5		Charge	10:07:30	25		Charge	15:10:30	0	0.00	Melt	
16:51:45	5		Charge	10:07:45	25		Charge	15:10:45	0	0.00	Melt	
16:52:00	5		Charge	10:08:00	20		Charge	15:11:00	0	0.00	Melt	
16:52:15	0		Charge	10:08:15	20		Charge	15:11:15	0	0.00	Melt	
16:52:30	0		Charge	10:08:30	15		Charge	15:11:30	0	0.00	Melt	
16:52:45	0		Charge	10:08:45	15		Charge	15:11:45	0	0.00	Melt	
16:53:00	5		Charge	10:09:00	25		Charge	15:12:00	0	0.00	Melt	
16:53:15	15		Charge	10:09:15	20		Charge	15:12:15	0	0.00	Melt	
16:53:30	15		Charge	10:09:30	20		Charge	15:12:30	0	0.00	Melt	
16:53:45	10		Charge	10:09:45	15		Charge	15:12:45	0	0.00	Melt	
16:54:00	10		Charge	10:10:00	10		Charge	15:13:00	0	0.00	Melt	
16:54:15	5		Charge	10:10:15	15_		Charge	15:13:15	0	0.00	Melt	
16:54:30	5		Charge	10:10:30	15		Charge	15:13:30	0	0.00	Melt	
16:54:45	5		Charge	10:10:45	15		Charge	15:13:45	0	0.00	Melt	
16:55:00	5		Charge	10:11:00	15		Charge	15:14:00	0	0.00	Melt	
16:55:15	5		Charge	10:11:15	15		Charge	15:14:15	0	0.00	Melt	
16:55:30	0		Charge	10:11:30	10		Charge	15:14:30	0	0.00	Melt	
16:55:45	0		Charge	10:11:45	10		Charge	15:14:45	0	0.00	Melt	
16:56:00	0		Charge	10:12:00	10		Charge	15:15:00	5	0.21	Melt	
16:56:15	0		Charge	10:12:15	10		Charge	15:15:15	10	0.63	Melt	
16:56:30	0		Charge	10:12:30	5		Charge	15:15:30	10	1.04	Melt	
16:56:45	0	,	Charge	10:12:45	0		Charge	15:15:45	- 5	1.25	Melt	
16:57:00	0		Charge	10:13:00	0		Charge	15:16:00	5	1.46	Melt	
16:57:15	0		Charge	10:13:15	0		Charge	15:16:15	5	1.67	Melt	
16:57:30	0		Charge	10:13:30	0		Charge	15:16:30	0	1.67	Melt	
16:57:45	0		Charge	10:13:45	0		Charge	15:16:45	0	1.67	Melt	
16:58:00	0		Charge	10:14:00	0		Charge	_15:17:00	0	1.67	Melt	
16:58:15	5		Charge	10:14:15	0		Charge	15:17:15	0	1.67	Melt	
16:58:30	5		Charge	10:14:30	0		Charge	15:17:30	0	1.67	Melt	
16:58:45	5		Charge	10:14:45	0	10.33	Charge	15:17:45	0	1.67	Melt	
16:59:00	5		Charge	10:15:00	0		Melt	15:18:00	0	1.67	Melt	
16:59:15	5		Charge	10:15:15	0		Melt	15:18:15	0	1.67	Melt	
16:59:30	5		Charge	10:15:30	0		Melt	15:18:30	10	2.08	Melt	
16:59:45	5		Charge	10:15:45	0		Melt	15:18:45	10	2.50	Melt	
17:00:00	5		Charge	10:16:00	0		Melt	15:19:00	5	2.71	Melt	
17:00:15	0		Charge	10:16:15	0		Melt	15:19:15	5	2.92	Melt	

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	T 1			TE	ST 2		TEST 3				
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:00:30	0		Charge	10:16:30	0		Melt	15:19:30	10	3.33	Melt
17:00:45	0		Charge	10:16:45	0		Melt	15:19:45	10	3.75	Melt
17:01:00	0		Charge	10:17:00	0		Melt	15:20:00	10	4.17	Melt
17:01:15	0		Charge	10:17:15	0		Melt	15:20:15	10	4.58	Melt
17:01:30	0		Charge	10:17:30	0		Melt	15:20:30	5	4.79	Melt
17:01:45	0		Charge	10:17:45	0		Melt	15:20:45	5	5.00	Melt
17:02:00	0		Charge	10:18:00	0		Melt	15:21:00	5	5.00	Melt
17:02:15	0		Charge	10:18:15	0		Melt	15:21:15	10	5.00	Melt
17:02:30	0		Charge	10:18:30	0		Melt	15:21:30	10	5.00	Melt
17:02:45	0		Charge	10:18:45	0		Melt	15:21:45	10	5.21	Melt
17:03:00	0		Charge	10:19:00	0		Melt	15:22:00	15	5.63	Melt
17:03:15	0		Charge	10:19:15	0		Melt	15:22:15	20	6.25	Melt
17:03:30	0		Charge	10:19:30	0		Melt	15:22:30	20	7.08	Melt
17:03:45	0		Charge	10:19:45	0		Melt	15:22:45	20	7.92	Melt
17:04:00	0		Charge	10:20:00	0		Melt	15:23:00	15_	8.54	Melt
17:04:15	0		Charge	10:20:15	0		Melt	15:23:15	15	9.17	Melt
17:04:30	Ö		Charge	10:20:30	0		Melt	15:23:30	15	9.79	Melt
17:04:45	0		Charge	10:20:45	0	0.00	Melt	15:23:45	15	10.42	Melt
17:05:00	0		Charge	10:21:00	0	0.00	Melt	15:24:00	15	11.04	Melt
17:05:15	10		Charge	10:21:15	Ō	0.00	Melt	15:24:15	15	11.67	Melt
17:05:30	10		Charge	10:21:30	0	0.00	Melt	15:24:30	15	11.88	Melt
17:05:45	15		Charge	10:21:45	Ō	0.00	Melt	15:24:45	15	12.08	Melt
17:06:00	15		Charge	10:22:00	0	0.00	Melt	15:25:00	15	12.50	Melt
17:06:15	10		Charge	10:22:15	0	0.00	Melt	15:25:15	15	12.92	Melt
17:06:30	5		Charge	10:22:30	0	0.00	Melt	15:25:30	15	13.13	Melt
17:06:45	5		Charge	10:22:45	0	0.00	Melt	15:25:45	15	13.33	Melt
17:07:00	5		Charge	10:23:00	0	0.00	Melt	15:26:00	15	13.54	Melt
17:07:15	0		Charge	10:23:15	O.	0.00	Melt	15:26:15	10	13.54	Melt
17:07:30	0		Charge	10:23:30	0	0.00	Melt	15:26:30	10	13.75	Melt
17:07:45	0		Charge	10:23:45	0	0.00	Melt	15:26:45	10	13.96	Melt
17:08:00	0		Charge	10:24:00	0	0.00	Melt	15:27:00	10	14.17	Melt
17:08:15	0		Charge	10:24:15	0	0.00	Melt	15:27:15	10	14.17	Melt
17:08:30	0		Charge	10:24:30	0	0.00	Melt	15:27:30	5	13.96	Melt
17:08:45	0		Charge	10:24:45	0	0.00	Melt	15:27:45	5	13.75	Melt
17:09:00	0		Charge	10:25:00	Ö	0.00	Melt	15:28:00	5	13.33	Melt
17:09:15	0		Charge	10:25:15	0	0.00	Melt	15:28:15	5	12.71	Melt
17:09:30	0		Charge	10:25:30	0	0.00	Melt	15:28:30	5	12.08	Melt
17:09:45	0		Charge	10:25:45	0	0.00	Melt	15:28:45	5	11.46	Melt
17:10:00	0		Charge	10:26:00	0	0.00	Melt	15:29:00	5	11.04	Melt
17:10:15	0		Charge	10:26:15	0	0.00	Melt	15:29:15	5	10.63	Melt
17:10:30	0		Charge	10:26:30	0	0.00	Melt	15:29:30	5	10.21	Melt

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2		TEST 3			
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:10:45	0		Charge	10:26:45	0	0.00	Melt	15:29:45	0	9.58	Melt
17:11:00	0		Charge	10:27:00	0	0.00	Melt	15:30:00	0	8.96	Melt
17:11:15	0		Charge	10:27:15	0	0.00	Melt	15:30:15	_0	8.33	Melt
17:11:30	0		Charge	10:27:30	0	0.00	Melt	15:30:30	5	7.92	Melt
17:11:45	0		Charge	10:27:45	0	0.00	Melt	15:30:45	10	7.71	Melt
17:12:00	0		Charge	10:28:00	0	0.00	Melt	15:31:00	10	7.50	Melt
17:12:15	0		Charge	10:28:15	0	0.00	Melt	15:31:15	10	7.29	Melt
17:12:30	0		Charge	10:28:30	0	0.00	Melt	15:31:30	15	7.29	Melt
17:12:45	0		Charge	10:28:45	0	0.00	Melt	15:31:45	15	7.29	Melt
17:13:00	, 0		Charge	10:29:00	0	0.00	Melt	15:32:00	15	7.29	Melt
17:13:15	0		Charge	10:29:15	0	0.00	Meit	15:32:15	20	7.71	Melt
17:13:30	0		Charge	10:29:30	0	0.00	Melt	15:32:30	20	8.13	Melt
17:13:45	0		Charge	10:29:45	0	0.00	Melt	15:32:45	15	8.33	Melt
17:14:00	Ó		Charge	10:30:00	0	0.00	Melt	15:33:00	15	8.54	Melt
17:14:15	0		Charge	10:30:15	0	0.00	Melt	15:33:15	10	8.54	Melt
17:14:30	0		Charge	10:30:30	0	0.00	Melt	15:33:30	10	8.75	Melt
17:14:45	0	•	Charge	10:30:45	0	0.00	Melt	15:33:45	5	8.75	Melt
17:15:00	0		Charge	10:31:00	0		Тар	15:34:00	5	8.75	Melt
17:15:15	0		Charge	10:31:15	15		Tap	15:34:15	5	8.75	Melt
17:15:30	0		Charge	10:31:30	25		Тар	15:34:30	5	8.75	Melt
17:15:45	0		Charge	10:31:45	25		Тар	15:34:45	5	8.75	Melt
17:16:00	0		Charge	10:32:00	20		Тар	15:35:00	5	8.75	Melt
17:16:15	10		Charge	10:32:15	20		Тар	15:35:15	5	8.75	Melt
17:16:30	15		Charge	10:32:30	25		Тар	15:35:30	5	8.75	Melt
17:16:45	15		Charge	10:32:45	25		Тар	15:35:45	5	8.96	Melt
17:17:00	10		Charge	10:33:00	25		Tap	15:36:00	5		Charge
17:17:15	10		Charge	10:33:15	30		Tap	15:36:15	10		Charge
17:17:30	10		Charge	10:33:30	30		Tap	15:36:30	10		Charge
17:17:45	10		Charge	10:33:45	25		Тар	15:36:45	15		Charge
17:18:00	5		Charge	10:34:00	25		Тар	15:37:00	15		Charge
17:18:15	5		Charge	10:34:15	15		Тар	15:37:15	15		Charge
17:18:30	5		Charge	10:34:30	15		Tap	15:37:30	20		Charge
17:18:45	5		Charge	10:34:45	5		Тар	15:37:45	20		Charge
17:19:00	0		Charge	10:35:00	5		Тар	15:38:00	20		Charge
17:19:15	0		Charge	10:35:15	0		Tap	15:38:15	15		Charge
17:19:30	0		Charge	10:35:30	0		Tap	15:38:30	15		Charge
17:19:45	0		Charge	10:35:45	0		Tap	15:38:45	15		Charge
17:20:00	0		Charge	10:36:00	0		Тар	15:39:00	15		Charge
17:20:15	0		Charge	10:36:15	0		Tap	15:39:15	15		Charge
17:20:30	0		Charge	10:36:30	0		Тар	15:39:30	10		Charge
17:20:45	0		Charge	10:36:45	0	13.75	Тар	15:39:45	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	ST 1			TE	ST 2			TE	ST 3	<del></del>
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:21:00	0		Charge	10:37:00	. 0		Charge	15:40:00	10		Charge
17:21:15	0		Charge	10:37:15	0		Charge	15;40;15	10		Charge
17:21:30	0		Charge	10:37:30	0		Charge	15:40:30	10		Charge
17:21:45	0		Charge	10:37:45	0		Charge	15:40:45	5		Charge
17:22:00	0		Charge	10:38:00	0		Charge	15:41:00	. 5		Charge
17:22:15	0		Charge	10:38:15	0		Charge	15:41:15	_ 5		Charge
17:22:30	0		Charge	10:38:30	Ö		Charge	15:41:30	5		Charge
17:22:45	0		Charge	10:38:45	0		Charge	15:41:45	5		Charge
17:23:00	0		Charge	10:39:00	0		Charge	15:42:00	5		Charge
17:23:15	0		Charge	10:39:15	0		Charge	15,42;15	0		Charge
17:23:30	0		Charge	10:39:30	0		Charge	15:42:30	0		Charge
17:23:45	0		Charge	10:39:45	0		Charge	15:42:45	0	10.18	Charge
17:24:00	0		Charge	10:40:00	0		Charge	15:43:00	0		Тар
17:24:15	0		Charge	10:40:15	0		Charge	15:43:15	10		Тар
17:24:30	0		Charge	10:40:30	0		Charge	15:43:30	10		Тар
17:24:45	0	2.64	Charge	10:40:45	0		Charge	15:43:45	15		Тар
17:25:00	0	•	Melt	10:41:00	0		Charge	15:44:00	15		Тар
17:25:15	0		Melt	10:41:15	0		Charge	15:44:15	15		Тар
17:25:30	0		Melt	10:41:30	0		Charge	15:44:30	20		Тар
17:25:45	0		Melt	10:41:45	0		Charge	15:44:45	20		Тар
17:26:00	0		Melt	10:42:00	0		Charge	15:45:00	15		Тар
17:26:15	0		Melt	10:42:15	0		Charge	15:45:15	_15		Тар
17:26:30	0		Melt	10:42:30	0		Charge	15:45:30	_10		Тар
17:26:45	0	_	Melt	10:42:45	0		Charge	15:45:45	10		Тар
17:27:00	0		Melt	10:43:00	0		Charge	15:46:00	10		Tap
17:27:15	0		Melt	10:43:15	0		Charge	15:46:15	10		Тар
17:27:30	0		Melt	10:43:30	0		Charge	15:46:30	_10		Тар
17:27:45	0		Melt	10:43:45	0		Charge	15:46:45	10		Тар
17:28:00	0		Melt	10:44:00	0		Charge	15:47:00	10		Тар
17:28:15	0		Melt	10:44:15	0_		Charge	15:47:15	_10		Тар
17:28:30	0		Melt	10:44:30	0		Charge	15:47:30	10		Tap
17:28:45	0		Melt	10:44:45	0		Charge	15:47:45	10		Тар
17:29:00	0		Melt	10:45:00	0		Charge	15:48:00	10		Tap
17:29:15	0		Melt	10:45:15	0		Charge	15:48:15	10		Tap
17:29:30	0		Melt	10:45:30	0		Charge	15:48:30	5		Tap
17:29:45	0		Melt	10:45:45	0		Charge	15:48:45	5		Tap
17:30:00	0 .		Melt	10:46:00	0		Charge	15:49:00	5		Tap
17:30:15	0		Melt	10:46:15	0		Charge	15:49:15	15		Tap
17:30:30	0		Melt	10:46:30	0		Charge	15:49:30	15		Tap
17:30:45	0	0.00	Melt	10:46:45	0		Charge	15:49:45	20	11.43	Tap
17:31:00	0	0.00	Melt	10:47:00	0		Charge	15:50:00	20		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1	····		TE	ST 2	<u></u>		TE:	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:31:15	0	0.00	Melt	10:47:15	0		Charge	15:50:15	25		Charge
17:31:30	0	0.00	Melt	10:47:30	0		Charge	15:50:30	25		Charge
17:31:45	0	0.00	Melt	10:47:45	0		Charge	15:50:45	25		Charge
17:32:00	0	0.00	Melt	10:48:00	0		Charge	15:51:00	25		Charge
17:32:15	0	0.00	Melt	10:48:15	0		Charge	15:51:15	25		Charge
17:32:30	0	0.00	Melt	10:48:30	0		Charge	15:51:30	25		Charge
17:32:45	Ō	0.00	Melt	10:48:45	0		Charge	15:51:45	30		Charge
17:33:00	0	0.00	Melt	10:49:00	0		Charge	15:52:00	35		Charge
17:33:15	0	0,00	Melt	10:49:15	0		Charge	15:52:15	40		Charge
17:33:30	0	0.00	Melt	10:49:30	0		Charge	15:52:30	40		Charge
17:33:45	0	0.00	Melt	10:49:45	0		Charge	15:52:45	40		Charge
17:34:00	_ 0	0.00	Melt	10:50:00	0		Charge	15:53:00	40		Charge
17:34:15	0	0.00	Melt	10:50:15	0		Charge	15:53:15	40		Charge
17:34:30	0	0.00	Melt	10:50:30	0		Charge	15:53:30	40		Charge
17:34:45	Ö	0.00	Melt	10:50:45	0		Charge	15:53:45	40		Charge
17:35:00	0	0.00	Melt	10:51:00	0		Charge	15:54:00	40		Charge
17:35:15	0	0.00	Melt	10:51:15	0		Charge	15:54:15	35		Charge
17:35:30	0	0.00	Melt	10:51:30	0		Charge	15:54:30	30		Charge
17:35:45	0	0.00	Melt	10:51:45	0		Charge	15:54:45	30		Charge
17:36:00	0	0.00	Melt	10:52:00	0		Charge	15:55:00	30		Charge
17:36:15	0	0.00	Melt	10:52:15	0		Charge	15:55:15	25_		Charge
17:36:30	0	0.00	Melt	10:52:30	0		Charge	15:55:30	25		Charge
17:36:45	0	0.00	Melt	10:52:45	0		Charge	15:55:45	25		Charge
17:37:00	0	0.00	Melt	10:53:00	0		Charge	15:56:00	25		Charge
17:37:15	0	0.00	Melt	10:53:15	0		Charge	15:56:15	25		Charge
17:37:30	0	0.00	Melt	10:53:30	0	\	Charge	15:56:30	20		Charge
17:37:45	0	0,00	Melt	10:53:45	0		Charge	15:56:45	20		Charge
17:38:00	0	0.00	Melt	10:54:00	0		Charge	15:57:00	20		Charge
17:38:15	0	0.00	Melt	10:54:15	0		Charge	15:57:15	20		Charge
17:38:30	0	0.00	Melt	10:54:30	0		Charge	15:57:30	15		Charge
17:38:45	0	0.00	Melt	10:54:45	0		Charge	15:57:45	15		Charge
17:39:00	0	0.00	Melt	10:55:00	0		Charge	15:58:00	15		Charge
17:39:15	0	0.00	Melt	10:55:15	0		Charge	15:58:15	15		Charge
17:39:30	0	0.00	Melt	10:55:30	0		Charge	15:58:30	10	•	Charge
17:39:45	0	0.00	Melt	10:55:45	0		Charge	15:58:45	10		Charge
17:40:00	0	0.00	Melt	10:56:00	0		Charge	15:59:00	10		Charge
17:40:15	0	0.00	Melt	10:56:15	0		Charge	15:59:15	10		Charge
17:40:30	0	0.00	Melt	10:56:30	0		Charge	15:59:30	10		Charge
17:40:45	0	0.00	Melt	10:56:45	0		Charge	15:59:45	10		Charge
17:41:00	0	0.00	Melt	10:57:00	0		Charge	16:00:00	10		Charge
17:41:15	0	0.00	Melt	10:57:15	0		Charge	16:00:15	5		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
17:41:30	0	0.00	Melt	10:57:30	0		Charge	16:00:30	5		Charge
17:41:45	0	0.00	Melt	10:57:45	0		Charge	16:00:45	5		Charge
17:42:00	0		Charge	10:58:00	0		Charge	16:01:00	5		Charge
17:42:15	0		Charge	10:58:15	0		Charge	16:01:15	5		Charge
17:42:30	5		Charge	10:58:30	0		Charge	16:01:30	5		Charge
17:42:45	15		Charge	10:58:45	0		Charge	16:01:45	15		Charge
17:43:00	15		Charge	10:59:00	0		Charge	16:02:00	15		Charge
17:43:15	10		Charge	10:59:15	0		Charge	16:02:15	20		Charge
17:43:30	35		Charge	10:59:30	0		Charge	16:02:30	20		Charge
17:43:45	50		Charge	10:59:45	0		Charge	16:02:45	20		Charge
17:44:00	40	,	Charge	11:00:00	0		Charge	16:03:00	20		Charge
17:44:15	40		Charge	11:00:15	0		Charge	16:03:15	20		Charge
17:44:30	30		Charge	11:00:30	0		Charge	16:03:30	20		Charge
17:44:45	20		Charge	11:00:45	0		Charge	16:03:45	20		Charge
17:45:00	20		Charge	11:01:00	0		Charge	16:04:00	20		Charge
17:45:15	15		Charge	11:01:15	. 0		Charge	16:04:15	20		Charge
17:45:30	10		Charge	11:01:30	0		Charge	16:04:30	15		Charge
17:45:45	10		Charge	11:01:45	Ö		Charge	16:04:45	15		Charge
17:46:00	5		Charge	11:02:00	0		Charge	16:05:00	15		Charge
17:46:15	5		Charge	11:02:15	0		Charge	16:05:15	15		Charge
17:46:30	10		Charge	11:02:30	0		Charge	16:05:30	15		Charge
17:46:45	10		Charge	11:02:45	0_		Charge	16:05:45	15		Charge
17:47:00	10		Charge	11:03:00	0		Charge	16:06:00	15		Charge
17:47:15	10		Charge	11:03:15	0		Charge	16:06:15	15		Charge
17:47:30	15		Charge	11:03:30	0		Charge	16:06:30	15		Charge
17:47:45	15		Charge	11:03:45	0		Charge	16:06:45	15		Charge
17:48:00	10		Charge	11:04:00	0		Charge	16:07:00	_15		Charge
17:48:15	5		Charge	11:04:15	0		Charge	16:07:15	15		Charge
17:48:30	5		Charge	11:04:30	0		Charge	16:07:30	15		Charge
17:48:45	5		Charge	11:04:45	0		Charge	16:07:45	15		Charge
17:49:00	5		Charge	11:05:00	10		Charge	16:08:00	15		Charge
17:49:15	0		Charge	11:05:15	10		Charge	16:08:15	15		Charge
17:49:30	0		Charge	11:05:30	10		Charge	16:08:30	15		Charge
17:49:45	0		Charge	11:05:45	10	0.34	Charge	16:08:45	15		Charge
17:50:00	0		Charge	11:06:00	5		Melt	16:09:00	15		Charge
17:50:15	0		Charge	11:06:15	0		Melt	16:09:15	15		Charge
17:50:30	0		Charge	11:06:30	0		Melt	16:09:30	10		Charge
17:50:45	10		Charge	11:06:45	0		Melt	16:09:45	10		Charge
17:51:00	20		Charge	11:07:00	0		Melt	16:10:00	10		Charge
17:51:15	35		Charge	11:07:15	Ō		Melt	16:10:15	10		Charge
17:51:30	30		Charge	11:07:30	0		Melt	16:10:30	10		Charge

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2	<del></del>		TE	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VΕ	6-min Avg	Activity
17:51:45	25		Charge	11:07:45	0	Ť	Melt	16:10:45	5		Charge
17:52:00	15		Charge	11:08:00	0		Melt	16:11:00	5		Charge
17:52:15	15		Charge	11:08:15	0	Ì	Melt	16:11:15	5	† — —	Charge
17:52:30	10		Charge	11:08:30	0		Melt	16:11:30	5		Charge
17:52:45	5	13.41	Charge	11:08:45	0		Melt	16:11:45	10		Charge
17:53:00	5		Melt	11:09:00	0		Melt	16:12:00	15		Charge
17:53:15	5		Melt	11:09:15	0		Melt	16:12:15	15		Charge
17:53:30	0		Melt	11:09:30	0		Melt	16:12:30	15		Charge
17:53:45	0		Melt	11:09:45	0		Melt	16:12:45	15		Charge
17:54:00	0		Melt	11:10:00	0		Melt	16:13:00	15		Charge
17:54:15	0		Melt	11:10:15	0		Melt	16:13:15	15		Charge
17:54:30	0		Melt	11:10:30	0		Meit	16:13:30	15	_	Charge
17:54:45	0		Melt	11:10:45	0		Melt	16:13:45	15		Charge
17:55:00	0	-	Melt	11:11:00	0		Melt	16:14:00	15		Charge
17:55:15	0		Melt	11:11:15	0		Melt	16:14:15	20		Charge
17:55:30	0		Melt	11:11:30	0		Melt	16:14:30	25		Charge
17:55:45	0		Melt	11:11:45	0	0.21	Melt	16:14:45	25	-	Charge
17:56:00	0		Melt	11:12:00	0	0.00	Melt	16:15:00	25		Charge
17:56:15	5		Melt	11:12:15	0	0.00	Melt	16:15:15	25		Charge
17:56:30	10		Melt	11:12:30	0	0.00	Melt	16:15:30	25		Charge
17:56:45	10		Melt	11:12:45	0	0.00	Melt	16:15:45	25		Charge
17:57:00	5		Melt_	11:13:00	0	0.00	Melt	16:16:00	25		Charge
17:57:15	5		Melt	11:13:15	0	0.00	Melt	16:16:15	25		Charge
17:57:30	0		Melt	11:13:30	0	0.00	Melt	16:16:30	25		Charge
17:57:45	0		Melt	11:13:45	0	0.00	Melt	16:16:45	20		Charge
17:58:00_	0		Melt	11:14:00	0	0.00	Melt	16:17:00	20		Charge
17:58:15	0		Melt	11:14:15	0	0.00	Melt	16:17:15	15		Charge
17:58:30	0		Melt	11:14:30	10	0.42	Melt	16:17:30	15		Charge
17:58:45	0	1.88	Melt	11:14:45	10	0.83	Melt	16:17:45	15		Charge
17:59:00	0	1.67	Melt	11:15:00	0	0.83	_Melt	16:18:00	15		Charge
17:59:15	0	1.46	Melt	11:15:15	0	0.83	Melt	16:18:15	15		Charge
17:59:30	0_	1.46	Melt	11:15:30	0	0.83	Melt	16:18:30	15		Charge
17:59:45	0	1.46	Melt	11:15:45	0	0.83	Melt	16:18:45	15		Charge
18:00:00	0	1.46	Melt	11:16:00	0	0.83	Melt	16:19:00	15		Charge
18:00:15	10	1.88	Melt	11:16:15	0	0.83	Melt	16:19:15	20		Charge
18:00:30	10	2.29	Melt	11:16:30	0	0.83	Melt	16:19:30	20		Charge
18:00:45	5	2.50	Melt	11:16:45	0	0.83	Melt	16:19:45	20	18.63	Charge
18:01:00	5	2.71	Melt	11:17:00	0	0.83	Melt				
18:01:15	5	2.92	Melt	11:17:15	0	0.83	Melt				
18:01:30	0	2.92	Melt	11:17:30	0	0.83	Melt				
18:01:45	0	2.92	Melt	11:17:45	0	0.83	Melt				

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2		Γ	TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:02:00	0	2.92	Melt	11:18:00	0	0.83	Melt				
18:02:15	0	2.71	Meit	11:18:15	0	0.83	Melt		1		
18:02:30	0	2.29	Melt	11:18:30	0	0.83	Melt				
18:02:45	_10	2.29	Melt	11:18:45	0	0.83	Melt				
18:03:00	20	2.92	Melt	11:19:00	0	0.83	Melt				
18:03:15	20	3.54	Melt	11:19:15	0	0.83	Melt				
18:03:30	20	4.38	Melt	11:19:30	0	0.83	Melt				
18:03:45	_ 15	5,00	Melt	11:19:45	0	0.83	Melt				
18:04:00	15	5.63	Melt	11:20:00	0	0.83	Melt				
18:04:15	15	6.25	Melt	11:20:15	0	0.83	Melt				
18:04:30	15	6.88	Melt	11:20:30	0	0.42	Melt				
18:04:45	10	7.29	Melt	11:20:45	0	0.00	Melt				
18:05:00	10	7,71	Melt	11:21:00	0	0.00	Melt				
18:05:15	5	7,92	Melt				1				
18:05:30	_ 5	8.13	Melt								
18:05:45	5	8.33	Melt								
18:06:00	5	8,54	Melt			-					
18:06:15	0	8.13	Melt	_							
18:06:30	0	7.71	Melt								
18:06:45	0	7.50	Melt								
18:07:00	0	7.29	Melt								
18:07:15	5	7.29	Melt								
18:07:30	5	7.50	Melt								
18:07:45	10	7.92	Melt								
18:08:00	10	8.33	Melt				·				
18:08:15	10	8.75	Melt								
18:08:30	5	8.96	Melt								
18:08:45	5	8.75	Melt								
18:09:00	5	8.13	Melt								
18:09:15	5	7.50	Melt								
18:09:30	5	6.88	Melt								
18:09:45	0	6.25	Melt								
18:10:00	0	5.63	Melt								
18:10:15	15	5.63	Melt								
18:10:30	15	5.63	Melt								
18:10:45	10	5.63	Melt								
18:11:00	10	5.63	Melt								
18:11:15	15	6.04	Melt								
18:11:30	15	6.46	Melt								
18:11:45	15	6.88	Melt								
18:12:00	20	7.50	Melt								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:12:15	20	8.33	Melt								
18:12:30	15	8.96	Melt								
18:12:45	15	9.58	Melt	- 1							
18:13:00	15	10.21	Melt								
18:13:15	10	10.42	Melt								
18:13:30	10	10.63	Melt						,		
18:13:45	15	10.83	Melt								
18:14:00	15	11.04	Melt								
18:14:15	15	11.25	Melt								
18:14:30	10	11.46	Melt								
18:14:45	10	11.67	Melt								
18:15:00	10	11.88	Melt								
18:15:15	10	12.08	Melt								
18:15:30	5	12.08	Melt								
18:15:45	5	12.29	Melt								
18:16:00	5	12.50	Melt								
18:16:15	5	12.08	Melt								
18:16:30	5	11.67	Melt								
18:16:45	0	11.25	Melt								
18:17:00	0	10.83	Melt								
18:17:15	0	10.21	Melt								
18:17:30	0	9.58	Melt								
18:17:45	0	8.96	Meit								
18:18:00	0	8.13	Melt								
18:18:15	0	7.29	Melt								
18:18:30	0	6.67	Melt								
18:18:45	0	6.04	Melt				_				
18:19:00	0	5.42	Melt								
18:19:15	0	5.00	Melt								
18:19:30	0	4.58	Melt								
18:19:45	0	3.96	Melt								
18:20:00	0	3.33	Melt								
18:20:15	0	2.71	Melt								
18:20 <u>:3</u> 0	0	2.29	Melt								
18:20:45	0	1.88	Melt								
18:21:00	0	1.46	Melt								
18:21:15	0	1.04	Melt								
18:21:30	0	0.83	Melt								
18:21:45	0	0.63	Melt								
18:22:00	0	0.42	Melt								
18:22:15	0	0.21	Melt								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:22:30	0	0.00	Melt								
18:22:45	0	0.00	Melt								
18:23:00	0	0.00	Melt								
18:23:15	0	0.00	Melt								
18:23:30	0	0.00	Melt _				- "				
18:23:45	0	0.00	Melt		_					_	
18:24:00	0	0.00	Melt								
18:24:15	0	0.00	Melt								
18:24:30	0	0.00	Melt								
18:24:45	0	0.00	Melt								
18:25:00	0	0.00	Melt								
18:25:15	0	0.00	Melt								
18:25:30	0	0.00	Melt								
18:25:45	0	0.00	Melt								
18:26:00	0	0.00	Melt							_	
18:26:15	0	0.00	Melt								
18:26:30	0	0.00	Melt							_	
18:26:45	0	0.00	Melt								
18:27:00	0	0.00	Melt								
18:27:15	0	0.00	Melt								
18:27:30	0	0.00	Melt								
18:27:45	0	0.00	Melt								
18:28:00	0	0.00	Melt					<u> </u>			
18:28:15	0	0.00	Melt						<b></b>		
18:28:30	0	0.00	Melt								
18:28:45	0	0.00	Melt								
18:29:00	0		Тар								
18:29:15	0		Тар								
18:29:30	10		Тар								
18:29:45	15		Тар						<b> </b>		
18:30:00	15		Тар								
18:30:15	10		Тар						<b> </b>		·
18:30:30	10		Tap								
18:30:45	5		Tap								
18:31:00	5		Тар								
18:31:15	5		Тар								
18:31:30	5		Tap						<b></b>		
18:31:45	5		Tap				<u> </u>		}		
18:32:00	5		Тар								
18:32:15	10		Тар	<del></del>							
18:32:30	10		Тар				L				

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1 Time VE 6-min Activity				TE	ST 2		TEST 3				
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:32:45	15		Tap								
18:33:00	25		Тар								
18:33:15	20		Tap								
18:33:30	15		Tap								
18:33:45	15		Тар								
18:34:00	10		Tap								
18:34:15	10		Tap					_			
18:34:30	15		Tap								
18:34:45	20		Tap								
18:35:00	25		Tap								
18:35:15	25		Тар								
18:35:30	20		Tap								
18:35:45	15		Тар								
18:36:00	15		Тар								
18:36:15	10		Tap								
18:36:30	5		Тар								
18:36:45	5	11.72	Tap								
18:37:00	5		Melt								
18:37:15	5		Melt								
18:37:30	5		Melt				_				
18:37:45	0		Melt								
18:38:00	0		Melt								
18:38:15	0		Melt					_			
18:38:30	0		Melt								
18:38:45	0		Melt					_			
18:39:00	0		Melt								
18:39:15 18:39:30	0		Melt Melt								
18:39:45	0		Melt								
18:40:00	0		Melt				_ · .				
18:40:15	0		Melt								
18:40:30	0		Melt								
18:40:45	0		Melt					_			
18:41:00	0		Charge								
18:41:15	0		Charge						<del>  </del>		
18:41:30	0		Charge						<b></b>	<del></del>	
18:41:45	0		Charge								
18:42:00	0		Charge								
18:42:15	0		Charge								
18:42:30	0		Charge					_			
18:42:45	0		Charge								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

TEST 1 Time VE 6-min Activity					TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VΕ	6-min Avg	Activity
18:43:00	0		Charge								
18:43:15	0		Charge					<del></del>			
18:43:30	0		Charge					<del></del>			
18:43:45	0		Charge							_	
18:44:00	0		Charge								
18:44:15	0		Charge								
18:44:30	0		Charge								
18:44:45	0		Charge								
18:45:00	0		Charge								
18:45:15	0		Charge				_				
18:45:30	0		Charge								
18:45:45	0		Charge								
18:46:00	0		Charge								
18:46:15	0		Charge								
18:46:30	0		Charge								
18:46:45	0		Charge								
18:47:00	0		Charge								
18:47:15	0		Charge								
18:47:30	0		Charge								
18:47:45	0		Charge								
18:48:00	0		Charge								
18:48:15	0		Charge								
18:48:30	10		Charge								
18:48:45	_15		Charge								
18:49:00	10		Charge								
18:49:15	10		Charge								
18:49:30	5		Charge								
18:49:45	5		Charge								
18:50:00	5		Charge								
18:50:15	0		Charge								
18:50:30	0		Charge	-		,					
18:50:45	5		Charge								
18:51:00	5		Charge								
18:51:15	10		Charge								
18:51:30	10		Charge								
18:51:45	5		Charge								
18:52:00	5		Charge								
18:52:15	5		Charge								
18:52:30	0		Charge								
18:52:45	0		Charge								
18:53:00	0		Charge								

Table 2.4. Visible Emission Observation Summary, Melt Shop Roof Monitor (continued)

	TES	T 1			TE	ST 2			TES	ST 3	
Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity	Time	VE	6-min Avg	Activity
18:53:15	0		Charge								
18:53:30	0		Charge								
18:53:45	0		Charge								
18:54:00	0		Charge								
18:54:15	0		Charge								
18:54:30	0		Charge								
18:54:45	0_	1.88	Charge								
18:55:00	0		Melt								
18:55:15	0		Melt	:							
18:55:30	0		Melt				]				
18:55:45	0		Melt								
18:56:00	0		Melt								
18:56:15	0		Melt								
18:56:30	0		Melt								
18:56:45	0		Melt								
18:57:00	0		Melt								
18:57:15	0		Melt								
18:57:30	0		Melt								
18:57:45	0		Melt								
18:58:00	0		Melt					•			
18:58:15	0		Melt								
18:58:30	0		Melt								
18:58:45	0		Melt								
18:59:00		ark for 's									

TABLE 2.5. VISIBLE EMISSION OBSERVATION SUMMARY, BAGHOUSE EXHAUST

	TEST 1		<u> </u>	TEST 2		I	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
13:59:00	0		7:15:00	0		12:18:00	0	
13:59:15	0		7:15:15	0		12:18:15	0	
13:59:30	0		7:15:30	0		12:18:30	0	
13:59:45	0		7:15:45	0		12:18:45	15	
14:00:00	0		7:16:00	0_		12:19:00	0	
14:00:15	0		7:16:15	0		12:19:15	0	
14:00:30	0		7:16:30	10		12:19:30	0	
14:00:45	0		7:16:45	0		12:19:45	0	
14:01:00	0		7:17:00	0	}	12:20:00	0	
14:01:15	0		7:17:15	0		12:20:15	0	
14:01:30	0		7:17:30	0		12:20:30	0	
14:01:45	0	<del>                                     </del>	7:17:45	10		12:20:45	0	
14:02:00	0		7:18:00	0		12:21:00	0	
14:02:15	0		7:18:15	0		12:21:15	0	
14:02:30	0		7:18:30	0		12:21:30	0	
14:02:45	0		7:18:45	0		12:21:45	0	
14:03:00	0		7:19:00	0		12:22:00	0	
14:03:15	0		7:19:15	0		12:22:15	0	
14:03:30	0		7:19:30	0		12:22:30	0	
14:03:45	0		7:19:45	0		12:22:45	0	
14:04:00	0		7:20:00	0		12:23:00	0	
14:04:15	0		7:20:15	5		12:23:15	0	
14:04:30	0		7:20:30	0		12:23:30	10	
14:04:45	0	0.00	7:20:45	0	1.04	12:23:45	0	1.04
14:05:00	0	0.00	7:21:00	0	1.04	12:24:00	0	1.04
14:05:15	0	0.00	7:21:15	15	1.67	12:24:15	0	1.04
14:05:30	0	0.00	7:21:30	0	1.67	12:24:30	10	1.46
14:05:45	0	0.00	7:21:45	0	1.67	12:24:45	0	0.83
14:06:00	Ö	0.00	7:22:00	0	1.67	12:25:00	0	0.83
14:06:15	0	0.00	7:22:15	20	2.50	12:25:15	0	0.83
14:06:30	0	0.00	7:22:30	0	2.08	12:25:30	0	0.83
14:06:45	0	0.00	7:22:45	0	2.08	12:25:45	0	0.83
14:07:00	0	0.00	7:23:00	0	2.08	12:26:00	0	0.83
14:07:15	0	0.00	7:23:15	0	2.08	12:26:15	0	0.83
14:07:30	0	0.00	7:23:30	0	2.08	12:26:30	0	0.83
14:07:45	0	0.00	7:23:45	0	1.67	12:26:45	0	0.83
14:08:00	0	0.00	7:24:00	0	1.67	12:27:00	0	0.83

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:08:15	0	0.00	7:24:15	0	1.67	12:27:15	0	0.83
14:08:30	0	0.00	7:24:30	0	1.67	12:27:30	0	0.83
14:08:45	0	0.00	7:24:45	15	2.29	12:27:45	0	0.83
14:09:00	0	0.00	7:25:00	0	2.29	12:28:00	0	0.83
14:09:15	0	0.00	7:25:15	0	2.29	12:28:15	0	0.83
14:09:30	0	0.00	7:25:30	0	2.29	12:28:30	0	0.83
14:09:45	0	0.00	7:25:45	0	2.29	12:28:45	0	0.83
14:10:00	0	0.00	7:26:00	0	2.29	12:29:00	20	1.67
14:10:15	0	0.00	7:26:15	0	2.08	12:29:15	0	1.67
14:10:30	0	0.00	7:26:30	0	2.08	12:29:30	0	1.25
14:10:45	0	0.00	7:26:45	0	2.08	12:29:45	0	1.25
14:11:00	0	0.00	7:27:00	10	2.50	12:30:00	0	1.25
14:11:15	0	0.00	7:27:15	0	1.88	12:30:15	0	1.25
14:11:30	0	0.00	7:27:30	0	1.88	12:30:30	0	0.83
14:11:45	0	0.00	7:27:45	00	1.88	12:30:45	0	0.83
14:12:00	0	0.00	7:28:00	0	1.88	12:31:00	0	0.83
14:12:15	0	0.00	7:28:15	0	1.04	12:31:15	0	0.83
14:12:30	0	0.00	7:28:30	0	1.04	12:31:30	0	0.83
14:12:45	0	0.00	7:28:45	0	1.04	12:31:45	0	0.83
14:13:00	0	0.00	7:29:00	0	1.04	12:32:00	0	0.83
14:13:15	0	0.00	7:29:15	0	1.04	12:32:15	0	0.83
14:13:30	0	0.00	7:29:30	0	1.04	12:32:30	0	0.83
14:13:45	0	0.00	7:29:45	0	1.04	12:32:45	0	0.83
14:14:00	0	0.00	7:30:00	0	1.04	12:33:00	0	0.83
14:14:15	0	0.00	7:30:15	0	1.04	12:33:15	0	0.83
14:14:30	0	0.00	7:30:30	0	1.04	12:33:30	0	0.83
14:14:45	0	0.00	7:30:45	0	0.42	12:33:45	25	1.88
14:15:00	0	0.00	7:31:00	0	0.42	12:34:00	0	1.88
14:15:15	0	0.00	7:31:15	0	0.42	12:34:15	0	1.88
14:15:30	0	0:00	7:31:30	20	1.25	12:34:30	0	1.88
14:15:45	0	0.00	7:31:45	0	1.25	12:34:45	0	1.88
14:16:00	0	0.00	7:32:00	0	1.25	12:35:00	20	1.88
14:16:15	0	0.00	7:32:15	0	1.25	12:35:15	0	1.88
14:16:30	0	0.00	7:32:30	0	1.25	12:35:30	0	1.88
14:16:45	0	0.00	7:32:45	10	1.67	12:35:45	0	1.88
14:17:00	0	0.00	7:33:00	0	1.25	12:36:00	0	1.88
14:17:15	0	0.00	7:33:15	0	1.25	12:36:15	0	1.88

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

Γ	TEST 1			TEST 2	<del></del> ,	T	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:17:30	0	0.00	7:33:30	0	1.25	12:36:30	0	1.88
14:17:45	0	0.00	7:33:45	0	1.25	12:36:45	0	1.88
14:18:00	0	0.00	7:34:00	0	1.25	12:37:00	0	1.88
14:18:15	0	0.00	7:34:15	0	1.25	12:37:15	0	1.88
14:18:30	0	0.00	7:34:30	0	1.25	12:37:30	0 -	1.88
14:18:45	0	0.00	7:34:45	0	1.25	12:37:45	0	1.88
14:19:00	0	0.00	7:35:00	0	1.25	12:38:00	0	1.88
14:19:15	0	0.00	7:35:15	0	1.25	12:38:15	0	1.88
14:19:30	0	0.00	7:35:30	0	1.25	12:38:30	0	1.88
14:19:45	0	0.00	7:35:45	0	1.25	12:38:45	0	1.88
14:20:00	0	0.00	7:36:00	0	1.25	12:39:00	0	1.88
14:20:15	0	0.00	7:36:15	0	1.25	12:39:15	0	1.88
14:20:30	0	0.00	7:36:30	0	1.25	12:39:30	0	1.88
14:20:45	0	0.00	7:36:45	0	1.25	12:39:45	0	0.83
14:21:00	0	0.00	7:37:00	0	1.25	12:40:00	0	0.83
14:21:15	0	0.00	7:37:15	0	1.25	12:40:15	0	0.83
14:21:30	0	0.00	7:37:30	0	0.42	12:40:30	0	0.83
14:21:45	0	0.00	7:37:45	0	0.42	12:40:45	0	0.83
14:22:00	0	0.00	7:38:00	0	0.42	12:41:00	0	0.00
14:22:15	0	0.00	7:38:15	0	0.42	12:41:15	. 0	0.00
14:22:30	0	0.00	7:38:30	0	0.42	12:41:30	0	0.00
14:22:45	0	0.00	7:38:45	0	. 0.00	12:41:45	10	0.42
14:23:00	0	0.00	7:39:00	0	0.00	12:42:00	0	0.42
14:23:15	0	0.00	7:39:15	0	0.00	12:42:15	0	0.42
14:23:30	0	0.00	7:39:30	0	0.00	12:42:30	0	0.42
14:23:45	0	0.00	7:39:45	0	0.00	12:42:45	0	0.42
14:24:00	0	0.00	7:40:00	0	0.00	12:43:00	10	0.83
14:24:15	0	0.00	7:40:15	0	0.00	12:43:15	0	0.83
14:24:30	0	0.00	7:40:30	0	0.00	12:43:30	0	0.83
14:24:45	0	0.00	7:40:45	0	0.00	12:43:45	0	0.83
14:25:00	0	0.00	7:41:00	0	0.00	12:44:00	0	0.83
14:25:15	0	0.00	7:41:15	0	0.00	12:44:15	0	0.83
14:25:30	0	0.00	7:41:30	0	0.00	12:44:30	0	0.83
14:25:45	0	0.00	7:41:45	0	0.00	12:44:45	0	0.83
14:26:00	0	0.00	7:42:00	0_	0.00	12:45:00	0	0.83
14:26:15	0	0.00	7:42:15	0	0.00	12:45:15	0	0.83
14:26:30	0	0.00	7:42:30	0	0.00	12:45:30	0	0.83

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

Γ	TEST 1		<u> </u>	TEST 2		I	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg_
14:26:45	0	0.00	7:42:45	0	0.00	12:45:45	0	0.83
14:27:00	0	0.00	7:43:00	0	0.00	12:46:00	0	0.83
14:27:15	0	0.00	7:43:15	0	0.00	12:46:15	0	0.83
14:27:30	0	0.00	7:43:30	0	0.00	12:46:30	10	1.25
14:27:45	0	0.00	7:43:45	0	0.00	12:46:45	0	1.25
14:28:00	0	0.00	7:44:00	0	0.00	12:47:00	0	1.25
14:28:15	0	0.00	7:44:15	0	0.00	12:47:15	0	1.25
14:28:30	0	0.00	7:44:30	0	0.00	12:47:30	0	1.25
14:28:45	0	0.00	7:44:45	0	0.00	12:47:45	20	1.67
14:29:00	0	0.00	7:45:00	0	0.00	12:48:00	0	1.67
14:29:15	0	0.00	7:45:15	0	0.00	12:48:15	0	1.67
14:29:30	0	0.00	7:45:30	15	0.63	12:48:30	0	1.67
14:29:45	0	0.00	7:45:45	0	0.63	12:48:45	0	1.67
14:30:00	0	0.00	7:46:00	0	0.63	12:49:00	0	1.25
14:30:15	0	0.00	7:46:15	0	0.63	12:49:15	0	1.25
14:30:30	0	0.00	7:46:30	0	0.63	12:49:30	0	1.25
14:30:45	0	0.00	7:46:45	0	0.63	12:49:45	0	1.25
14:31:00	0	0.00	7:47:00	0	0.63	12:50:00	15	1.88
14:31:15	0	0.00	7:47:15	0	0.63	12:50:15	. 0	1.88
14:31:30	0	0.00	7:47:30	10	1.04	12:50:30	0	1.88
14:31:45	0	0.00	7:47:45	0	1.04	12:50:45	0	1.88
14:32:00	0	0.00	7:48:00	0	1.04	12:51:00	0	1.88
14:32:15	10	0.42	7:48:15	0	1.04	12:51:15	0	1.88
14:32:30	0	0.42	7:48:30	0	1.04	12:51:30	0	1.88
14:32:45	0	0.42	7:48:45	0	1.04	12:51:45	0	1.88
14:33:00	0	0.42	7:49:00	0	1.04	12:52:00	20	2.71
14:33:15	0	0.42	7:49:15	0	1.04	12:52:15	0	2.71
14:33:30	0	0.42	7:49:30	0	1.04	12:52:30	0	2.29
14:33:45	0	0.42	7:49:45	15	1.67	12:52:45	0	2.29
14:34:00	0	0.42	7:50:00	0	1.67	12:53:00	0	2.29
14:34:15	0	0.42	7:50:15	0	1.67	12:53:15	0	2.29
14:34:30	0	0.42	7:50:30	.0	1.67	12:53:30	0	2.29
14:34:45	0	0.42	7:50:45	0	1.67	12:53:45	0	1.46
14:35:00	0	0.42	7:51:00	0	1.67	12:54:00	0	1.46
14:35:15	0	0.42	7:51:15	0	1.67	12:54:15	0	1.46
14:35:30	0	0.42	7:51:30	0	1.04	12:54:30	0	1.46
14:35:45	15	1.04	7:51:45	0	1.04	12:54:45	0	1.46

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1	<del></del>	<del></del>	TEST 2			Avg           55:00         0         1.46           55:15         0         1.46           55:30         0         1.46           55:30         0         1.46           56:00         0         0.83           56:15         0         0.83           56:30         0         0.83           56:45         0         0.83           57:15         0         0.83           57:30         0         0.83           58:00         0         0.00           58:15         0         0.00           58:30         0         0.00           59:15         0         0.00           59:30         0         0.00           59:45         0         0.00           59:45         0         0.00           50:30         0         0.00           50:45         0         0.00           59:45         0         0.00           50:30         0         0.00           50:45         0         0.00           50:30         0         0.00           50:45         0         0.00	
Time	VĒ	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:36:00	0	1.04	7:52:00	0	1.04	12:55:00	0	1.46
14:36:15	0	1.04	7:52:15	0	1.04	12:55:15	0	1.46
14:36:30	0	1.04	7:52:30	0	1.04	12:55:30	0	1.46
14:36:45	0	1.04	7:52:45	0	1.04	12:55:45	0	1.46
14:37:00	0	1.04	7:53:00	0	1.04	12:56:00	0	0.83
14:37:15	0	1.04	7:53:15	. 0	1.04	12:56:15	0	0.83
14:37:30	0 _	1.04	7:53:30_	0	0.63	12:56:30	0	0.83
14:37:45	0	1.04	7:53:45_	0	0.63	12:56:45	0	0.83
14:38:00	0	1.04	7:54:00	0	0.63	12:57:00	0	0.83
14:38:15	0	0.63	7:54:15	0	0.63	12:57:15	0	0.83
14:38:30	0	0.63	7:54:30	15	1.25	12:57:30	0	0.83
14:38:45	0	0.63	7:54:45	0	1.25	12:57:45	0	0.83
14:39:00	0	0.63	7:55:00	0	1.25	12:58:00	0	0.00
14:39:15	0	0.63	7:55:15	0	1.25	12:58:15	0	0.00
14:39:30	0	0.63	7:55:30	0	1.25	12:58:30	0	0.00
14:39:45	0	0.63	7:55:45	0	0.63	12:58:45	0	0.00
14:40:00	0	0.63	7:56:00	0	0.63	12:59:00	0	0.00
14:40:15	0	0.63	7:56:15	0	0.63	12:59:15	0	0.00
14:40:30	0	0.63	7:56:30	0	0.63	12:59:30	0	0.00
14:40:45	0	0.63	7:56:45	0	0.63	12:59:45	0	0.00
14:41:00	0	0.63	7:57:00	0	0.63	13:00:00	0	0.00
14:41:15	0	0.63	7:57:15	0	0.63	13:00:15	0	0.00
14:41:30	0	0.63	7:57:30	0	0.63	13:00:30	0	0.00
14:41:45	0	0.00	7:57:45	0	0.63	13:00:45	0	0.00
14:42:00	0	0.00	7:58:00	0	0.63	13:01:00	0	0.00
14:42:15	0	0.00	7:58:15	0	0.63	13:01:15	0	0.00
14:42:30	0	0.00	7:58:30	0	0.63	13:01:30	0	0.00
14:42:45	0	0.00	7:58:45	0	0.63	13:01:45	0	0.00
14:43:00	0	0.00	7:59:00	0	0.63	13:02:00	0	0.00
14:43:15	0	0.00	7:59:15	0	0.63	13:02:15	0	0.00
14:43:30	0	0.00	7:59:30	0	0.63	13:02:30	0	0.00
14:43:45	0	0.00	7:59:45	0	0.63	13:02:45	0	0.00
14:44:00	0	0.00	8:00:00	0	0.63	13:03:00	0	0.00
14:44:15	0	0.00	8:00:15	0	0.63	13:03:15	0	0.00
14:44:30	0	0.00	8:00:30	0	0.00	13:03:30	0	0.00
14:44:45	0	0.00	8:00:45	0_	0.00	13:03:45	0	0.00
14:45:00	0	0.00	8:01:00	0	0.00	13:04:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

Г	TEST 1	<u> </u>		TEST 2	<del>.</del>		TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:45:15	0	0.00	8:01:15	0	0.00	13:04:15	0	0.00
14:45:30	0	0.00	8:01:30	0	0.00	13:04:30	0	0.00
14:45:45	0	0.00	8:01:45	0	0.00	13:04:45	0	0.00
14:46:00	0	0.00	8:02:00	0	0.00	13:05:00	0	0.00
14:46:15	0	0.00	8:02:15	0	0.00	13:05:15	0	0.00
14:46:30	0	0.00	8:02:30	0	0.00	13:05:30	0	0.00
14:46:45	0	0.00	8:02:45	0	0.00	13:05:45	0	0.00
14:47:00	0	0.00	8:03:00	0	0.00	13:06:00	0	0.00
14:47:15	0	0.00	8:03:15	0	0.00	13:06:15	0	0.00
14:47:30	0	0.00	8:03:30	0	0.00	13:06:30	0	0.00
14:47:45	0	0.00	8:03:45	0	0.00	13:06:45	0	0.00
14:48:00	0	0.00	8:04:00	0	0.00	13:07:00	0	0.00
14:48:15	0	0.00	8:04:15	0	0.00	13:07:15	0	0.00
14:48:30	0	0.00	8:04:30	0	0.00	13:07:30	0	0.00
14:48:45	0	0.00	8:04:45	0	0.00	13:07:45	0	0.00
14:49:00	0	0.00	8:05:00	0	0.00	13:08:00	0	0.00
14:49:15	0	0.00	8:05:15	0	0.00	13:08:15	0	0.00
14:49:30	0	0.00	8:05:30	0	0.00	13:08:30	0	0.00
14:49:45	0	0.00	8:05:45	0	0.00	13:08:45	0	0.00
14:50:00	0	0.00	8:06:00	0	0.00	13:09:00	0	0.00
14:50:15	0	0.00	8:06:15	0	0.00	13:09:15	0	0.00
14:50:30	0	0.00	8:06:30	0	0.00	13:09:30	0	0.00
14:50:45	0	0.00	8:06:45	0	0.00	13:09:45	0	0.00
14:51:00	0	0.00	8:07:00	0	0.00	13:10:00	0	0.00
14:51:15	0	0.00	8:07:15	10	0.42	13:10:15	0	0.00
14:51:30	0	0.00	8:07:30	0	0.42	13:10:30	0	0.00
14:51:45	0	0.00	8:07:45	0	0.42	13:10:45	0	0.00
14:52:00	0	0.00	8:08:00	0	0.42	13:11:00	0	0.00
14:52:15	0	0.00	8:08:15	0	0.42	13:11:15	0	0.00
14:52:30	0	0.00	8:08:30	15	1.04	13:11:30	0	0.00
14:52:45	0	0.00	8:08:45	0	1.04	13:11:45	0	0.00
14.53:00	0	0.00	8:09:00	0	1.04	13:12:00	0	0.00
14:53:15	0	0.00	8:09:15	0	1.04	13:12:15	0	0.00
14:53:30	0	0.00	8:09:30	0	1.04	13:12:30	0	0.00
14:53:45	0	0.00	8:09:45	0	1.04	13:12:45	0	0.00
14:54:00	0	0.00	8:10:00	0	1.04	13:13:00	0	0.00
14:54:15	0_	0.00	8:10:15	0	1.04	13:13:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		<u> </u>	TEST 2		1	TEST 3	
Time	VÉ	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
14:54:30	0	0.00	8:10:30	0	1.04	13:13:30	0	0.00
14:54:45	0	0.00	8:10:45	5	1.25	13:13:45	0	0.00
14:55:00	0	0.00	8:11:00	0	1.25	13:14:00	0	0.00
14:55:15	0	0.00	8:11:15	0	1.25	13:14:15	0	0.00
14:55:30	0	0.00	8:11:30	0	1.25	13:14:30	0	0.00
14:55:45	0	0.00	8:11:45	0	1.25	13:14:45	0	0.00
14:56:00	0	0.00	8:12:00	0	1.25	13:15:00	0	0.00
14:56:15	0	0.00	8:12:15	0	1.25	13:15:15	0	0.00
14:56:30	0_	0.00	8:12:30	0	1.25	13:15:30	0	0.00
14:56:45	20	0.83	8:12:45	0	1.25	13:15:45	0	0.00
14:57:00	0	0.83	8:13:00	15	1.88	13:16:00	0	0.00
14:57:15	0	0.83	8:13:15	0	1.46	13:16:15	0	0.00
14:57:30	0	0.83	8:13:30	0	1.46	13:16:30	0	0.00
14:57:45	0	0.83	8:13:45	0	1.46	13:16:45	0	0.00
14:58:00	0	0.83	8:14:00	0	1.46	13:17:00	0	0.00
14:58:15	0	0.83	8:14:15	0	1.46	13:17:15	0	0.00
14:58:30	0	0.83	8:14:30	0	0.83	13:17:30	0	0.00
14:58:45	0	0.83	8:14:45	0	0.83	13:17:45	0	0.00
14:59:00	0	0.83	8:15:00	0	0.83	13:18:00	0	0.00
14:59:15	0	0.83	8:15:15	0	0.83	13:18:15	0	0.00
14:59:30	0	0.83	8:15:30	0	0.83	13:18:30	0	0.00
14:59:45	0	0.83	8:15:45	0	0.83	13:18:45	0	0.00
15:00:00	0	0.83	8:16:00	0	0.83	13:19:00	0	0.00
15:00:15	0	0.83	8:16:15	0	0.83	13:19:15	0	0.00
15:00:30	0	0.83	8:16:30	0	0.83	13:19:30	0	0.00
15:00:45	0	0.83	8:16:45	0	0.63	13:19:45	0	0.00
15:01:00	0	0.83	8:17:00	0	0.63	13:20:00	0	0.00
15:01:15	0	0.83	8:17:15	0	0.63	13:20:15	0	0.00
15:01:30	0	0.83	8:17:30	0	0.63	13:20:30	0	0.00
15:01:45	0	0.83	8:17:45	20	1.46	13:20:45	0	0.00
15:02:00	Ö	0.83	8:18:00	0	1.46	13:21:00	0	0.00
15:02:15	0	0.83	8:18:15	0	1.46	13:21:15	0	0.00
15:02:30	0	0.83	8:18:30	0	1.46	13:21:30	0	0.00
15:02:45	0	0.00	8:18:45	15	2.08	13:21:45	0	0.00
15:03:00	0	0.00	8:19:00	0	1.46	13:22:00	0	0.00
15:03:15	0	0.00	8:19:15	0	1.46	13:22:15	0	0.00
15:03:30	0	0.00	8:19:30	0	1.46	13:22:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		<del></del>	TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:03:45	0	0.00	8:19:45	0	1.46	13:22:45	0	0.00
15:04:00	0	0.00	8:20:00	0	1.46	13:23:00	0	0.00
15:04:15	0	0.00	8:20:15	0	1.46	13:23:15	0	0.00
15:04:30	0	0.00	8:20:30	0	1.46	13:23:30	0	0.00
15:04:45	0	0.00	8:20:45	0	1.46	13:23:45	0	0.00
15:05:00	0	0.00	8:21:00	Ö	1.46	13:24:00	0	0.00
15:05:15	0	0.00	8:21:15	10	1.88	13:24:15	0	0.00
15:05:30	0	0.00	8:21:30	0	1.88	13:24:30	0	0.00
15:05:45	25	1.04	8:21:45	0	1.88	13:24:45	0	0.00
15:06:00	0	1.04	8:22:00	0	1.88	13:25:00	0	0.00
15:06:15	0	1.04	8:22:15	0	1.88	13:25:15	0	0.00
15:06:30	0	1.04	8:22:30	0	1.88	13:25:30	0	0.00
15:06:45	10	1.46	8:22:45	0	1.88	13:25:45	0	0.00
15:07:00	0	1.46	8:23:00	0	1.88	13:26:00	0	0.00
15:07:15	0	1.46	8:23:15	0	1.88	13:26:15	0	0.00
15:07:30	0	1.46	8:23:30	0	1.88	13:26:30	0	0.00
15:07:45	0	1.46	8:23:45	0	1.04	13:26:45	0	0.00
15:08:00	0	1.46	8:24:00	0	1.04	13:27:00	0	0.00
15:08:15	0	1.46	8:24:15	0	1.04	13:27:15	0	0.00
15:08:30	0	1.46	8:24:30	0	1.04	13:27:30	0	0.00
15:08:45	0	1.46	8:24:45	0	0.42	13:27:45	0	0.00
15:09:00	0	1.46	8:25:00	0	0.42	13:28:00	0	0.00
15:09:15	0	1.46	8:25:15	0	0.42	13:28:15	0	0.00
15:09:30	0	1.46	8:25:30	0	0.42	13:28:30	0	0.00
15:09:45	0	1.46	8:25:45	0	0.42	13:28:45	0	0.00
15:10:00	0	1.46	8:26:00	0	0.42	13:29:00	0	0.00
15:10:15	0	1.46	8:26:15	0	0.42	13:29:15	0	0.00
15:10:30	0	1.46	8:26:30	0	0.42	13:29:30	0	0.00
15:10:45	0	1.46	8:26:45	0	0.42	13:29:45	0	0.00
15:11:00	0	1.46	8:27:00	0	0.42	13:30:00	0	0.00
15:11:15	0	1.46	8:27:15	0	0.00	13:30:15	0	0.00
15:11:30	0	1.46	8:27:30	0	0.00	13:30:30	0	0.00
15:11:45	0	0.42	8:27:45	0	0.00	13:30:45	0	0.00
15:12:00	0	0.42	8:28:00	0	0.00	13:31:00	0	0.00
15:12:15	0	0.42	8:28:15	0	0.00	13:31:15	0	0.00
15:12:30	0	0.42	8:28:30	0	0.00	13:31:30	0	0.00
15:12:45	0	0.00	8:28:45	0	0.00	13:31:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

<u> </u>	TEST 1		_	TEST 2		1	TEST 3	6-min Avg 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	
Time	VE	6-min Avg	Time	VÉ	6-min Avg	Time	VE		
15:13:00	0	0.00	8:29:00	0	0.00	13:32:00	0	0.00	
15:13:15	0	0.00	8:29:15	0	0.00	13:32:15	0	0.00	
15:13:30	0	0.00	8:29:30	0	0.00	13:32:30	0	0.00	
15:13:45	0	0.00	8:29:45	0	0.00	13:32:45	0	0.00	
15:14:00	0	0.00	8:30:00	0	0.00	13:33:00	0	0.00	
15:14:15	0	0.00	8:30:15	10	0.42	13:33:15	0	0.00	
15:14:30	0	0.00	8:30:30	0	0.42	13:33:30	0	0.00	
15:14:45	0	0.00	8:30:45	0	0.42	13:33:45	0	0.00	
15:15:00	0	0.00	8:31:00	0	0.42	13:34:00	0	0.00	
15:15:15	0	0.00	8:31:15	0	0.42	13:34:15	0	0.00	
15:15:30	0	0.00	8:31:30	0	0.42	13:34:30	0	0.00	
15:15:45	0	0.00	8:31:45	0	0.42	13:34:45	0	0.00	
15:16:00	0	0.00	8:32:00	0	0.42	13:35:00	0	0.00	
15:16:15	0	0.00	8:32:15	0	0.42	13:35:15	0	0.00	
15:16:30	0	0.00	8:32:30	0	0.42	13:35:30	0	0.00	
15:16:45	0	0.00	8:32:45	0	0.42	13:35:45	0	0.00	
15:17:00	0	0.00	8:33:00	0	0.42	13:36:00	0	0.00	
15:17:15	0	0.00	8:33:15	0	0.42	13:36:15	0	0.00	
15:17:30	0	0.00	8:33:30	0	0.42	13:36:30	0	0.00	
15:17:45	0	0.00	8:33:45	0	0.42	13:36:45	0	0.00	
15:18:00	0	0.00	8:34:00	0	0.42	13:37:00	0	0.00	
15:18:15	0	0.00	8:34:15	0	0.42	13:37:15	0	0.00	
15:18:30	0	0.00	8:34:30	0	0.42	13:37:30	0	0.00	
15:18:45	0	0.00	8:34:45	0	0.42	13:37:45	0	0.00	
15:19:00	0	0.00	8:35:00	0 .	0.42	13:38:00	0	0.00	
15:19:15	0	0.00	8:35:15	0	0.42	13:38:15	0	0.00	
15:19:30	0	0.00	8:35:30	0	0.42	13:38:30	0	0.00	
15:19:45	0	0.00	8:35:45	0	0.42	13:38:45	0	0.00	
15:20:00	0	0.00	8:36:00	0	0.42	13:39:00	0	0.00	
15:20:15	0	0.00	8:36:15	0	0.00	13:39:15	0	0.00	
15:20:30	0	0.00	8:36:30	0	0.00	13:39:30	Ō	0.00	
15:20:45	0	0.00	8:36:45	0	0.00	13:39:45	· 0	0.00	
15:21:00	0	0.00	8:37:00	0	0.00	13:40:00	0	0.00	
15:21:15	0	0.00	8:37:15	0	0.00	13:40:15	0	0.00	
15:21:30	0	0.00	8:37:30	0	0.00	13:40:30	0	0.00	
15:21:45	0	0.00	8:37:45	0	0.00	13:40:45	0	0.00	
15:22:00	0	0.00	8:38:00	0	0.00	13:41:00	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

ſ	TEST 1			TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:22:15	0	0.00	8:38:15	0	0.00	13:41:15	0	0.00
15:22:30	0	0.00	8:38:30	0	0.00	13:41:30	0	0.00
15:22:45	0	0.00	8:38:45	0	0.00	13:41:45	0	0.00
15:23:00	0	0.00	8:39:00	0	0.00	13:42:00	0	0.00
15:23:15	0	0.00	8:39:15	0	0.00	13:42:15	0	0.00
15:23:30	0	0.00	8:39:30	0	0.00	13:42:30	0	0.00
15:23:45	0	0.00	8:39:45	0	0.00	13:42:45	0	0.00
15:24:00	0	0.00	8:40:00	0	0.00	13:43:00	0	0.00
15:24:15	Ö	0.00	8:40:15	0	0.00	13:43:15	0	0.00
15:24:30	0	0.00	8:40:30	0	0.00	13:43:30	0	0.00
15:24:45	0	0.00	8:40:45	0	0.00	13:43:45	0	0.00
15:25:00	0	0.00	8:41:00	0	0.00	13:44:00	0	0.00
15:25:15	0	0.00	8:41:15	0	0.00	13:44:15	0	0.00
15:25:30	0	0.00	8:41:30	0	0.00	13:44:30	0	0.00
15:25:45	0	0.00	8:41:45	0	0.00	13:44:45	0	0.00
15:26:00	0	0.00	8:42:00	0	0.00	13:45:00	0	0.00
15:26:15	0	0.00	8:42:15	0	0.00	13:45:15	0	0.00
15:26:30	0	0.00	8:42:30	0	0.00	13:45:30	0	0.00
15:26:45	0	0.00	8:42:45	0	0.00	13:45:45	0	0.00
15:27:00	0	0.00	8:43:00	0	0.00	13:46:00	0	0.00
15:27:15	0	0.00	8:43:15	0	0.00	13:46:15	0	0.00
15:27:30	0	0.00	8:43:30	0	0.00	13:46:30	0	0.00
15:27:45	0	0.00	8:43:45	0	0.00	13:46:45	0	0.00
15:28:00	0	0.00	8:44:00	0	0.00	13:47:00	0	0.00
15:28:15	0	0.00	8:44:15	0	0.00	13:47:15	0	0.00
15:28:30	0	0.00	8:44:30	0	0.00	13:47:30	0	0.00
15:28:45	0	0.00	8:44:45	0	0.00	13:47:45	0	0.00
15:29:00	0	0.00	8:45:00	0	0.00	13:48:00	0	0.00
15:29:15	0	0.00	8:45:15	0	0.00	13:48:15	0	0.00
15:29:30	0	0.00	8:45:30	0	0.00	13:48:30	0	0.00
15:29:45	0	0.00	8:45:45	0	0.00	13:48:45	0	0.00
15:30:00	0	0.00	8:46:00	0	0.00	13:49:00	0	0.00
15:30:15	0	0.00	8:46:15	0	0.00	13:49:15	0	0.00
15:30:30	0	0.00	8:46:30	0	0.00	13:49:30	0	0.00
15:30:45	0	0.00	8:46:45	0	0.00	13:49:45	0	0.00
15:31:00	0	0.00	8:47:00	0	0.00	13:50:00	0	0.00
15:31:15	0	0.00	8:47:15	0	0.00	13:50:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2		<u> </u>	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:31:30	0	0.00	8:47:30	0	0.00	13:50:30	0	0.00
15:31:45	0	0.00	8:47:45	0	0.00	13:50:45	0	0.00
15:32:00	0	0.00	8:48:00	0	0.00	13:51:00	0	0.00
15:32:15	0	0.00	8:48:15	0	0.00	13:51:15	0	0.00
15:32:30	0	0.00	8:48:30	0	0.00	13:51:30	0	0.00
15:32:45	0	0.00	8:48:45	0	0.00	13:51:45	0	0.00
15:33:00	0	0.00	8:49:00	0	0.00	13:52:00	0	0.00
15:33:15	0	0.00	8:49:15	0	0.00	13:52:15	0	0.00
15:33:30	0	0.00	8:49:30	0	0.00	13:52:30	0	0.00
15:33:45	0	0.00	8:49:45	0	0.00	13:52:45	0	0.00
15:34:00	0	0.00	8:50:00	0	0.00	13:53:00	0	0.00
15:34:15	0	0.00	8:50:15	0	0.00	13:53:15	0	0.00
15:34:30	0	0.00	8:50:30	0	0.00	13:53:30	0	0.00
15:34:45	0	0.00	8:50:45	0	0.00	13:53:45	0	0.00
15:35:00	0	0.00	8:51:00	0	0.00	13:54:00	. 0	0.00
15:35:15	0	0.00	8:51:15	0	0.00	13:54:15	0	0.00
15:35:30	0	0.00	8:51:30	0	0.00	13:54:30	0	0.00
15:35:45	0	0.00	8:51:45	0	0.00	13:54:45	0	0.00
15:36:00	0	0.00	8:52:00	0	0.00	13:55:00	0	0.00
15:36:15	0	0.00	8:52:15	0	0.00	13:55:15	0	0.00
15:36:30	0	0.00	8:52:30	0	0.00	13:55:30	0	0.00
15:36:45	0	0.00	8:52:45	0	0.00	13:55:45	0_	0.00
15:37:00	0	0.00	8:53:00	0	0.00	13:56:00	0	0.00
15:37:15	0	0.00	8:53:15	0	0.00	13:56:15	0	0.00
15:37:30	0	0.00	8:53:30	0	0.00	13:56:30	0	0.00
15:37:45	0	0.00	8:53:45	0	0.00	13:56:45	0	0.00
15:38:00	0	0.00	8:54:00	0_	0.00	13:57:00	0	0.00
15:38:15	0	0.00	8:54:15	0	0.00	13:57:15	0	0.00
15:38:30	0	0.00	8:54:30	0	0.00	13:57:30	0	0.00
15:38:45	0	0.00	8:54:45	0	0.00	13:57:45	0	0.00
15:39:00	0	0.00	8:55:00	0	0.00	13:58:00	0	0.00
15:39:15	0	0.00	8:55:15	0	0.00	13:58:15	0	0.00
15:39:30	Ö	0.00	8:55:30	0	0.00	13:58:30	0	0.00
15:39:45	0	0.00	8:55:45	0	0.00	13:58:45	0	0.00
15:40:00	0	0.00	8:56:00	0	0.00	13:59:00	0	0.00
15.40:15	0	0.00	8:56:15	0	0.00	13:59:15	0	0.00
15:40:30	0	0.00	8:56:30	0	0.00	13:59:30	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1	<del></del>		TEST 2		Γ	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:40:45	0	0.00	8:56:45	0	0.00	13:59:45	0	0.00
15:41:00	0	0.00	8:57:00	0	0.00	14:00:00	0	0.00
15:41:15	0	0.00	8:57:15	0	0.00	14:00:15	0	0.00
15:41:30	0	0.00	8:57:30	0	0.00	14:00:30	20	0.83
15:41:45	0	0.00	8:57:45	0	0.00	14:00:45	0	0.83
15:42:00	0	0.00	8:58:00	0	0.00	14:01:00	0	0.83
15:42:15	0	0.00	8:58:15	0	0.00	14:01:15	O	0.83
15:42:30	0	0.00	8:58:30	0	0.00	14:01:30	0	0.83
15:42:45	0	0.00	8:58:45	0	0.00	14:01:45	10	1.25
15:43:00	0	0.00	8:59:00	0	0.00	14:02:00	0	1.25
15:43:15	0	0.00	8:59:15	0	0.00	14:02:15	0	1.25
15:43:30	0	0.00	8:59:30	0	0.00	14:02:30	0	1.25
15:43:45	0	0.00	8:59:45	0	0.00	14:02:45	0	1.25
15:44:00	0	0.00	9:00:00	0	0.00	14:03:00	0	1.25
15:44:15	0	0.00	9:00:15	0	0.00	14:03:15	0	1.25
15:44:30	0	0.00	9:00:30	0	0.00	14:03:30	0	1.25
15:44:45	0	0.00	9:00:45	0	0.00	14:03:45	0	1.25
15:45:00	0	0.00	9:01:00	0	0.00	14:04:00	0	1.25
15:45:15	0	0.00	9:01:15	0	0.00	14:04:15	0	1.25
15:45:30	0	0.00	9:01:30	0	0.00	14:04:30	0	1.25
15:45:45	0	0.00	9:01:45	0	0.00	14:04:45	0	1.25
15:46:00	0	0.00	9:02:00	0	0.00	14:05:00	0	1.25
15:46:15	0	0.00	9:02:15	0	0.00	14:05:15	0	1.25
15:46:30	0	0.00	9:02:30	0	0.00	14:05:30	0	1.25
15:46:45	0	0.00	9:02:45	0	0.00	14:05:45	0	1.25
15:47:00	0	0.00	9:03:00	0	0.00	14:06:00	0	1.25
15:47:15	0	0.00	9:03:15	0	0.00	14:06:15	0	1.25
15:47:30	0	0.00	9:03:30	0	0.00	14:06:30	0	0.42
15:47:45	0	0.00	9:03:45	0	0.00	14:06:45	0	0.42
15:48:00	0	0.00	9:04:00	Ö	0.00	14:07:00	0	0.42
15:48:15	0	0.00	9:04:15	0	0.00	14:07:15	0	0.42
15:48:30	0	0.00	9:04:30	0	0.00	14:07:30	0	0.42
15:48:45	0	0.00	9:04:45	0	0.00	14:07:45	0	0.00
15:49:00	0	0.00	9:05:00	. 0	0.00	14:08:00	0	0.00
15:49:15	0	0.00	9:05:15	0	0.00	14:08:15	0	0.00
15:49:30	0	0.00	9:05:30	0	0.00	14:08:30	15	0.63
15:49:45	0	0.00	9:05:45	0	0.00	14:08:45	0	0.63

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		T "	TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
15:50:00	0	0.00	9:06:00	0	0.00	14:09:00	0	0.63
15:50:15	0	0.00	9:06:15	0_	0.00	14:09:15	0	0.63
15:50:30	0	0.00	9:06:30	Ö	0.00	14:09:30	Ö	0.63
15:50:45	0	0.00	9:06:45	0	0.00	14:09:45	0	0.63_
15:51:00	0	0.00	9:07:00	0	0.00	14:10:00	0	0.63
15:51:15	0	0.00	9:07:15	0 _	0.00	14:10:15	0	0.63
15:51:30	0	0.00	9:07:30	0	0.00	14:10:30	0	0.63
15:51:45	0	0.00	9:07:45	0	0.00	14:10:45	0	0.63
15:52:00	0	0.00	9:08:00	0	0.00	14:11:00	0	0.63
15:52:15	0	0.00	9:08:15	0	0.00	14:11:15	0	0.63
15:52:30	0	0.00	9:08:30	0	0.00	14:11:30	0	0.63
15:52:45	0	0.00	9:08:45	0	0.00	14:11:45	0	0.63
15:53:00	0	0.00	9:09:00	0	0.00	14:12:00	0	0.63
15:53:15	0	0.00	9:09:15	0	0.00	14:12:15	0	0.63
15:53:30	0	0.00	9:09:30	0	0.00	14:12:30	0	0.63
15:53:45	0	0.00	9:09:45	0	0.00	14:12:45	0	0.63
15:54:00	0	0.00	9:10:00	0	0.00	14:13:00	0	0.63
15:54:15	0	0.00	9:10:15	0	0.00	14:13:15	15	1.25
15:54:30	Ö	0.00	9:10:30	0	0.00	14:13:30	0	1.25
15:54:45	0	0.00	9:10:45	0	0.00	14:13:45	0	1.25
15:55:00	0	0.00	9:11:00	0	0.00	14:14:00	0	1.25
15:55:15	0	0.00	9:11:15	0	0.00	14:14:15	0	1.25
15:55:30	0	0.00	9:11:30	0	0.00	14:14:30	0	0.63
15:55:45	0	0.00	9:11:45	0	0.00	14:14:45	0	0.63
15:56:00	0	0.00	9:12:00	0	0.00	14:15:00	0	0.63
15:56:15	0	0.00	9:12:15	0	0.00	14:15:15	0	0.63
15:56:30	0	0.00	9:12:30	0	0.00	14:15:30	0	0.63
15:56:45	0	0.00	9:12:45	0	0.00	14:15:45	0	0.63
15:57:00	0	0.00	9:13:00	0	0.00	14:16:00	0	0.63
15:57:15	0	0.00	9:13:15	0	0.00	14:16:15	0	0.63
15:57:30	0	0.00	9:13:30	0	0.00	14:16:30	10	1.04
15:57:45	0	0.00	9:13:45	0	0.00	14:16:45	0	1.04
15:58:00	0	0.00	9:14:00	0 ·	0.00	14:17:00	0	1.04
15:58:15	0	0.00	9:14:15	0	0.00	14:17:15	0	1.04
15:58:30	0	0.00	9:14:30	0	0.00	14:17:30	0	1.04
15:58:45	0	0.00	9:14:45	0	0.00	14:17:45	0	1.04
15:59:00	0	0.00	9:15:00	0	0.00	14:18:00	0	1.04

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

[	TEST 1		<u> </u>	TEST 2		<del>                                     </del>	TEST 3	VE         6-min Avg           0         1.04           0         1.04           0         1.04           0         1.04           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.42           0         0.02           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE		
15:59:15	0	0.00	9:15:15	0	0.00	14:18:15	0	1.04	
15:59:30	0	0.00	9:15:30	0	0.00	14:18:30	0	1.04	
15:59:45	0	0.00	9:15:45	0	0.00	14:18:45	0	1.04	
16:00:00	0	0.00	9:16:00	0	0.00	14:19:00	0	1.04	
16:00:15	0	0.00	9:16:15	0	0.00	14:19:15	0	0.42	
16:00:30	0	0.00	9:16:30	0	0.00	14:19:30	0	0.42	
16:00:45	0	0.00	9:16:45	0	0.00	14:19:45	0	0.42	
16:01:00	0	0.00	9:17:00	0	0.00	14:20:00	0	0.42	
16:01:15	0	0.00	9:17:15	0	0.00	14:20:15	0	0.42	
16:01:30	0	0.00	9:17:30	0	0.00	14:20:30	0	0.42	
16:01:45	0	0.00	9:17:45	0	0.00	14:20:45	0	0.42	
16:02:00	0	0.00	9:18:00	0	0.00	14:21:00	0	0.42	
16:02:15	0	0.00	9:18:15	0	0.00	14:21:15	0	0.42	
16:02:30	0	0.00	9:18:30	0	0.00	14:21:30	0	0.42	
16:02:45	0	0.00	9:18:45	0	0.00	14:21:45	0	0.42	
16:03:00	0	0.00	9:19:00	0	0.00	14:22:00	0	0.42	
16:03:15	0	0.00	9:19:15	0	0.00	14:22:15	0	0.42	
16:03:30	0	0.00	9:19:30	0	0.00	14:22:30	0	0.00	
16:03:45	0	0.00	9:19:45	0	0.00	14:22:45	0	0.00	
16:04:00	0	0.00	9:20:00	0	0.00	14:23:00	0	0.00	
16:04:15	0	0.00	9:20:15	0	0.00	14:23:15	0	0.00	
16:04:30	0	0.00	9:20:30	0	0.00	14:23:30	0	0.00	
16:04:45	0	0.00	9:20:45	0	0.00	14:23:45	0	0.00	
16:05:00	0	0.00	9:21:00	0	0.00	14:24:00	0	0.00	
16:05:15	0	0.00	9:21:15	0	0.00	14:24:15	0	0.00	
16:05:30	0	0.00	9:21:30	0	0.00	14:24:30	0	0.00	
16:05:45	0	0.00	9:21:45	0	0.00	14:24:45	0	0.00	
16:06:00	0	0.00	9:22:00	5	0.21	14:25:00	0	0.00	
16:06:15	0	0.00	9:22:15	0	0.21	14:25:15	0	0.00	
16:06:30	0	0.00	9:22:30	0	0.21	14:25:30	0	0.00	
16:06:45	0	0.00	9:22:45	0	0.21	14:25:45	0	0.00	
16:07:00	0	0.00	9:23:00	0	0.21	14:26:00	0	0.00	
16:07:15	0	0.00	9:23:15	0	0.21	14:26:15	0	0.00	
16:07:30	0	0.00	9:23:30	0	0.21	14:26:30	0	0.00	
16:07:45	0	0.00	9:23:45	0	0.21	14:26:45	0	0.00	
16:08:00	0	0.00	9:24:00	0	0.21	14:27:00	0	0.00	
16:08:15	0	0.00	9:24:15	10	0.63	14:27:15	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2		T	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:08:30	0	0.00	9:24:30	0	0.63	14:27:30	0	0.00
16:08:45	0	0.00	9:24:45	0	0.63	14:27:45	0	0.00
16:09:00	0	0.00	9:25:00	0	0.63	14:28:00	0	0.00
16:09:15	0	0.00	9:25:15	0	0.63	14:28:15	0	0.00
16:09:30	0	0.00	9:25:30	0	0.63	14:28:30	0	0.00
16:09:45	0	0.00	9:25:45	0	0.63	14:28:45	0	0.00
16:10:00	0	0.00	9:26:00	0	0.63	14:29:00	0	0.00
16:10:15	0	0.00	9:26:15	0	0.63	14:29:15	0	0.00
16:10:30	0	0.00	9:26:30	0	0.63	14:29:30	0	0.00
16:10:45	0	0.00	9:26:45	0	0.63	14:29:45	0	0.00
16:11:00	0	0.00	9:27:00	0	0.63	14:30:00	0	0.00
16:11:15	0	0.00	9:27:15	0	0.63	14:30:15	0	0.00
16:11:30	0	0.00	9:27:30	0	0.63	14:30:30	0	0.00
16:11:45	0	0.00	9:27:45	0	0.63_	14:30:45	0	0.00
16:12:00	0	0.00	9:28:00	0	0.42	14:31:00	0	0.00
16:12:15	0	0.00	9:28:15	0	0.42	14:31:15	0	0.00
16:12:30	0	0.00	9:28:30	0	0.42	14:31:30	0	0.00
16:12:45	0 .	0.00	9:28:45	0	0.42	14:31:45	0	0.00
16:13:00	0	0.00	9:29:00	0	0.42	14:32:00	0	0.00
16:13:15	0	0.00	9:29:15	0	0.42	14:32:15	0	0.00
16:13:30	0	0.00	9:29:30	0	0.42	14:32:30	0	0.00
16:13:45	0	0.00	9:29:45	_0	0.42	14:32:45	0	0.00
16:14:00	0	0.00	9:30:00	0	0.42	14:33:00	0	0.00
16:14:15	0	0.00	9:30:15_	0	0.00	14:33:15	0	0.00
16:14:30	0	0.00	9:30:30	0	0.00	14:33:30	0	0.00
16:14:45	0	0.00	9:30:45	0	0.00	14:33:45	15	0.63
16:15:00	0	0.00	9:31:00	0	0.00	14:34:00	0	0.63
16:15:15	0	0.00	9:31:15	0	0.00	14:34:15	0	0.63
16:15:30	0	0.00	9:31:30	0	0.00	14:34:30	0	0.63
16:15:45	20	0.83	9:31:45	0	0.00	14:34:45	0	0.63
16:16:00	0_	0.83	9:32:00	0	0.00	14:35:00	0	0.63
16:16:15	0	0.83	9:32:15	0	0.00	14:35:15	0	0.63
16:16:30	0	0.83	9:32:30	15	0.63	14:35:30	0	0.63
16:16:45	10	1.25	9:32:45	0	0.63	14:35:45	0	0.63
16:17:00	0	1.25	9:33:00	0	0.63	14:36:00	0	0.63
16:17:15	0	1.25	9:33:15	0	0.63	14:36:15	0	0.63
16:17:30	0	1.25	9:33:30	0	0.63	14:36:30	0	0.63

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2		Ī	TEST 3	<del></del>
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
16:17:45	0	1.25	9:33:45	0	0.63	14:36:45	0	0.63
16:18:00	0	1.25	9:34:00	0	0.63	14:37:00	0	0.63
16:18:15	0	1.25	9:34:15	0	0.63	14:37:15	0	0.63
16:18:30	0	1.25	9:34:30	0	0.63	14:37:30	0	0.63
16:18:45	0	1.25	9:34:45	0	0.63	14:37:45	0	0.63
16:19:00	0	1.25	9:35:00	0	0.63	14:38:00	0	0.63
16:19:15	0	1.25	9:35:15	0	0.63	14:38:15	0	0.63
16:19:30	0	1.25	9:35:30	0	0.63	14:38:30	0	0.63
16:19:45	0	1.25	9:35:45	0	0.63	14:38:45	0	0.63 ·
16:20:00	0	1.25	9:36:00	0	0.63	14:39:00	0	0.63
16:20:15	0	1.25	9:36:15	0	0.63	14:39:15	0	0.63
16:20:30	0	1.25	9:36:30	0	0.63	14:39:30	0	0.63
16:20:45	0	1.25	9:36:45	0	0.63	14:39:45	0	0.00
16:21:00	0	1.25	9:37:00	0	0.63	14:40:00	0	0.00
16:21:15	0	1.25	9:37:15	0	0.63	14:40:15	0	0.00
16:21:30	0	1.25	9:37:30	0	0.63	14:40:30	0	0.00
16:21:45	0	0.42	9:37:45	0	0.63	14:40:45	0	0.00
16:22:00	0	0.42	9:38:00	0	0.63	14:41:00	0	0.00
16:22:15	0	0.42	9:38:15	0	0.63	14:41:15	0	0.00
16:22:30	0	0.42	9:38:30	0	0.00	14:41:30	0	0.00
16:22:45	0	0.00	9:38:45	0	0.00	14:41:45	0	0.00
16:23:00	0	0.00	9:39:00	0	0.00	14:42:00	0	0.00
16:23:15	0	0.00	9:39:15	0	0.00	14:42:15	0	0.00
16:23:30	0	0.00	9:39:30	0	0.00	14:42:30	0	0.00
16:23:45	0	0.00	9:39:45	0	0.00	14:42:45	0	0.00
16:24:00	0	0.00	9:40:00	0	0.00	14:43:00	0	0.00
16:24:15	0	0.00	9:40:15	0	0.00	14:43:15	0	0.00
16:24:30	0	0.00	9:40:30	0	0.00	14:43:30	0	0.00
16:24:45	0	0.00	9:40:45	0	0.00	14:43:45	0	0.00
16:25:00	0	0.00	9:41:00	0	0.00	14:44:00	0	0.00
16:25:15	0	0.00	9:41:15	0	0.00	14:44:15	0	0.00
16:25:30	0	0.00	9:41:30	0	0.00	14:44:30	0	0.00
16:25:45	0	0.00	9:41:45	0	0.00	14:44:45	0	0.00
16:26:00	0	0.00	9:42:00	0	0.00	14:45:00	0	0.00
16:26:15	0	0.00	9:42:15	0	0.00	14:45:15	ō	0.00
16:26:30	0	0.00	9:42:30	0	0.00	14:45:30	0	0.00
16:26:45	0	0.00	9:42:45	0	0.00	14:45:45	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

<u> </u>	TEST 1		T	TEST 2			TEST 3	6-min Avg 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE			
16:27:00	0	0.00	9:43:00	0	0.00	14:46:00	0	0.00		
16:27:15	0	0.00	9:43:15	0	0.00	14:46:15	0	0.00		
16:27:30	0	0.00	9:43:30	0	0.00	14:46:30	0_	0.00		
16:27:45	0	0.00	9:43:45	0	0.00	14:46:45	0	0.00		
16:28:00	0	0.00	9:44:00	10	0.42	14:47:00	0	0.00		
16:28:15	15	0.63	9:44:15	0	0.42	14:47:15	0	0.00		
16:28:30	0	0.63	9:44:30	0	0.42	14:47:30	0	0.00		
16:28:45	0	0.63	9:44:45	0	0.42	14:47:45	0	0.00		
16:29:00	0	0.63	9:45:00	0	0.42	14:48:00	0	0.00		
16:29:15	0	0.63	9:45:15	0	0.42	14:48:15	0	0.00		
16:29:30	10	1.04	9:45:30	0	0.42	14:48:30	0	0.00		
16:29:45	0	1.04	9:45:45	0	0.42	14:48:45	0	0.00		
16:30:00	0	1.04	9:46:00	0	0.42	14:49:00	0	0.00		
16:30:15	0	1.04	9:46:15	0	0.42	14:49:15	0_	0.00		
16:30:30	0	1.04	9:46:30	0	0.42	14:49:30	0	0.00		
16:30:45	0	1.04	9:46:45	0	0.42	14:49:45	0	0.00		
16:31:00	0	1.04	9:47:00	0	0.42	14:50:00	0	0.00		
16:31:15	0	1.04	9:47:15	0	0.42	14:50:15	0	0.00		
16:31:30	20	1.88	9:47:30	0	0.42	14:50:30	0	0.00		
16:31:45	0	1.88	9:47:45	0	0.42	14:50:45	0	0.00		
16:32:00	0	1.88	9:48:00	0	0.42	14:51:00	0	0.00		
16:32:15	0	1.88	9:48:15	0	0.42	14:51:15	0	0.00		
16:32:30	0	1.88	9:48:30	0	0.42	14:51:30	0	0.00		
16:32:45	0	1.88	9:48:45	0	0.42	14:51:45	0	0.00		
16:33:00	0	1.88	9:49:00	0	0.42	14:52:00	0	0.00		
16:33:15	0	1.88	9:49:15	0	0.42	14:52:15	0	0.00		
16:33:30	0	1.88	9:49:30	0	0.42	14:52:30	0	0.00		
16:33:45	0	1.88	9:49:45	0	0.42	14:52:45	0	0.00		
16:34:00	0	1.88	9:50:00	0	0.00	14:53:00	0	0.00		
16:34:15	0	1.25	9:50:15	0	0.00	14:53:15	0	0.00		
16:34:30	0	1.25	9:50:30	0	0.00	14:53:30	0	0.00		
16:34:45	0	1.25	9:50:45	0	0.00	14:53:45	0	0.00		
16:35:00	0	1.25	9:51:00	0	0.00	14:54:00	0	0.00		
16:35:15	0	1.25	9:51:15	0	0.00	14:54:15	0	0.00		
16:35:30	0	0.83	9:51:30	0	0.00	14:54:30	0	0.00		
16:35:45	0	0.83	9:51:45	0	0.00	14:54:45	0	0.00		
16:36:00	0	0.83	9:52:00	0	0.00	14:55:00	0	0.00		

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2			TEST 3	6-min Avg 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE		
16:36:15	0	0.83	9:52:15	0	0.00	14:55:15	0	0.00	
16:36:30	0	0.83	9:52:30	0	0.00	14:55:30	0_	0.00	
16:36:45	0	0.83	9:52:45	0	0.00	14:55:45	0	0.00	
16:37:00	0	0.83	9:53:00	0	0.00	14:56:00	0_	0.00	
16:37:15	0	0.83	9:53:15	0	0.00	14:56:15	0	0.00	
16:37:30	0	0.00	9:53:30	0	0.00	14:56:30	0_	0.00	
16:37:45	0	0.00	9:53:45	· 0	0.00	14:56:45	0	0.00	
16:38:00	0	0.00	9:54:00	- 0	0.00	14:57:00	0	0.00	
16:38:15	0	0.00	9:54:15	0	0.00	14:57:15	0	0.00	
16:38:30	0	0.00	9:54:30	0	0.00	14:57:30	0	0.00	
16:38:45	20	0.83	9:54:45	0	0.00	14:57:45	0	0.00	
16:39:00	0	0.83	9:55:00	0	0.00	14:58:00	0	0.00	
16:39:15	0	0.83	9:55:15	0	0.00	14:58:15	0	0.00	
16:39:30	0	0.83	9:55:30	0	0.00	14:58:30	0	0.00	
16:39:45	0	0.83	9:55:45	0	0.00	14:58:45	0	0.00	
16:40:00	0	0.83	9:56:00	0	0.00	14:59:00	0	0.00	
16:40:15	0	0.83	9:56:15	0	0.00	14:59:15	0	0.00	
16:40:30	0	0.83	9:56:30	0	0.00	14:59:30	0	0.00	
16:40:45	0	0.83	9:56:45	0	0.00	14:59:45	0	0.00	
16:41:00	0	0.83	9:57:00	10	0.42	15:00:00	0	0.00	
16:41:15	0	0.83	9:57:15	0	0.42	15:00:15	0	0.00	
16:41:30	0	0.83	9:57:30	0	0.42	15:00:30	0	0.00	
16:41:45	0	0.83	9:57:45	0	0.42	15:00:45	0	0.00	
16:42:00	0	0.83	9:58:00	0.~_	0.42	15:01:00	0	0.00	
16:42:15	0	0.83	9:58:15	0	0.42	15:01:15	0	0.00	
16:42:30	0	0.83	9:58:30	0	0.42	15:01:30	0	0.00	
16:42:45	0	0.83	9:58:45	0	0.42	15:01:45	0	0.00	
16:43:00	0	0.83	9:59:00	0	0.42	15:02:00	0	0.00	
16:43:15	0	0.83	9:59:15	0	0.42	15:02:15	0	0.00	
16:43:30	0	0.83	9:59:30	0	0.42	15:02:30	0	0.00	
16:43:45	0	0.83	9:59:45	0	0.42	15:02:45	0	0.00	
16:44:00	0	0.83	10:00:00	0	0.42	15:03:00	0	0.00	
16:44:15	0	0.83	10:00:15	0	0.42	15:03:15	0	0.00	
16:44:30	0	0.83	10:00:30	0	0.42	15:03:30	0	0.00	
16:44:45	0	0.00	10:00:45	0	0.42	15:03:45	0	0.00	
16:45:00	0	0.00	10:01:00	0	0.42	15:04:00	0	0.00	
16:45:15	0	0.00	10:01:15	0	0.42	15:04:15	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

<u> </u>	TEST 1		<u> </u>	TEST 2			TEST 3	VE         6-min Avg           0         0.00		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE			
16:45:30	0	0.00	10:01:30	0	0.42	15:04:30	0	0.00		
16:45:45	0	0.00	10:01:45	0	0.42	15:04:45	0	0.00		
16:46:00	0	0.00	10:02:00	0	0.42	15:05:00	0	0.00		
16:46:15	0	0.00	10:02:15	0	0.42	15:05:15	0	0.00		
16:46:30	0	0.00	10:02:30	0	0.42	15:05:30	0	0.00		
16:46:45	0	0.00	10:02:45	0	0.42	15:05:45	0	0.00		
16:47:00	0	0.00	10:03:00	0	0.00	15:06:00	0	0.00		
16:47:15	0	0.00	10:03:15	0	0.00	15:06:15	0	0.00		
16:47:30	0	0.00	10:03:30	0	0.00	15:06:30	0	0.00		
16:47:45	0	0.00	10:03:45	0	0.00	15:06:45	0	0.00		
16:48:00	0	0.00	10:04:00	0	0.00	15:07:00	0	0.00		
16:48:15	0	0.00	10:04:15	0	0.00	15:07:15	0	0.00		
16:48:30	0	0.00	10:04:30	0	0.00	15:07:30	0	0.00		
16:48:45	0	0.00	10:04:45	0	0.00	15:07:45	0	0.00		
16:49:00	0	0.00	10:05:00	0	0.00	15:08:00	0	0.00		
16:49:15	0	0.00	10:05:15	15	0.63	15:08:15	0	0.00		
16:49:30	0	0.00	10:05:30	0	0.63	15:08:30	0	0.00		
16:49:45	0	0.00	10:05:45	0	0.63	15:08:45	0	0.00		
16:50:00	0	0.00	10:06:00	0	0.63	15:09:00	0	0.00		
16:50:15	0	0.00	10:06:15	0	0.63	15:09:15	0	0.00		
16:50:30	0	0.00	10:06:30	0	0.63	15:09:30	0	0.00		
16:50:45	0	0.00	10:06:45	0	0.63	15:09:45	0	0.00		
16:51:00	0	0.00	10:07:00	0	0.63	15:10:00	. 0	0.00		
16:51:15	10	. 0.42	10:07:15	0	0.63	15:10:15	0	0.00		
16:51:30	0	0.42	10:07:30	0	0.63	15:10:30	0	0.00		
16:51:45	0	0.42	10:07:45	0	0.63	15:10:45	0	0.00		
16:52:00	0	0.42	10:08:00	0	0.63	15:11:00	0	0.00		
16:52:15	0	0.42	10:08:15	0	0.63	15:11:15	0	0.00		
16:52:30	25	1.46	10:08:30	0	0.63	15:11:30	0	0.00		
16:52:45	0	1.46	10:08:45	0	0.63	15:11:45	0	0.00		
16:53:00	0	1.46	10:09:00	0	0.63	15:12:00	0	0.00		
16:53:15	0	1.46	10:09:15	0	0.63	15:12:15	0	0.00		
16:53:30	0	1.46	10:09:30	0	0.63	15:12:30	0	0.00		
16:53:45	0	1.46	10:09:45	0	0.63	15:12:45	0	0.00		
16:54:00	0	1.46	10:10:00	0	0.63	15:13:00	0	0.00		
16:54:15	0	1.46	10:10:15	0	0.63	15:13:15	0	0.00		
16:54:30	0	1.46	10:10:30	0	0.63	15:13:30	0	0.00		

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		[	TEST 2			TEST 3	VE         6-min Avg           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00           0         0.00		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE			
16:54:45	0	1.46	10:10:45	0	0.63	15:13:45	0	0.00		
16:55:00	0	1.46	10:11:00	0	0.63	15:14:00	0	0.00		
16:55:15	0	1.46	10:11:15	0	0.00	15:14:15	0	0.00		
16:55:30	0	1.46	10:11:30	0	0.00	15:14:30	0	0.00		
16:55:45	0	1.46	10:11:45	0	0.00	15:14:45	0	0.00		
16:56:00	0	1.46	10:12:00	15	0.63	15:15:00	0	0.00		
16:56:15	0	1.46	10:12:15	0	0.63	15:15:15	0	0.00		
16:56:30	0	1.46	10:12:30	0	0.63	15:15:30	0	0.00		
16:56:45	20	2.29	10:12:45	0	0.63	15:15:45	0	0.00		
16:57:00	0	2.29	10:13:00	0	0.63	15:16:00	0	0.00		
16:57:15	0	1.88	10:13:15	10	1.04	15:16:15	0	0.00		
16:57:30	0	1.88	10:13:30	0	1.04	15:16:30	0	0.00		
16:57:45	0	1.88	10:13:45	0	1.04	15:16:45	0	0.00		
16:58:00	0	1.88	10:14:00	0	1.04	15:17:00	0	0.00		
16:58:15	0	1.88	10:14:15	0	1.04	15:17:15	0	0.00		
16:58:30	0	0.83	10:14:30	0	1.04	15:17:30	0	0.00		
16:58:45	0	0.83	10:14:45	0	1.04	15:17:45	0	0.00		
16:59:00	0	0.83	10:15:00	. 0	1.04	15:18:00	0	0.00		
16:59:15	0	0.83	10:15:15	0	1.04	15:18:15	0	0.00		
16:59:30	0	0.83	10:15:30	0	1.04	15:18:30	0	0.00		
16:59:45	0	0.83	10:15:45	0	1.04	15:18:45	0	0.00		
17:00:00	0	0.83	10:16:00	0	1.04	15:19:00	0	0.00		
17:00:15	0	0.83	10:16:15	0	1.04	15:19:15	0	0.00		
17:00:30	0	0.83	10:16:30	0	1.04	15:19:30	0	0.00		
17:00:45	0	0.83	10:16:45	10	1.46	15:19:45	0	0.00		
17:01:00	0	0.83	10:17:00	0	1.46	15:20:00	0	0.00		
17:01:15	0	0.83	10:17:15	0	1.46	15:20:15	0	0.00		
17:01:30	0	0.83	10:17:30	0	1.46	15:20:30	0	0.00		
17:01:45	0	0.83	10:17:45	0	1.46	15:20:45	0	0.00		
17:02:00	0	0.83	10:18:00	15	1.46	15:21:00	0	0.00		
17:02:15	0	0.83	10:18:15	0	1.46	15:21:15	0	0.00		
17:02:30	0	0.83	10:18:30	0	1.46	15:21:30	0	0.00		
17:02:45	0	0.00	10:18:45	0	1.46	15:21:45	0	0.00		
17:03:00	0	0.00	10:19:00	0	1.46	15:22:00	0	0.00		
17:03:15	0	0.00	10:19:15	0	1.04	15:22:15	0	0.00		
17:03:30	0	0.00	10:19:30	0	1.04	15:22:30	0	0.00		
17:03:45	0	0.00	10:19:45	0	1.04	15:22:45	0	0.00		

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1	-		TEST 2		T	TEST 3	VE         6-min Avg           0         0.00	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE		
17:04:00	0	0.00	10:20:00	0	1.04	15:23:00	0	0.00	
17:04:15	Ö	0.00	10:20:15	10	1.46	15:23:15	0	0.00	
17:04:30	0	0.00	10:20:30	0	1.46	15:23:30	0	0.00	
17:04:45	0	0.00	10:20:45	0	1.46	15:23:45	0	0.00	
17:05:00	0	0.00	10:21:00	0	1.46	15:24:00	0	0.00	
17:05:15	0	0.00	10:21:15	0	1.46	15:24:15	0	0.00	
17:05:30	0	0.00	10:21:30	0	1.46	15:24:30	0	0.00	
17:05:45	0	0.00	10:21:45	0	1.46	15:24:45	0	0.00	
17:06:00	0	0.00	10:22:00	0	1.46	15:25:00	0	0.00	
17:06:15	0	0.00	10:22:15	15	2.08	15:25:15	0	0.00	
17:06:30	0	0.00	10:22:30	0	2.08	15:25:30	0	0.00	
17:06:45	0	0.00	10:22:45	Ō	1.67	15:25:45	0	0.00	
17:07:00	0_	0.00	10:23:00	0	1.67	15:26:00	0	0.00	
17:07:15	0	0.00	10:23:15	0	1.67	15:26:15	0	0.00	
17:07:30	0	0.00	10:23:30	0	1.67	15:26:30	0	0.00	
17:07:45	0	0.00	10:23:45	0	1.67	15:26:45	0	0.00	
17:08:00	0	0.00	10:24:00	0	1.04	15:27:00	0	0.00	
17:08:15	0	0.00	10:24:15	0	1.04	15:27:15	0	0.00	
17:08:30	20	0.83	10:24:30	0	1.04_	15:27:30	0	0.00	
17:08:45	0	0.83	10:24:45	0	1.04	15:27:45	0	0.00	
17:09:00	0	0.83	10:25:00	0	1.04	15:28:00	0	0.00	
17:09:15	0	0.83	10:25:15	0	1.04	15:28:15	0	0.00	
17:09:30	0	0.83	10:25:30	0	1.04	15:28:30	0	0.00	
17:09:45	0	0.83	10:25:45	0	1.04	15:28:45	0	0.00	
17:10:00	0	0.83	10:26:00	0	1.04	15:29:00	0	0.00	
17:10:15	0	0.83	10:26:15	0	0.63	15:29:15	0	0.00	
17:10:30	0	0.83	10:26:30	0	0.63	15:29:30	0	0.00	
17:10:45	0	0.83	10:26:45	0	0.63	15:29:45	0	0.00	
17:11:00	0	0.83	10:27:00	15	1.25	15:30:00	0	0.00	
17:11:15	0	0.83	10:27:15	0	1.25	15:30:15	0	0.00	
17:11:30	0	0.83	10:27:30	0	1.25	15:30:30	0	0.00	
17:11:45	0	0.83	10:27:45	0	1.25	15:30:45	0	0.00	
17:12:00	0	0.83	10:28:00	0	1.25	15:31:00	0	0.00	
17:12:15	0	0.83	10:28:15	15	1.25	15:31:15	0	0.00	
17:12:30	0	0.83	10:28:30	0	1.25	15:31:30	0	0.00	
17:12:45	0	0.83	10:28:45	0	1.25	15:31:45	0	0.00	
17:13:00	0	0.83	10:29:00	0	1.25	15:32:00	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		T	TEST 2			Avg           32:15         0         0.00           32:30         0         0.00           32:45         0         0.00           33:15         0         0.00           33:30         0         0.00           33:45         0         0.00           34:00         0         0.00           34:30         0         0.00           34:45         0         0.00           35:00         0         0.00           35:15         0         0.00           35:30         0         0.00           35:45         0         0.00           36:00         0         0.00		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg	
17:13:15	0	0.83	10:29:15	0	1.25	15:32:15	0	0.00	
17:13:30	0	0.83	10:29:30	0	1.25	15:32:30	0	0.00	
17:13:45	0	0.83	10:29:45	0	1.25	15:32:45	0	0.00	
17:14:00	0	0.83	10:30:00	0	1.25	15:33:00	0	0.00	
17:14:15	0	0.83	10:30:15	0	1.25	15:33:15	0	0.00	
17:14:30	25	1.04	10:30:30	0	1.25	15:33:30	0	0.00	
17:14:45	0	1.04	10:30:45	0	1.25	15:33:45	0	0.00	
17:15:00	0	1.04	10:31:00	0	1.25	15:34:00	0	0.00	
17:15:15	0	1.04	10:31:15	0	1.25	15:34:15	0	0.00	
17:15:30	20	1.88	10:31:30	0	1.25	15:34:30	0	0.00	
17:15:45	0	1.88	10:31:45	0	1.25	15:34:45	0	0.00	
17:16:00	0	1.88	10:32:00	0	1.25	15:35:00	0	0.00	
17:16:15	0	1.88	10:32:15	0	1.25	15:35:15	0	0.00	
17:16:30	0	1.88	10:32:30	0	1.25	15:35:30	0	0.00	
17:16:45	0	1.88	10:32:45	0	1.25	15:35:45	0	0.00	
17:17:00	0	1.88	10:33:00	0	0.63	15:36:00	0	0.00	
17:17:15	0	1.88	10:33:15	0	0.63	15:36:15	0	0.00	
17:17:30	0	1.88	10:33:30	0	0.63	15:36:30	0	0.00	
17:17:45	0	1.88	10:33:45	0	0.63	15:36:45	0	0.00	
17:18:00	0	1.88	10:34:00	0	0.63	15:37:00	0	0.00	
17:18:15	0	1.88	10:34:15	0	0.00	15:37:15	0	0.00	
17:18:30	0	1.88	10:34:30	0	0.00	15:37:30	0	0.00	
17:18:45	0	1.88	10:34:45	0	0.00	15:37:45	0	0.00	
17:19:00	0	1.88	10:35:00	15	0.63	15:38:00	0	0.00	
17:19:15	0	1.88	10:35:15	0	0.63	15:38:15	0	0.00	
17:19:30	0	1.88	10:35:30	0	0.63	15:38:30	0	0.00	
17:19:45	0	1.88	10:35:45	0	0.63	15:38:45	0	0.00	
17:20:00	0	1.88	10:36:00	0	0.63	15:39:00	0	0.00	
17:20:15	0	1.88	10:36:15	10	1.04	15:39:15	0	0.00	
17:20:30	0	0.83	10:36:30	0	1.04	15:39:30	0	0.00	
17:20:45	0	0.83	10:36:45	0	1.04	15:39:45	0	0.00	
17:21:00	0	0.83	10:37:00	0	1.04	15:40:00	0	0.00	
17:21:15	0	0.83	10:37:15	0	1.04	15:40:15	0	0.00	
17:21:30	0	0.00	10:37:30	0	1.04	15:40:30	0	0.00	
17:21:45	0	0.00	10:37:45	0	1.04	15:40:45	0	0.00	
17:22:00	0	0.00	10:38:00	0	1.04	15:41:00	0	0.00	
17:22:15	0	0.00	10:38:15	0	1.04	15:41:15	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		Γ	TEST 2	<del></del>	Τ	Av       15:41:30     0     0.0       15:41:45     25     1.0       15:42:00     0     1.0       15:42:15     0     1.0       15:42:30     0     1.0       15:42:45     0     1.0       15:43:00     0     1.0		
Time	VE	6-min Avg	Time	VE	6-min Avg	Time		6-min Avg	
17:22:30	0	0.00	10:38:30	0	1.04	15:41:30	0	0.00	
17:22:45	0	0.00	10:38:45	0	1.04	15:41:45	25	1.04	
17:23:00	0	0.00	10:39:00	5	1.25	15:42:00	0	1.04	
17:23:15	0	0.00	10:39:15	0	1.25	15:42:15	0	1.04	
17:23:30	0	0.00	10:39:30	0	1.25	15:42:30	0	1.04	
17:23:45	0	0.00	10:39:45	0	1.25	15:42:45	0_	1.04	
17:24:00	0	0.00	10:40:00	10	1.67	15:43:00	0	1.04	
17:24:15	0	0.00	10:40:15	0	1.67	15:43:15	0	1.04	
17:24:30	0	0.00	10:40:30	0	1.67	15:43:30	0	1.04	
17:24:45	0	0.00	10:40:45	0	1.67	15:43:45	0	1.04	
17:25:00	_ 0	0.00	10:41:00	10	1.46	15:44:00	0	1.04	
17:25:15	0	0.00	10:41:15	0	1.46	15:44:15	0	1.04	
17:25:30	0	0.00	10:41:30	0	1.46	15:44:30	0	1.04	
17:25:45	0	0.00	10:41:45	0	1.46	15:44:45	0	1.04	
17:26:00	0	0.00	10:42:00	0	1.46	15:45:00	0	1.04	
17:26:15	0	0.00	10:42:15	0	1.04	15:45:15	0	1.04	
17:26:30	0	0.00	10:42:30	0	1.04	15:45:30	0	1.04	
17:26:45	0	0.00	10:42:45	0	1.04	15:45:45	0	1.04	
17:27:00	0	0.00	10:43:00	0	1.04	15:46:00	0	1.04	
17:27:15	0	0.00	10:43:15	10	1.46	15:46:15	0	1.04	
17:27:30	0	0.00	10:43:30	0	1.46	15:46:30	0	1.04	
17:27:45	0	0.00	10:43:45	0	1.46	15:46:45	0	1.04	
17:28:00	0	0.00	10:44:00	0	1.46	15:47:00	0	1.04	
17:28:15	0	0.00	10:44:15	0	1.46	15:47:15	0	1.04	
17:28:30	0	0.00	10:44:30	0	1.46	15:47:30	0	1.04	
17:28:45	0	0.00	10:44:45	0	1.46	15:47:45	0	0.00	
17:29:00	0	0.00	10:45:00	0	1.25	15:48:00	0	0.00	
17:29:15	0	0.00	10:45:15	0	1.25	15:48:15	0	0.00	
17:29:30	0	0.00	10:45:30	15	1.88	15:48:30	0	0.00	
17:29:45	0	0.00	10:45:45	0	1.88	15:48:45	0	0.00	
17:30:00	0	0.00	10:46:00	0	1.46	15:49:00	0	0.00	
17:30:15	0	0.00	10:46:15	0	1.46	15:49:15	0	0.00	
17:30:30	0	0.00	10:46:30	0	1.46	15:49:30	0	0.00	
17:30:45	0	0.00	10:46:45	0	1.46	15:49:45	0	0.00	
17:31:00	0	0.00	10:47:00	0	1.04	15:50:00	0	0.00	
17:31:15	0	0.00	10:47:15	0	1.04	15:50:15	0	0.00	
17:31:30	Ö	0.00	10:47:30	0	1.04	15:50:30	0	0.00	

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		T	TEST 2		I	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:31:45	0	0.00	10:47:45	0	1.04	15:50:45	0	0.00
17:32:00	0	0.00	10:48:00	0	1.04	15:51:00	0	0.00
17:32:15	0	0.00	10:48:15	0	1.04	15:51:15	0	0.00
17:32:30	0	0.00	10:48:30	0	1.04	15:51:30	0	0.00
17:32:45	0	0.00	10:48:45	0	1.04	15:51:45	0	0.00
17:33:00	0	0.00	10:49:00	0	1.04	15:52:00	0	0.00
17:33:15	0	0.00	10:49:15	0	0.63	15:52:15	0	0.00
17:33:30	0	0.00	10:49:30	0	0.63	15:52:30	O	0.00
17:33:45	0	0.00	10:49:45	0	0.63	15:52:45	0	0.00
17:34:00	0	0.00	10:50:00	15	1.25	15:53:00	0	0.00
17:34:15	0	0.00	10:50:15	0	1.25	15:53:15	0	0.00
17:34:30	0	0.00	10:50:30	0	1.25	15:53:30	0	0.00
17:34:45	0	0.00	10:50:45	0	1.25	15:53:45	0	0.00
17:35:00	0	0.00	10:51:00	0	1.25	15:54:00	0	0.00
17:35:15	0	0.00	10:51:15	10	1.67	15:54:15	0	0.00
17:35:30	0	0.00	10:51:30	0	1.04	15:54:30	0	0.00
17:35:45	0	0.00	10:51:45	0	1.04	15:54:45	0	0.00
17:36:00	0	0.00	10:52:00	0	1.04	15:55:00	0	0.00
17:36:15	0	0.00	10:52:15	0	1.04	15:55:15	0	0.00
17:36:30	0	0.00	10:52:30	0	1.04	15:55:30	0	0.00
17:36:45	0	0.00	10:52:45	0	1.04	15:55:45	0	0.00
17:37:00	0	0.00	10:53:00	0	1.04	15:56:00	0	0.00
17:37:15	0	0.00	10:53:15	0	1.04	15:56:15	0	0.00
17:37:30	0	0.00	10:53:30	0	1.04	15:56:30	Q	0.00
17:37:45	0	0.00	10:53:45	0	1.04	15:56:45	0	0.00
17:38:00	0	0.00	10:54:00	0	1.04	15:57:00	0	0.00
17:38:15	0	0.00	10:54:15	0	1.04	15:57:15	0	0.00
17:38:30	0	0.00	10:54:30	0	1.04	15:57:30	0	0.00
17:38:45	0	0.00	10:54:45	0	1.04	15:57:45	0	0.00
17:39:00	0	0.00	10:55:00	0	1.04	15:58:00	0	0.00
17:39:15	0	0.00	10:55:15	0	1.04	15:58:15	0	0.00
17:39:30	0	0.00	10:55:30	0	1.04	15:58:30	0	0.00
17:39:45	0	0.00	10:55:45	0	1.04	15:58:45	0	0.00
17:40:00	0	0.00	10:56:00	0	0.42	15:59:00	0	0.00
17:40:15	0	0.00	10:56:15	0	0.42	15:59:15	0	0.00
17:40:30	0	0.00	10:56:30	0	0.42	15:59:30	0	0.00
17:40:45	0	0.00	10:56:45	0	0.42	15:59:45	Ō	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		Г	TEST 2		Ι	TEST 3	-
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:41:00	0	0.00	10:57:00	0	0.42	16:00:00	0	0.00
17:41:15	0	0.00	10:57:15	0	0.00	16:00:15	0	0.00
17:41:30	0	0.00	10:57:30	0	0.00	16:00:30	0	0.00
17:41:45	0	0.00	10:57:45	0	0.00	16:00:45	0	0.00
17:42:00	0	0.00	10:58:00	0	0.00	16:01:00	0	0.00
17:42:15	0	0.00	10:58:15	Ö	0.00	16:01:15	0	0.00
17:42:30	0	0.00	10:58:30	. 0	0.00	16:01:30	0	0.00
17:42:45	0	0.00	10:58:45	0	0.00	16:01:45	0	0.00
17:43:00	0	0.00	10:59:00	0	0.00	16:02:00	0	0.00
17:43:15	0	0.00	10:59:15	0	0.00	16:02:15	0	0.00
17:43:30	0	0.00	10:59:30	0	0.00	16:02:30	0	0.00
17:43:45	0	0.00_	10:59:45	0	0.00	16:02:45	0	0.00
17:44:00	0	0.00	11:00:00	0	0.00	16:03:00	0	0.00
17:44:15	0	0.00	11:00:15	0	0.00	16:03:15	0	0.00
17:44:30	0	0.00	11:00:30	0	0.00	16:03:30	0	0.00
17:44:45	0	0.00	11:00:45	0	0.00	16:03:45	0	0.00
17:45:00	0	0.00	11:01:00	0	0.00	16:04:00	0	0.00
17:45:15	0	0.00	11:01:15	0	0.00	16:04:15	0	0.00
17:45:30	0	0.00	11:01:30	0	0.00	16:04:30	0	0.00
17:45:45	0	0.00	11:01:45	0	0.00	16:04:45	0	0.00
17:46:00	0	0.00	11:02:00	0	0.00	16:05:00	0	0.00
17:46:15	0	0.00	11:02:15	0	0.00	16:05:15	0	0.00
17:46:30	0	0.00	11:02:30	0	0.00	16:05:30	0	0.00
17:46:45	0	0.00	11:02:45	0	0.00	16:05:45	0	0.00
17:47:00	0	0.00	11:03:00	0	0.00	16:06:00	0	0.00
17:47:15	0	0.00	11:03:15	0	0.00	16:06:15	0	0.00
17:47:30	0	0.00	11:03:30	0	0.00	16:06:30	0	0.00
17:47:45	0	0.00	11:03:45	0	0.00	16:06:45	. 0	0.00
17:48:00	0	0.00	11:04:00	0	0.00	16:07:00	0	0.00
17:48:15	0	0.00	11:04:15	0	0.00	16:07:15	0	0.00
17:48:30	0	0.00	11:04:30	0	0.00	16:07:30	0	0.00
17:48:45	0	0.00	11:04:45	0	0.00	16:07:45	0	0.00
17:49:00	0	0.00	11:05:00	0	0.00	16:08:00	- 0	0.00
17:49:15	0	0.00	11:05:15	0	0.00	16:08:15	0	0.00
17:49:30	0	0.00	11:05:30	0	0.00	16:08:30	0	0.00
17:49:45	0	0.00	11:05:45	0	0.00	16:08:45	0	0.00
17:50:00	0	0.00	11:06:00	0	0.00	16:09:00	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		<u> </u>	TEST 2		T .	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:50:15	0	0.00	11:06:15	0	0.00	16:09:15	0	0.00
17:50:30	0	0.00	11:06:30	0	0.00	16:09:30	0	0.00
17:50:45	0	0.00	11:06:45	0	0.00	16:09:45	0	0.00
17:51:00	0	0.00	11:07:00	0	0.00	16:10:00	0	0.00
17:51:15	0	0.00	11:07:15	0	0.00	16:10:15	0	0.00
17:51:30	0	0.00	11:07:30	0	0.00	16:10:30	0	0.00
17:51:45	0	0.00	11:07:45	0	0.00	16:10:45	0	0.00
17:52:00	0	0.00	11:08:00	0	0.00	16:11:00	0	0.00
17:52:15	0	0.00	11:08:15	0	0.00	16:11:15	0	0.00
17:52:30	0	0.00	11:08:30	0	0.00	16:11:30	0	0.00
17:52:45	0	0.00	11:08:45	0	0.00	16:11:45	0	0.00
17:53:00	Ö	0.00	11:09:00	0	0.00	16:12:00	0	0.00
17:53:15	0	0.00	11:09:15	0	0.00	16:12:15	0	0.00
17:53:30	0	0.00	11:09:30	0	0.00	16:12:30	0	0.00
17:53:45	0	0.00	11:09:45	0	0.00	16:12:45	0	0.00
17:54:00	Ö	0.00	11:10:00	0	0.00	16:13:00	0	0.00
17:54:15	0	0.00	11:10:15	0	0.00	16:13:15	0	0.00
17:54:30	0	0.00	11:10:30	0	0.00	16:13:30	0	0.00
17:54:45	0	0.00	11:10:45	0	0.00	16:13:45	0	0.00
17:55:00	0	0.00	11:11:00	0	0.00	16:14:00	0	0.00
17:55:15	0	0.00	11:11:15	0	0.00	16:14:15	0	0.00
17:55:30	0	0.00	11:11:30	0	0.00	16:14:30	0	0.00
17:55:45	0	0.00	11:11:45	0	0.00	16:14:45	0	0.00
17:56:00	0	0.00	11:12:00	0	0.00	16:15:00	0	0.00
17:56:15	0	0.00	11:12:15	0	0.00	16:15:15	0	0.00
17:56:30	0	0.00	11:12:30	0	0.00	16:15:30	0	0.00
17:56:45	0	0.00	11:12:45	0	0.00	16:15:45	0	0.00
17:57:00	0	0.00	11:13:00	0	0.00	16:16:00	0	0.00
17:57:15	0	0.00	11:13:15	0	0.00	16:16:15	0	0.00
17:57:30	0	0.00	11:13:30	0	0.00	16:16:30	0	0.00
17:57:45	0	0.00	11:13:45	0	0.00	16:16:45	Ō	0.00
17:58:00	0	0.00	11:14:00	0	0.00	16:17:00	0	0.00
17:58:15	0	0.00	11:14:15	0	0.00	16:17:15	0_	0.00
17:58:30	0	0.00	11:14:30	0	0.00	16:17:30	0	0.00
17:58:45	0	0.00	11:14:45	0	0.00	16:17:45	0	0.00
17:59:00	0	0.00	11:15:00	0	0.00	16:18:00	0	0.00
17:59:15	0	0.00	11:15:15	0	0.00	16:18:15	0	0.00

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

}

	TEST 1		1	TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
17:59:30	0	0.00	11:15:30	0	0.00	16:18:30	0	0.00
17:59:45	0	0.00	11:15:45	0	0.00	16:18:45	0	0.00
18:00:00	0	0.00	11:16:00	0	0.00	16:19:00	0	0.00
18:00:15	0	0.00	11:16:15	0	0.00	16:19:15	0	0.00
18:00:30	0	0.00	11:16:30	0	0.00	16:19:30	0	0.00
18:00:45	0	0.00	11:16:45	0	0.00	16:19:45	0	0.00
18:01:00	0	0.00	11:17:00	0	0.00			
18:01:15	0	0.00	11:17:15	0	0.00			
18:01:30	0	0.00	11:17:30	0	0.00			
18:01:45	0	0.00	11:17:45	0	0.00			
18:02:00	· 0	0.00	11:18:00	0	0.00			
18:02:15	0	0.00	11:18:15	0	0.00		. •	
18:02:30	0	0.00	11:18:30	0	0.00			
18:02:45	0 _	0.00	11:18:45	0 .	0.00			
18:03:00	0	0.00	11:19:00	0	0.00			
18:03:15	0	0.00	11:19:15	0	0.00			
18:03:30	0	0.00	11:19:30	0	0.00			
18:03:45	0	0.00	11:19:45	0	0.00			
18:04:00	0	0.00	11:20:00	0	0.00			}
18:04:15	0	0.00	11:20:15	0	0.00			
18:04:30	0	0.00	11:20:30	0	0.00			
18:04:45	0	0.00	11:20:45	0	0.00			
18:05:00	0	0.00	11:21:00	0	0.00			
18:05:15	0	0.00						
18:05:30	0	0:00						
18:05:45	0	0.00						
18:06:00	0	0.00						<u></u>
18:06:15	0	0.00						<u> </u>
18:06:30	0	0.00						
18:06:45	0	0.00						
18:07:00	0	0.00						
18:07:15	0	0.00						
18:07:30	0	0.00						
18:07:45	0	0.00						
18:08:00	0	0.00						
18:08:15	0	0.00						
18:08:30	0	0.00						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

·	TEST 1			TEST 2		<del></del>	TEST 3	<del></del>
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:08:45	0	0.00						
18:09:00	0	0.00						_
18:09:15	0	0.00						
18:09:30	0	0.00						
18:09:45	0	0.00						
18:10:00	0	0.00						
18:10:15	0	0.00						
18:10:30	0	0.00		<u>-</u>	,	•		
18:10:45	0	0.00		_				
18:11:00	0	0.00						
18:11:15	0	0.00						
18:11:30	0	0.00						
18:11:45	0	0.00						
18:12:00	0	0.00						
18:12:15	0	0.00						
18:12:30	0	0.00						
18:12:45	0	0.00						
18:13:00	0 _	0.00					_	
18:13:15	0	0.00						
18:13:30	0	0.00						
18:13:45	0	0.00						
18:14:00	0	0.00						
18:14:15	0	0.00	•					
18:14:30	25	1.04						
18:14:45	0	1.04						
18:15:00	0	1.04						
18:15:15	0	1.04						
18:15:30	0	1.04						
18:15:45	0	1.04						
18:16:00	0	1.04						
18:16:15	0	1.04						
18:16:30	0	1.04						
18:16:45	0	1.04						
18:17:00	0	1.04						
18:17:15	0	1.04						
18:17:30	0	1.04					, i	
18:17:45	. 0	1.04						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2	<del></del>	<u> </u>	TEST 3	· · · · · · · · · · · · · · · · · · ·
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:18:00	0	1.04						9
18:18:15	0	1.04		<del></del>			·	
18:18:30	0	1.04			-	-		
18:18:45	0	1.04						
18:19:00	0	1.04						
18:19:15	0	1.04	- "					
18:19:30	0	1.04						
18:19:45	0	1.04						
18:20:00	0	1.04						
18:20:15	0	1.04						
18:20:30	0	0.00						
18:20:45	0	0.00						
18:21:00	0	0.00						
18:21:15	25	1.04						
18:21:30	5	1.25						
18:21:45	0	1.25						
18:22:00	0	1.25						
18:22:15	0	1.25						
18:22:30	0	1.25						
18:22:45	0	1.25						
18:23:00	0	1.25						
18:23:15	0	1.25						
18:23:30	0	1.25						
18:23:45	0	1.25						
18:24:00	0	1.25						
18:24:15	0	1.25	•					
18:24:30	0	1.25						
18:24:45	0	1.25						
18:25:00	0	1.25						
18:25:15	0	1.25		,				<u> </u>
18:25:30	0 ·	1.25						
18:25:45	0	1.25						
18:26:00	0	1.25						
18:26:15	0_	1.25						
18:26:30	0	1.25						
18:26:45	0	1.25						
18:27:00	0	1.25						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2			TEST 3	<u>-</u>
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:27:15	0	0.21						
18:27:30	0	0.00						
18:27:45	0	0.00						
18:28:00	0	0.00						
18:28:15	0	0.00						
18:28:30	0	0.00						
18:28:45	0	0.00						
18:29:00	Ö	0.00						
18:29:15	0	0.00						
18:29:30	0	0.00						
18:29:45	0	0.00						
18:30:00	0	0.00						
18:30:15	0	0.00						,
18:30:30	0	0.00						
18:30:45	0	0.00		_				
18:31:00	0	0.00						
18:31:15	0	0.00						
18:31:30	0	0.00						
18:31:45	0	0.00						
18:32:00	0	0.00						
18:32:15	0	0.00						
18:32:30	0	0.00						
18:32:45	0	0.00						
18:33:00	0	0.00						
18:33:15	15	0.63						
18:33:30	0	0.63						
18:33:45	0	0.63						
18:34:00	0	0.63			:			
18:34:15	0	0.63					<u> </u>	
18:34:30	20	1.46						
18:34:45	0	1.46						
18:35:00	0	1.46						
18:35:15	0	1.46		_				
18:35:30	30	2.71				_		
18:35:45	0	2.71						
18:36:00	0	2.71						
18:36:15	0	2.71						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1		· · · · · ·	TEST 2			TEST 3	
Time	VE	6-min	Time	VE	6-min	Time	VE	6-min
		Avg			Avg			Avg
18:36:30	0	2.71						
18:36:45	0	2.71						
18:37:00	0	2.71						
18:37:15	0	2.71						
18:37:30	0	2.71						
18:37:45	0	2.71						
18:38:00	0	2.71						
18:38:15	0	2.71						
18:38:30	0	2.71					_	
18:38:45	0	2.71						
18:39:00	0	2.71						
18:39:15	0	2.08						
18:39:30	0	2.08						
18:39:45	30	3.33						
18:40:00	0	3.33						
18:40:15	0	3.33		·				
18:40:30	0	2.50						
18:40:45	0	2.50						
18:41:00	0	2.50						
18:41:15	0	2.50						
18:41:30	0	1.25						
18:41:45	0	1.25						
18:42:00	0	1.25						
18:42:15	0	1.25		_				
18:42:30	0	1.25						
18:42:45	0	1.25						
18:43:00	0	1.25						
18:43:15	0	1.25						
18:43:30	0	1.25						
18:43:45	0	1.25						
18:44:00	0	1.25						
18:44:15	0	1.25						
18:44:30	0	1.25						
18:44:45	0	1.25						
18:45:00	0	1.25						
18:45:15	0	1.25						
18:45:30	25	2.29						

Table 2.5. Visible Emission Observation Summary, Baghouse Exhaust (continued)

	TEST 1			TEST 2		I	TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:45:45	5	1.25					1	
18:46:00	0	1.25						
18:46:15	0	1.25					_	
18:46:30	0	1.25	<u></u>		î			
18:46:45	0	1.25						
18:47:00	0	1.25						
18:47:15	0	1.25						
18:47:30	0	1.25						
18:47:45	0	1.25						
18:48:00	0	1.25						
18:48:15	0	1.25						
18:48:30	0	1.25						
18:48:45	. 0	1.25						
18:49:00	0	1.25						
18:49:15	0	1.25						
18:49:30	0	1.25						
18:49:45	0	1.25						
18:50:00	0	1.25						
18:50:15	0	1.25						
18:50:30	0	1.25						
18:50:45	0	1.25				_		
18:51:00	0	1.25						
18:51:15	0	1.25						
18:51:30	0	0.21						
18:51:45	0	0.00						
18:52:00	Ö	0.00						
18:52:15	0	0.00						
18:52:30	0	0.00						
18:52:45	0	0.00						
18:53:00	0	0.00						
18:53:15	0	0.00						
18:53:30	0	0.00						
18:53:45	0	0.00						
18:54:00	0	0.00						
18:54:15	0	0.00						
18:54:30	0	0.00						
18:54:45	0	0.00						

	TEST 1			TEST 2			TEST 3	
Time	VE	6-min Avg	Time	VE	6-min Avg	Time	VE	6-min Avg
18:55:00	0	0.00						
18:55:15	0	0.00	_					
18:55:30	0	0.00		_				-
18:55:45	0	0.00						
18:56:00	0	0.00						
18:56:15	0	0.00						
18:56:30	0	0.00						
18:56:45	0	0.00						
18:57:00	0	0.00						
18:57:15	0	0.00						
18:57:30	0	0.00						
18:57:45	0	0.00						
18:58:00	0	0.00						
18:58:15	0	0.00						
18:58:30	0	0.00						
18:58:45	0	0.00						
18:59:00	Too dark	k for VE's						

#### SAMPLING AND ANALYTICAL PROCEDURES

The sampling and analytical procedures used in this test program conform to EPA Reference Methods 1-4, 5D, and 9, as published in the Federal Register.

#### LOCATION OF MEASUREMENT SITES

EPA Method 1, "Sample Velocity Traverses for Stationary Sources," was used to select representative measurement sites. Sample locations are shown in Section 4.

#### STACK GAS VOLUMETRIC FLOW RATE

EPA Method 2, "Determination of Stack Gas Velocity and Volumetric Flow Rates," was used at each location to determine stack gas volumetric flow rates. Standard and Type "S" pitot tubes, meeting the EPA specifications, and an inclined manometer were used to measure velocity pressures. A calibrated Type "K" thermocouple, attached directly to the pitot tube, was used to measure stack gas temperature. The stack gas velocity was 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 3A, "Gas Analysis for the Determination of Dry Molecular Weight," was used to determine stack gas dry molecular weight. Bag samples were collected and analyzed for each measurement run using Orsat combustion analyzers.

#### STACK GAS MOISTURE CONTENT

EPA Reference Method 4, "Determination of Moisture Content in Stack Gases," was used to determine outlet stack gas moisture content. This method was conducted as

part of each total particulate matter measurement run. The initial and final contents of all impingers are determined gravimetrically.

#### PARTICULATE MATTER

EPA Reference Method 5D, "Determination of Particulate Matter Emissions from Positive Pressure Fabric Filter Baghouses," was used to determine the total particulate matter concentration and mass emission rates. The sample train consisted of a stainless steel 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 was withdrawn isokinetically and collected on the filter. Thermocouples were used to monitor temperatures of the stack gas and impinger exit gas. A schematic of the sample train is shown in Figure 3.1.

#### 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 melt shop roof monitor. Observations were conducted simultaneously with the particulate sampling runs.

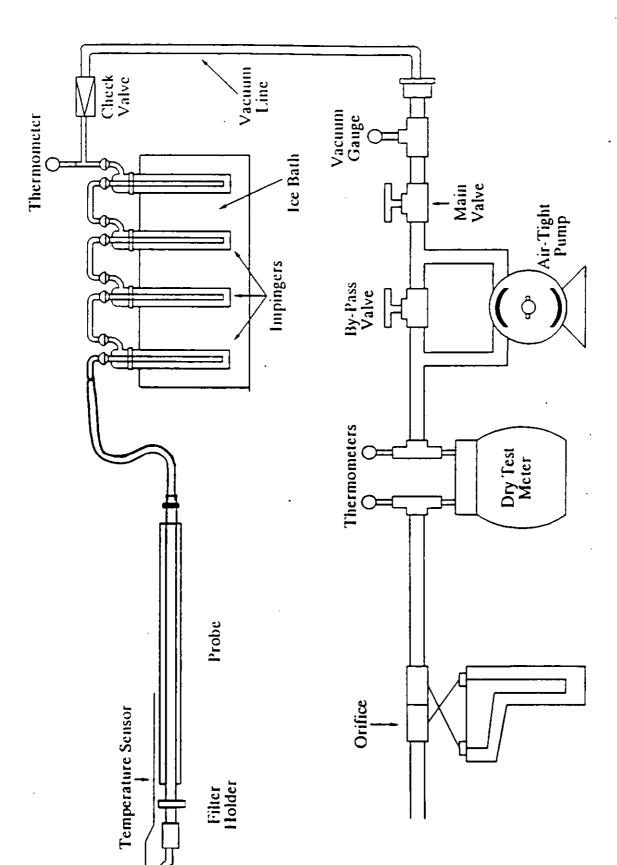


Figure 3.1. Schematic of EPA Method 5 Sampling Train - Baghouse Outlet

#### PROCESS DESCRIPTION/SAMPLING LOCATIONS

Kentucky Electric Steel, Inc. owns and operates and electric arc furnace (EAF) melt shop and bar steel rolling facility located on U.S. Route 60 approximately 12 miles west of Ashland, Kentucky.

Kentucky Electric Steel, Inc. has two EAFs for steel production. Scrap steel is delivered by rail and truck and is stored in open piles. Scrap steel and various fluxing agents are weighed and charged to the EAF. The charge material is melted by electrical current flowing among three graphite electrodes lowered into the furnace. Slag (melt impurities) is separated from the product metal and is transferred to slag storage and processing using an endloader. Molten metal is tapped from the EAF into preheated transfer ladles by tilting the furnace, allowing the metal to flow through a hole in the side.

Molten metal is then transferred to the ladle metallurgy furnace (LMF). Raw materials (bulk alloys and fluxes) are added to the molten metal in the LMF to further purify it. The metal is heated during refining using electrodes. After metal treatment is complete, the transfer ladle is removed from the LMF and carried to the continuous casting machine.

At the continuous caster, molten metal is poured into a preheated tundish and then flows into molds and is allowed to partially cool. The strips of metal are cut into pieces at the caster to form billets. Cooled billets are later reheated in a reheat furnace and rolled to the desired dimensions. The bar steel is descaled using water sprays and the ends of the bars are sheared off. The final product is bound into bundles and stored until shipped offsite.

Emissions from the EAFs and LMF are vented to the Harsell Positive Pressure Baghouse. A general process flow diagram is provided in Figure 4-1.

Throughout the test program the following process data was collected:

- A) Charge weights and materials and tap weights and materials (these are provided on the heat sheets in Appendix C).
- B) Heat times, including start and stop times, log off process operation including periods of no operation during testing (These are

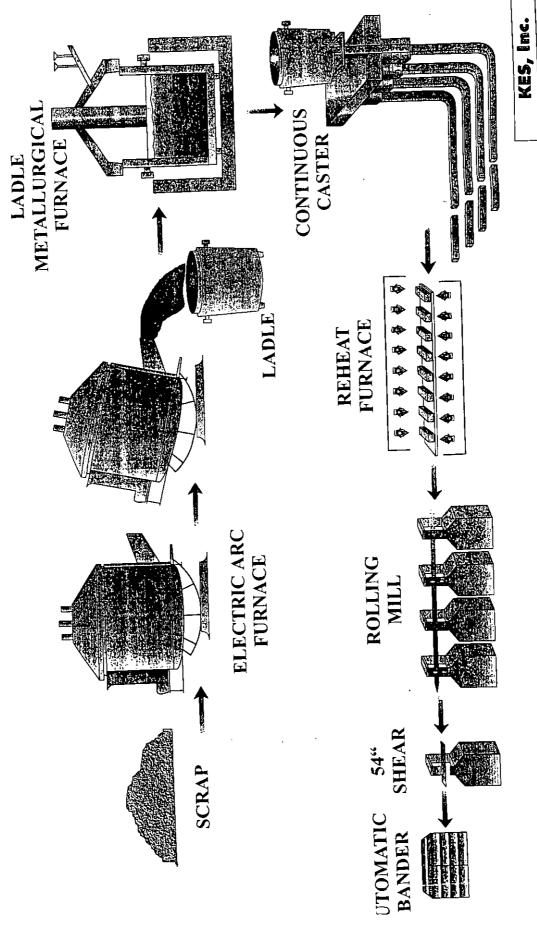


Figure 4.1. Process Flow Diagram

Process Flow Diagram:
Plant Process Flow
Drawing No: 0
Revision: 0
Date: 1/9/98

4-2

provided on the heat sheets and production field data in Appendices C and B respectively.)

- C) Pressure Drop across the baghouse. (Shown in Table 2.3 and in Appendix B) A visual inspection of the baghouse was made prior to testing.
- D) Fan/duct damper position (shown in Table 4.1).
- E) Fan amperes (shown in Table 4.2).

Fan and damper data was monitored continuously electronically and manually every 15 minutés. Ranges of the data are provided in Table 4.1. The fan amperes are summarized in Table 4.2.

TABLE 4.1. DAMPER POSITIONS (PERCENT OPEN DURING ACTIVITY)

Damper	Melting A&B	Charging A Melting B	Charging B Melting A	Tapping A Melting B	Tapping B Melting A	Charging A Charging B
West Blower	100	100	100	100	100	100
East Blower	100	100	100	100	100	100
A Furnace Plenum	0-100	0	0	0	0	0
B Furnace Plenum	0-100	0-100	0	0	0	0
A Water Cooled	100	100	100	0	100	0-100
B Water Cooled	100	100	0	100	0	0-100
Furnace Blower Inlet	100	99-100	100	100	100	62-78
Furnace Blower Outlet	100	99-100	100	100	100	62-79

TABL	E 4.2. CON	TROL SYS	TEM FAN	AMPER	RES DUR	ING PE	RFOR	MANCE
DATE	тіме	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
TEST 1	_						•	
5/11/00	1:50:00 pm	5.18	105.61	191.26	182.86	110.83	484.95	Charge
5/11/00	1:55:00 pm	5.25	107.18	192.25	183.88	102.22	478.36	Charge
5/11/00	2:00:00 pm	5.34	106.86	192.88	184.60	108.64	486.13	Charge
5/11/00	2:05:00 pm	5.42	109.05	192.61	184.13	109.03	485.78	Charge
5/11/00	2:10:00 pm	5.55	108.11	192.77	184.45	114.93	492.15	Charge
5/11/00	2:15:00 pm	5.57	110.93	190.26	182.00	110.00	482.25	Charge
5/11/00	2:20:00 pm	5.56	113.74	187.18	178.96	98.54	464.68	Charge
5/11/00	2:25:00 pm	5.68	118.74	189.67	181.19	102.56	473.41	Charge
5/11/00	2:30:00 pm	5.72	118.11	189.57	181.30	100.84	471.72	Charge
5/11/00	2:35:00 pm	5.98	116.55	189.80	181.28	103.36	474.44	Charge
5/11/00	2:40:00 pm	5.79	123.74	186.04	177.65	95.06	458.75	Тар
5/11/00	2:45:00 pm	5.95	122.18	188.28	179.99	103.20	471.47	Charge
5/11/00	2:50:00 pm	5.72	125.92	186.09	177.62	107.68	471.39	Charge
5/11/00	2:55:00 pm	5.58	130.92	186.23	177.87	113.44	477.54	Charge
5/11/00	3:00:00 pm	5.58	131.24	186.85	178.80	100.66	466.32	Melt
5/11/00	3:05:00 pm	5.53	121.24	188.97	181.03	104.24	474.25	Melt
5/11/00	3:10:00 pm	5.67	120.30	188.85	180.85	104.44	474.14	Тар
5/11/00	3:15:00 pm	5.40	124.99	187.43	179.53	100.01	466.98	Tap
5/11/00	3:20:00 pm	5.11	129.67	187.82	179.80	101.75	469.37	Charge
5/11/00	3:25:00 pm	5.23	128.74	186.99	179.28	115.40	481.67	Charge
5/11/00	3:30:00 pm	5.25	129.05	188.68	180.67	119.89	489.23	Charge
5/11/00	3:35:00 pm	5.19	131.55	188.67	180.68	119.47	488.82	Charge
5/11/00	3:40:00 pm	5.27	128.42	187.31	179.55	117.74	484.61	Charge
5/11/00	3:45:00 pm	5.31	129.05	185.60	177.84	117.19	480.63	Melt
5/11/00	3:50:00 pm	5.37	127.49	185.26	177.81	106.01	469.08	Melt
5/11/00	3:55:00 pm	5.47	121.86	188.41	180.55	111.56	480.52	Melt
5/11/00	4:00:00 pm	5.40	121.86	186.83	178.71	106.62	472.17	Melt
5/11/00	4:05:00 pm	5.60	139.99	185.83	177.70	102.44	465.97	Melt
5/11/00	4:10:00 pm	5.71	126.86	186.80	178.58	104.67	470.04	Melt
5/11/00	4:15:00 pm	5.80	124.99	187.43	179.26	106.16	472.85	Melt
5/11/00	4:20:00 pm	5.90	123.74	186.24	177.98	102.40	466.63	Charge
5/11/00	4:25:00 pm	5.81	133.11	185.66	177.22	98.16	461.04	Charge
5/11/00	4:30:00 pm	5.74	141.55	186.16	178.07	96.92	461.15	Melt
5/11/00	4:35:00 pm	6.06	127.49	187.27	178.92	106.01	472.20	Melt
5/11/00	4:40:00 pm	5.99	123.74	185.43	177.31	104.76	467.49	Melt
5/11/00	4:45:00 pm	5.98	122.49	185.59	177.50	103.66	466.75	Тар

DATE	тіме	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/11/00	4:50:00 pm	5.63	124.99	186.08	178.12	100.93	465.13	Charge
5/11/00	4:55:00 pm	5.63	135.30	185.14	176.86	107.49	469.48	Charge
5/11/00	5:00:00 pm	5.56	143.42	183.01	174.74	108.04	465.79	Charge
5/11/00	5:05:00 pm	5.66	144.67	182.62	174.43	106.29	463.35	Charge
5/11/00	5:10:00 pm	5.60	141.55	183.78	175.71	112.58	472.07	Charge
5/11/00	5:15:00 pm	5.47	_138.42	185.67	177.72	116.59	479.99	Charge
5/11/00	5:20:00 pm	5.45	129.05	187.51	179.48	119.62	486.60	Charge
5/11/00	5:25:00 pm	5.15	127.17	188.01	180.29	116.02	484.32	Melt
5/11/00	5:30:00 pm	5.16	122.18	188.71	181.27	107.98	477.96	Melt
5/11/00	5:35:00 pm	5.20	119.99	189.59	181.73	106.69	478.02	Melt
5/11/00	5:40:00 pm	5.26	119.05	190.03	182.18	108.86	481.08	Melt
5/11/00	5:45:00 pm	5.30	117.80	189.98	182.11	107.08	479.18	Charge
5/11/00	5:50:00 pm	5.33	120.61	190.06	181.90	116.29	488.25	Charge
5/11/00	5:55:00 pm	5.44	122.80	189.02	181.06	111.80	481.88	Melt
5/11/00	6:00:00 pm	5.42	134.05	186.34	178.07	107.04	471.44	Melt
5/11/00	6:05:00 pm	5.59	127.80	187.92	179.83	105.48	473.23	Melt
5/11/00	6:10:00 pm	5.61	123.74	186.67	178.55	103.74	468.95	Melt
5/11/00	6:15:00 pm	5.66	125.92	185.65	177.55	101.66	464.87	Melt
5/11/00	6:20:00 pm	5.75	142.17	183.17	174.96	91.86	449.98	Melt
5/11/00	6:25:00 pm	6.18	132.17	186.10	177.77	104.77	468.64	Melt
5/11/00	6:30:00 pm	5.94	128.42	185.77	177.51	104.12	467.41	Тар
5/11/00	6:35:00 pm	5.72	133.42	187.82	179.58	104.74	472.14	Тар
5/11/00	6:40:00 pm	5.62	130.61	188.37	180.10	109.18	477.66	Melt
5/11/00	6:45:00 pm	5.51	132.17	187.76	179.55	117.02	484.34	Charge
5/11/00	6:50:00 pm	5.56	133.11	186.92	178.73	119.72	485.37	Charge
5/11/00	6:55:00 pm	5.18	138.11	186.96	178.97	118.18	484.11	Melt
5/11/00	7:00:00 pm	5.13	127.80	191.11	183.23	116.67	491.01	Melt
5/11/00	7:05:00 pm	3.57	119.68	191.09	183.28	118.52	492.89	Melt
5/11/00	7:10:00 pm	5.11	116.24	191.10	183.28	118.67	493.05	Melt
5/11/00	7:15:00 pm	5.22	118.43	187.44	179.67	112.43	479.55	Melt
5/11/00	7:20:00 pm	5.30	120.93	188.02	180.29	108.55	476.87	Melt
5/11/00	7:25:00 pm	5.40	120.30	188.79	180.98	109.84	479.61	Melt
5/11/00	7:30:00 pm	5.46	118.43	189.95	182.06	114.58	486.58	Tap
5/11/00	7:35:00 pm	5.41	120.61	189.14	181.04	118.52	488.71	Melt
				Ampere Ra			) - 493.1	
TEST 2								
5/12/00	7:15:00 am	6.01	122.49	184.39	176.08	108.11	468.58	Melt

TADL	E 4.2. CON	1102010		r		<del></del>		1
DATE	ТІМЕ	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/12/00	7:20:00 am	5.93	123.43	182.48	174.69	102.06	459.23	Melt
5/12/00	7:25:00 am	5.93	127.17	183.56	175.60	102.78	461.95	Melt
5/12/00	7:30:00 am	5.83	125.92	184.12	176.12	104.52	464.76	Melt
5/12/00	7:35:00 am	5.75	126.55	184.77	176.59	103.55	464.91	Тар
5/12/00	7:40:00 am	5.51	129.36	182.62	174.52	107.87	465.00	Charge
5/12/00	7:45:00 am	5.56	137.80	182.80	174.61	111.13	468.54	Charge
5/12/00	7:50:00 am	5.54	145.92	180.58	172.27	113.15	466.00	Charge
5/12/00	7:55:00 am	5.64	145.92	182.07	173.82	109.02	464.91	Charge
5/12/00	8:00:00 am	5.54	142.17	182.68	174.65	107.36	464.69	Melt
5/12/00	8:05:00 am	5.42	135.30	183.34	175.59	101.44	460.37	Melt
5/12/00	8:10:00 am	5.49	134.05	184.70	176.75	100.91	462.36	Melt
5/12/00	8:15:00 am	5.51	131.24	187.42	179.35	104.49	471.26	Melt
5/12/00	8:20:00 am	5.60	130.92	188.65	180.68	101.73	471.06	Melt
5/12/00	8:25:00 am	5.41	129.67	186.62	178.78	101.53	466.93	Melt
5/12/00	8:30:00 am	5.34	127.80	187.04	179.26	103.55	469.85	Charge
5/12/00	8:35:00 am	5.17	133.74	185.84	177.98	103.54	467.36	Charge
5/12/00	8:40:00 am	5.05	139.36	183.50	175.98	90.88	450.35	Melt
5/12/00	8:45:00 am	5.22	133.11	185.59	177.92	99.66	463.16	Тар
5/12/00	8:50:00 am	5.30	129.36	186.58	178.60	110.92	476.11	Тар
5/12/00	8:55:00 am	5.30	133.74	185.07	177.01	108.79	470.87	Charge
5/12/00	9:00:00 am	5.34	142.49	183.30	175.17	112.74	471.22	Charge
5/12/00	9:05:00 am	5.44	138.11	184.50	176.44	106.16	467.09	Melt
5/12/00	9:10:00 am	5.45	138.11	183.98	175.96	89.91	449.84	Melt
5/12/00	9:15:00 am	5.56	143.74	184.61	176.58	88.04	449.23	Melt
5/12/00	9:20:00 am	5.65	149.36	183.85	175.71	88.16	447.72	Melt
5/12/00	9:25:00 am	5.75	154.36	181.69	173.52	83.69	438.90	Melt
5/12/00	9:30:00 am	5.94	158.73	181.59	173.28	82.96	437.83	Melt
5/12/00	9:35:00 am	5.85	158.42	180.08	171.74	85.14	436.96	Charge
5/12/00	9:40:00 am	5.71	173.42	178.99	170.68	82.48	432.15	Melt
5/12/00	9:45:00 am	5.55	179.04	178.82	170.69	81.55	431.06	Charge
5/12/00	9:50:00 am	5.58	179.67	179.32	171.17	84.21	434.69	Melt
5/12/00	9:55:00 am	5.68	173.42	180.81	172.64	85.84	439.28	Тар
5/12/00	10:00:00 am	5.93	159.36	180.85	172.58	89.26	442.68	Tap
5/12/00	10:05:00 am	6.15	150.61	181.85	173.61	94.68	450.13	Charge
5/12/00	10:10:00 am	5.80	152.48	178.76	170.50	98.88	448.14	Charge
5/12/00	10:15:00 am	5.67	161.86	179.92	171.75	99.68	451.35	Melt
5/12/00	10:20:00 am	5.66	147.17	182.66	174.85	94.22	451.73	Melt

TABL	TABLE 4.2. CONTROL SYSTEM FAN AMPERES DURING PERFORMANCE									
DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity		
5/12/00	10:25:00 am	5.62	139.05	184.06	176.18	98.75	458.99	Melt		
5/12/00	10:30:00 am	5.70	137.80	183.37	175.34	100.02	458.72	Melt		
5/12/00	10:35:00 am	5.58	142.49	182.80	174.83	105.90	463.54	Тар		
5/12/00	10:40:00 am	5.53	142.17	184.73	176.54	112.82	474.09	Charge		
5/12/00	10:45:00 am	5.54	140.92	185.22	177.00	117.72	479.94	Charge		
5/12/00	10:50:00 am	5.54	138.11	185.74	177.76	118.92	482.42	Charge		
5/12/00	10:55:00 am	5.37	134.99	185.01	177.23	118.87	481.11	Charge		
5/12/00	11:00:00 am	4.10	139.36	184.16	176.62	116.86	477.63	Charge		
5/12/00	11:05:00 am	4.96	136.86	182.18	174.61	112.10	468.89	Charge		
5/12/00	11:10:00 am	5.01	147.17	181.42	173.99	88.53	443.94	Melt		
5/12/00	11:15:00 am	5.25	143.11	183.39	175.88	97.84	457.11	Melt		
5/12/00	11:20:00 am	5.31	141.24	184.73	176.81	91.53	453.07	Melt		
				Ampere Ra	ange Test 3	431.	1 - 482.4			
TEST 3			-							
5/12/00	12:15:00 pm	5.75	141.86	182.26	174.32	96.45	453.03	Melt		
5/12/00	12:20:00 pm	5.58	140.61	181.30	173.39	94.98	449.68	Melt		
5/12/00	12:25:00 pm	5.67	145.92	181.37	173.17	94.76	449.29	Melt		
5/12/00	12:30:00 pm	5.69	138.74	182.55	174.60	102.35	459.50	Melt		
5/12/00	12:35:00 pm	5.69	146.55	179.73	171.72	92.39	443.84	Charge		
5/12/00	12:40:00 pm	5.41	154.05	179.63	171.59	91.08	442.31	Melt		
5/12/00	12:45:00 pm	5.38	156.23	178.94	170.99	87.19	437.13	Melt		
5/12/00	12:50:00 pm	5.55	149.05	181.39	173.38	105.59	460.36	Tap		
5/12/00	12:55:00 pm	5.47	150.30	180.21	172.03	105.26	457.49	Charge		
5/12/00	1:00:00 pm	5.37	167.48	177.73	169.61	103.05	450.39	Charge		
5/12/00	1:05:00 pm	5.31	149.67	181.85	174.09	93.37	449.31	Melt		
5/12/00	1:10:00 pm	5.38	142.49	182.55	174.92	97.73	455.20	Melt		
5/12/00	1:15:00 pm	5.44	143.11	183.52	175.58	98.84	457.94	Melt		
5/12/00	1:20:00 pm	5.48	142.80	179.21	171.04	92.13	442.38	Melt		
5/12/00	1:25:00 pm	5.53	143.42	181.98	173.89	94.20	450.07	Тар		
5/12/00	1:30:00 pm	5.60	142.80	185.83	177.74	105.50	469.07	Тар		
5/12/00	1:35:00 pm	5.58	144.05	184.46	176.18	114.02	474.67	Charge		
5/12/00	1:40:00 pm	5.60	152.17	179.87	171.87	112.09	463.83	Charge		
5/12/00	1:45:00 pm	5.65	155.92	180.41	172.08	108.83	461.32	Charge		
5/12/00	1:50:00 pm	5.73	156.86	182.60	174.23	120.38	477.21	Charge		
5/12/00	1:55:00 pm	5.72	150.61	182.46	174.34	118.11	474.91	Charge		
5/12/00	2:00:00 pm	5.76	151.23	181.12	172.91	105.79	459.82	Charge		
/12/00	2:05:00 pm	6.10	150.30	180.47	172.16	106.30	458.93	Charge		

DATE	TIME	Baghouse Pressure	Baghouse Temp, F	East Blower Amp	West Blower Amp	4th Port Blower Amp	Total Amp	Activity
5/12/00	2:10:00 pm	5.94	152.17	180.64	172.20	109.75	462.59	Charge
5/12/00	2:15:00 pm	5.88	155.92	179.96	171.57	105.78	457.31	Charge
5/12/00	2:20:00 pm	5.58	167.48	177.04	168.82	86.96	432.81	Melt
5/12/00	2:25:00 pm	5.78	159.05	179.85	171.82	85.72	437.38	Melt
5/12/00	2:30:00 pm	5.66	152.17	181.16	173.02	90.60	444.78	Melt
5/12/00	2:35:00 pm	5.55	150.30	181.06	172.99	89.98	444.03	Тар
5/12/00	2:40:00 pm	5.59	149.36	181.21	173.07	91.86	446.14	Тар
5/12/00	2:45:00 pm	5.65	148.74	180.42	172.33	99.97	452.72	Charge
5/12/00	2:50:00 pm	5.70	161.23	178.84	170.48	104.23	453.55	Charge
5/12/00	2:55:00 pm	5.52	163.11	179.57	171.24	104.59	455.41	Charge
5/12/00	3:00:00 pm	5.49	157.48	180.41	171.99	107.59	459.99	Charge
5/12/00	3:05:00 pm	5.28	161.86	180.53	172.55	103.84	456.93	Melt
5/12/00	3:10:00 pm	5.34	148.42	182.78	174.95	98.14	455.88	Melt
5/12/00	3:15:00 pm	5.43	144.05	182.86	175.06	101.12	459.04	Melt
5/12/00	3:20:00 pm	5.39	149.36	180.02	172.17	91.81	444.00	Melt
5/12/00	3:25:00 pm	5.46	155.61	178.57	170.81	85.76	435.14	Melt
5/12/00	3:30:00 pm	5.59	159.98	179.49	171.56	87.08	438.13	Melt
5/12/00	3:35:00 pm	5.77	149.05	180.78	172.95	97.74	451.47	Melt
5/12/00	3:40:00 pm	5.75	147.80	179.93	171.93	93.32	445.18	Charge
5/12/00	3:45:00 pm	6.02	151.23	178.71	170.62	97.24	446.56	Тар
5/12/00	3:50:00 pm	6.03	148.74	179.11	170.79	89.64	439.54	Charge
5/12/00	3:55:00 pm	5.69	152.17	178.54	170.27	92.06	440.87	Charge
5/12/00	4:00:00 pm	5.71	163.11	177.17	168.79	101.94	447.89	Charge
5/12/00	4:05:00 pm	5.80	155.61	180.95	172.68	114.82	468.45	Charge
5/12/00	4:10:00 pm	5.71	150.61	178.69	170.47	107.68	456.83	Charge
5/12/00	4:15:00 pm	5.72	167.80	177.92	169.57	108.94	456.43	Charge
5/12/00	4:20:00 pm	3.34	162.17	178.96	170.58	98.81	448.35	Charge

#### **SAMPLING LOCATIONS**

The baghouse inlet sampling location was in a section of rectangular duct approximately 193 inches downstream of a bend and 165 inches upstream of a reduction in duct size. The duct dimensions were 131.5 inches by 144 inches. Six ports on the top of the duct were sampled with a total of 48 sampling points, eight per port. Figure 5.1 is a schematic of the baghouse inlet sampling location.

Figure 5.2 is a schematic of the baghouse outlet compartments sampled for the particulate emissions. A sampling matrix of four by two points, eight points per compartment, was used for sampling purposes.

A total of 32 points within four compartments was sampled at a minimum during each test run. Of the twenty compartments present, a total of 13 compartments were sampled during the course of the sampling program.

#### STACK TEST REVIEW

NAME Lay Electric Stiel	TEST NO.
SOURCE TYPE HOMEL For Lord region Broken	KUN NO. Prelin 3/3 pans; one 900 any time of
MODEL OR NAME	DATE OF TEST 5-10, 7000 15:15
TEST PERFORMED BY	EQ/PES.
T <sub>s</sub> , Stack temperature  P <sub>s</sub> , Stack pressure  T <sub>m</sub> , Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  O <sub>F</sub> O <sub>F</sub> in. H <sub>s</sub> o <sub>F</sub> in. H <sub>s</sub> o <sub>F</sub>	Vne, Volume of sample
(meter conditions)	Velocity 49,55 fps  (35, 19,711. 720 DSCF/1)
CO <sub>2</sub>	Isokinetic Ratio  gr/scf @ 12% CO2  Lb/Hr  Lb/mm BTU
Weight of collectedgm pollutant CO2, Waste only %	REQUESTED BY  REVIEWED BY  DATE
A <sub>s</sub> , Area of stack $D = ft  D2  \pi \qquad 131.5  ft$ $10''15' \times D'  4$	RECOMMENDATION
Boiler Heat Capacity wmBTU/Hr.	
REMARKS	$\bar{V} = \frac{Q_1}{A_0} \cdot \frac{T_0}{T_1}$

## STACK TEST REVIEW

NAME by Electric State	TEST NO.
SOURCE TYPE HOUSEll Freduit 1000 Brilian	RUN NO. J. Cima
MODEL OR NAME	DATE OF TEST $5-10$ , $7000$
TEST PERFORMED BY	EQ/PES
DATA REQUIRED	RESULTS
T <sub>S</sub> , Stack temperature  P <sub>S</sub> , Stack pressure  T <sub>m</sub> , Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  VDGM, Volume of sample  (meter conditions)	V <sub>ne</sub> , Volume of sample
CO <sub>2</sub>	Isokinetic Ratio gr/scf @ 12% CO <sub>2</sub>
ΔP, Velocity head 1.72648 in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. 0.84	Lb/Hr Lb/mm BTU
min x 60  0, Sampling time sec.  An, area of nozzle D= $\frac{1}{2}$ ft <sup>2</sup>	
Weight of collectedgm pollutant CO2, Waste only%	REQUESTED BY
A <sub>s</sub> , Area of stack $D = \text{ft}  D2  \pi \qquad 131.5  \text{ft}$ $10 \text{ Hz} \times D  4  \text{ft}$	RECOMMENDATION_
Boiler Heat Capacity mmBTU/Hr.	

REMARKS

# STACK TEST REVIEW

NAME on Electric Stiel T	EST NO.
SOURCE TYPE HOUSER POR LOUIS REALING R	EST NO
MODEL OR NAME D	ATE OF TEST $5-12,2000$ $17^{20}$
TEST PERFORMED BY	EQ/PES
DATA REQUIRED	RESULTS
T <sub>s</sub> , Stack temperature  P <sub>s</sub> , Stack pressure  T <sub>m</sub> . Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)  (meter conditions)	VH20, Volume of watercf Bwo, Moisture of content // COLUME/ Vne, Volume of sample at stack condcf Mdry, Molecular wt dry
CO <sub>2</sub> % CO <sub>2</sub> % N <sub>2</sub> %	Isokinetic Ratio gr/scf @ 12% CO2
ΔP, Velocity head 1.74393 in. H <sub>2</sub> 0 (traverse points)  C <sub>p</sub> , Pitot tube coeff. 0.84	Lb/Hr  Lb/mm BTU
min x 60  0, Sampling time sec. $A_n$ , area of nozzle D= $\frac{1}{2}$ $ft^2$ $\frac{1}{2}$	
Weight of collectedgm pollutant CO2, Waste only %	REQUESTED BY
A <sub>s</sub> , Area of stack $D = ft  D2  \pi \qquad 131.5  ft$ $10'115'' \times D'  4$	RECOMMENDATION
Boiler Heat Capacity mmBTU/Hr.	

REMARKS

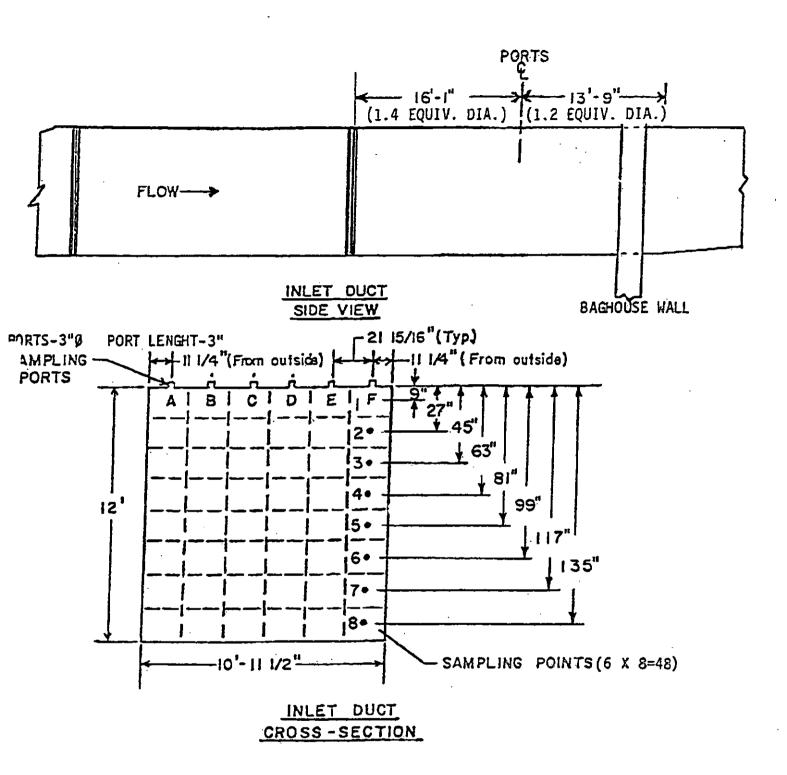
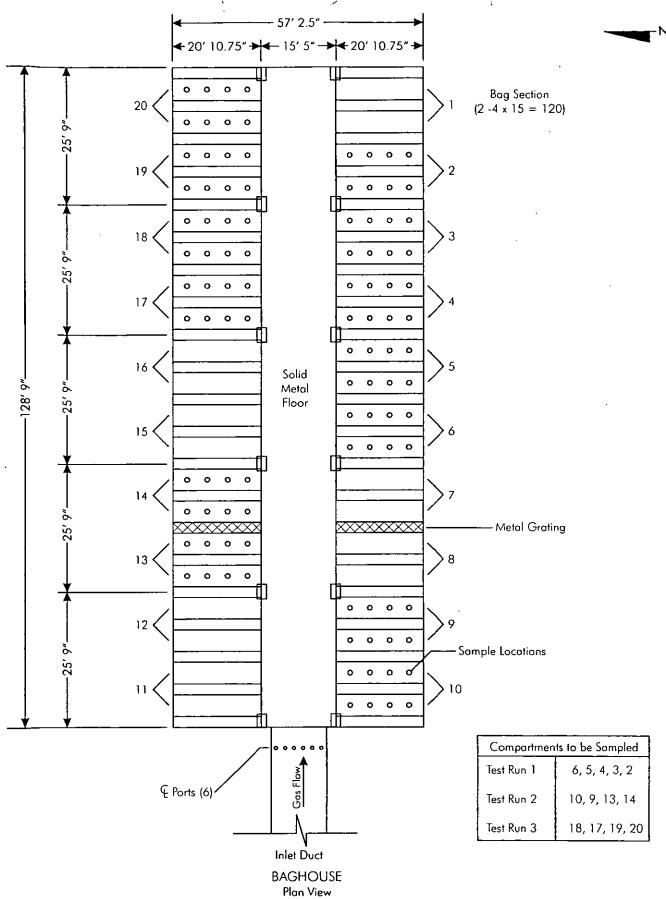


Figure 5.1. Baghouse Inlet Sampling Location



Baghouse Outlet Sampling Locations

Figure 5-2. Schematic of Baghouse Outlet

### QUALITY ASSURANCE AND QUALITY CONTROL

The field sampling quality assurance for this project included 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 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 III*, EPA-600/4-72-027B. Summarized in Table 5.1 are the stack gas sampling equipment calibrations which are performed in preparation for this project. The meter boxes are re-calibrated after the test.

Listed in Table 6.2 are the additional calibration checks which are performed on the sampling equipment onsite, just prior to the testing, to ensure that equipment was not damaged during transport.

TABLE 6.1
FIELD EQUIPMENT CALIBRATION SUMMARY\*

Equipment	Calibrated against	Allowable error
Method 5 meter box	Reference test meter	Y ±0.02 Y ▲H@ ±0.20 ▲H@ post-test Y ±0.05 Y
Pitot tube	Geometric specifications	See EPA Method 2
Thermocouple	ASTM-3F thermometer	±1.5%
Impinger (or condenser thermometer)	ASTM-3F	±2°F
Dry gas meter thermometer	ASTM-3F	±5°F
Probe nozzles	Caliper	±0.004 in.
Barometer	NBS traceable barometer	±0.1 in.Hg

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

TABLE 6.2
FIELD CHECKS OF SAMPLING EQUIPMENT

Equipment	Checked against	Allowable difference
Pitot tube	Inspection	No visible damage
Thermocouples	ASTM 2F or 3F	±1.5%
Probe nozzles	Caliper	±0,004 in.

# Appendix A Visible Emission Field Data

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DITIONAL INFORMATION

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Ashland	KY	41102	]  ,			├ <del>─</del>	۳	<del>                                     </del>	
PHONE (KEY CONTACT) Plant	SOURCE IO	MUMBER	1	- 9	_5	10	10	Chare A	
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			<b>~</b> }	— <del>''</del>				1161	
PROCESS EQUIPMENT		OPERATING MODE	] [ 5	a	0	Q	9	45/24=1.88%	ž
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CONTROL EQUIPMENT		OPERATING MODE	1	e	0	- 0			<u>-</u> -
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_ 60'	Start /0'		11 11	a	0	0	٥	15/24:01.26	
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Start QO' End		the End North	14,40	٥	<u> </u>	0			
	36117007	~ BU /VO/IN	1441	5	5	10	10	•	
DESCRIBE EMISSIONS			14						
	End 🗹		<b>⅃</b> ┡┈┪	<u> </u>	_5	5	0		
		ROPLET, PLUME	15	o	10	~	40		
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DESCRIBE PLUME BACKGROUND			<b>5   </b>		25	15	15	12.7= 11.04%	
	- 1		1446	15	20	20	20		
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Specie	SAT CONDIT	νπο 4	1447	_ ₹ø	15	_15	15		
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with C	OUI SKETCH	Draw North Arrow	24						
*lume		$\bigcap$	1233		_/0	_/5	20		
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1	MUT	Shop	29	0		$\neg$		65/24-2.71%	
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Kentucky Electric Ste	el, Inc.			5-11.	00		15.	25	1559	
U.S. 60 West - Coalto	on		SEC	•	15	30	45		COMMENTS	<del></del> '
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СПУ	STATE	ZP	- 2				•		13/	
Ashland	KY	41102	<u> </u>	- 0	-	٩	- 0	<del>                                     </del>		
PHONE (KEY CONTACT) Plant	SOURCE ID N	UMBER	7	0	<u> </u>	_5_	10	<del> </del>		
(606) 929-1320 Guard	103-034	0-0020	┚┞╌	10	5	5	<u> </u>	<u> </u>		í
PROCESS EQUIPMENT	4	OPERATING MODE	7   5	0	٥	ام	0			:
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Harsell Bashovas		On line	11 -		-	•		129-	1.6 1 %	
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·	<u> </u>		10	0	0	a				
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ian 85° End	WET BULB TEN	P RH, percent	22		0		0			-
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πγ	STATE	ZIP	1 2	40			20			
Ashland HONE (KEY CONTACT) Plant	KY SOURCE ID	41102	] 3	20	15					
606) 929-1320 Guard	1	40-0020	11				15			
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			21	0	9	10	20			
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sten 85° End V	NIA		22	-	ė	0	_0	044	<del></del>	
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Sun Location Line

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Environmental Quality Management

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Observer's Position

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COMPANY NAME	· •	SIBLE EMISSION				Ar T	_	No.	80	F 10
Kentucky Electric St	eel Inc		OBSE	PVATIO	-	<del> </del>	BTART	_	ENO TI	AE
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Ashland PHONE (KEY CONTACT) Plant	KY	41102	] ]					<del>                                     </del>	****	
(606) 929-1320 Guard	SOURCE ID NO			- 0	-	-0	<u> </u>	<del> </del>		<del></del>
PROCESS EQUIPMENT	103-034		┵┝┷	0	9	٥		<u> </u>		····
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Harsell Baghovse		Inline	25.5	0	0	٠	0			<del></del>
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Same				0	0	0	9			<del></del>
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Start Jame	End /		17	20	15	10		345/24	- 141 3	0 2
DESCRIBE PLUME BACKGROUND		<del> </del>	7   10					124	77.3	8 /
Stan See	End -		1246	_5	5	10	10			
Stan Same End	SKY CONDITION	letter Booken	1287	10		_15	_/5			
WIND SPEED	I WIND DIRECTIO	N	20	10	_5	5	5			
Start 1-5 End 1-10 MPK	Start South	End 5 &	21	_5	0	0	0		<del></del>	
AND CHI IEMP	WET BULB TEM	P RH, percent	22							
Sten 85° End -	NA	NA	23	악	0	0	10	2466		<del>:</del>
Stack SOURCE LAY	OUT SKETCH	Draw North Arrow	] <del>                                     </del>	20	35	30	25	245/24	= 10.21	<u>//</u>
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No. 9 of 10

COMPANY NAME			OBSE	NOTTAVE	DATE	-	START	TIME	END TIME
Kentucky Electric Ste	el, Inc.		J.	- 11 -	00		17	59	
LIREET ADDRESS			SEC.				45		
U.S. 60 West - Coalto	n				15	8	40		COMMENTS
			1259			•	,	11.15	./
CITY	-					٥		MATS	290
	STATE	250	2	0	10	10			
Ashland HONE (KEY CONTACT) Plant	KY	41102	3	مح	.5	0	_0		
Kenel and land	SOURCE ID								
	103-03				9	0	/0	244	
POCESS EQUIPMENT		OPERATING MODE	5_	_20	20	20	15	175/24	= 7.29%
Melt Shop		Charge/Melt/Tap	1804	15	15	, 4			
CONTROL EQUIPMENT		OPERATING MODE				15			
Harsell Baghover		Online	1805			5			· · · · · · · · · · · · · · · · · · ·
ESCRIBE EMISSION POINT				_5	9	ام		i	
Middle of Metro	Chop		0						
	-			- 0	_5	5	10		
	·		10	10	10	<u>.5</u>	_3		
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO OBSERVER	11	5	5		0	135/20-	= 5.43%
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STANCE FROM OBSERVER			1812	_ 0	15	/5	10		
	1 DER Nort	the End North	1811	10	15	15	_15	_ <del>_</del>	•
DESCRIBE EMISSIONS			14						<del></del>
IMM Cofen	End		<u> </u>	20	20	15	<u> 15</u>		<del></del>
		ROPLET PLUME	15	15	_10	10	15		
SIBIT WATER END OF THE PLUME AT WHICH OPACE	Aseched [1	M/A Detached D	16	15	15				
				<u> </u>		10	10	2201	
sien Same	End		17	10	10	3	<u>5</u>	/24	= 11.25%
DESCRIBE PLUME BACKGROUND			1396	3	5	5	0		
ABRI TILLS ACKGROUND COLOR	End								
	SKY CONDIT		1892	_0		0	<u> </u>		
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Stack SOURCE LAY	OUT SKETCH	Draw North Arrow			0	9		کار	
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×_	XX		<b> </b>	_ 0	_ 0	0	· 0		
	K Emission (	Point	27	٥	0	o	0		·
<b>©</b>	$\boldsymbol{\mathscr{B}}$		28					<del></del>	
		-Shop	<del>     </del>	- 0	- 0	<del>- </del>	0		
	,,,,,,,		29	_ 0	Ω		0	0	
	56	<u> </u>	1332	* 0	0	0	0		- <u></u>
	ا عر			WER'S A					
·							. /	0	
	Observer's I	Position	ORRES	<u> </u>	IGNATE I	<u> </u>	ins		DATE
							1		5-11-00
1	10		ORGA	HZATION	- On	nim	<u>^(</u>		2 41-00
Sun Loca	tion Line	>					litv	Manageme	ent
				FED BY		<u>`</u>	<u> </u>		DATE
*DOITIONAL INFORMATION			ETA	\		_			3-22-00
ST Holper-	<del></del>								
-			I COUR	MITTER OF	VEN E	<b>NO44 N#</b> =	-		

Privileged (		iential - Prepare ISIBLE EMISSION (					ægai (		10
	<u> </u>	WICE EMISSION				·•	START		NO TIME
COMPANY NAME Kentucky Electric Sto	el. Inc.		11	VATION			130		1859
STREET ADDRESS	,		346	0		30	46		<del></del>
U.S. 60 West - Coalto	on	. <u></u>	<u>    121     1</u>		18		-		LIMENTS
			1239	٥	0	10	15	Tap A	Multsh
CITY	STATE	23P	2	15	10	10	5		
Ashland	KY	41102	,		7	5	5	-	
PHONE (KEY CONTACT) Plant	SOURCE ID N				- 2				<del></del>
(606) 929-1320 Guard	103-034		<u> </u>		10	10	15	2501	
PROCESS EQUIPMENT	4	OPERATING MODE	]	25	20	15	15	133/24= 1	0.43%
Melt Shop CONTROL EQUIPMENT		Charge/Melt/Tap	1834	10	10	15	20		
Harsell Banhovse		Online	1835	25	25	20	25		
DESCRIBE EMISSION POINT			1 0	15		5	5		
West and of Mels	These .					5			
			<del>                                   </del>		5	<u> </u>	0		
HEIGHT ABOVE GROUND LEVEL	HEIGHT RELA	TIVE TO OBSERVER	10	0		e		4 9 0 4	
_60'	Start 10'	End -	11	0	0	_ 0	ا م	135/24= 5	. 63%
DISTANCE FROM OBSERVER	DIRECTION FI	ROM OBSERVER	1330	0	0	0	_0		
Stant/00 End	Sen Norg	L End North	1831	9		0	0		•
DESCRIBE EMISSIONS	. /		14						
SIER LOFFING EMISSION COLOR	End V	OPLET PLUME	15	0		٥			
Start Livery End	Attached (1	N/A Detached D	11	٥	_ 0				
POINT IN THE PLUME AT WHICH OPA	TTY WAS DETER		16	Q	و	್ದಿ	ام		
Start Same	End		] 17	9	0	٥	٥	0	
DESCRIBE PLUME BACKGROUND			1846	0	۵	Q	o		
Stan Traces  BACKGROUND COLOR	End SKY CONDITION	ONS	1347	0	0	0	9		
Sun Green End	Start Brok.	=	20						
MIND SPEED	WIND DIRECT	TON	<b>1</b> ├──┤	0	- 0	10			
SIER / / O AFFERD	WET BULB TE	End Course	21	10	:10	_5	5	<b></b>	
Stan 80° End	WEI BULB IE		22	5	0	Q	_5		
		·	23	_5	10	10	5	105/24 4	1.382
SOURCE L	LYOUT SKETCH	Draw North Arrow	1852	ح.	5	Q	. 0		
Sun 💠		$(\frac{1}{2})$	18.3						
Wnd -			18.63 26	<u>a</u>					
, <u>X</u>	<del></del> -		<del>┃┡──┤</del>	0	0	_0	· 0		
χ	X Emission P	oini_	27	0		۵	_0		
	[B]		28	0		Q	0		
•	MUT	Shop	29	0	٥	۵	0		·
	-		130,8	0	0	0			
	1 5	`	1 <del></del>		WME (PF				
	Observer's P	ned-no					ido	l	
_/		vai(NI)	OBSE	IVER'S	<b>SIGNATU</b>	RE			ATE
	140'	_		24-	Sec.	15	2	<u></u>	5-11-00
Sun La	ation Line	>		TOU		/ 1 Oua	litv	Management	
ADDITIONAL INFORMATION	- Company		<i>-</i>	ED BY		~~~			ATE
LST Holper-			ETA						3-22-a
<del></del>		<del></del>	1	us ren n	N VEN E	<b>ADA 1 A</b>			111

_			_								•		
COMPANY NAME		,			OBSE	RVATION	,	;	START			TIME	7
	Electric Stee	el, Inc.			5	12/	<u>00</u>	,	0	715		121	
STREET ADDRES					SEC	0	15	30	45		COMM	ENTS	
U.S. 60 T	West - Coalton	n			14024	7.0		7.0	3/			_	
·					<u>                                     </u>	35	40	35	35				
CITY		STATE		ZP	2	30	30	30	25				
Ashland		KY		41102	3	25	20	20	15				·
PHONE (KEY CO	1,20110	SOURCE ID		-		15	10	20	25	•			601
(606) 929-	1320 Guard	103-03			<b> </b>	<del></del>	<del></del>		-				<b>—</b> į
PROCESS EQUIP				ATING MODE	5	Zo	5	5	5		<del></del>		
Melt Shop				Line	6	5	5	0	0	augt	<sup>55</sup> /24:	= 18	.96
CONTROL EQUIP				Line	7	0	30	30	40				3
			1 0.	101110	<u> </u>	<del>                                     </del>			<del>                                     </del>				
DESCRIBE EMISS	Exhaust Roof	- 11	4	EASTFUR	-	35	25	20	20	<u> </u>			
		·	27(	LIB! END	9	10	0	0	0				<u>.</u>
OFB	vilding	•			10	10	101	10	10	endl	Cheese.	4	٠.
HEIGHT ABOVE	GROUND LEVEL			TO OBSERVER	11	<del>                                     </del>	· · · · ·				- )		—
60	) *	Start L		End V	11-	10	0	0	0		115/		
DISTANCE FROM		DIRECTION		OBSERVER End North	12	0	0	0	15	any	21924	12//	.46.
Star (000)		San /VCT	<u> </u>	Ens //0///	13	15	10	0	0	ľ			
DESCRIBE EMISS			_		14	0	15	10	10	1			
EMISSION COLD	Ting	End IF WATER D	ADCODI E	T DI LIME	15	+-	5	0	0				—-· ·
sun Whit-		Attached [7				10	<del> </del>	+	+ -	<del> </del>			<u> </u>
PONT IN THE PI	LUME AT WHICH OPAC	ITY WAS DETI			16	0	0	0	0				
Start 5 to	10 Adorewants	<b>YEnd</b>			17	0	0	0	0	•			
DESCRIBE PLUM	IE BACKGROUND				1 18	0	0	0	0	Buk	75/24	도 <b>7</b>	135
Start BAGH	ovse/+REES	End				4		<del> </del>	<del></del>	100	10 1		57
BACKGROUND C	ROJOC	SKY CONDI			1 "	0	0	0	0	1			
Stan Coren	End	Sprione			20	0	0	0	0				
SIAN 4-6mg	+== /	Start W	GIION	FIÇIOM End	21	0	0	0	0				57
AMBIENT TEMP		WET BULB	TEMP	RH, percent	22	0.	0		0	<del>                                     </del>			— <u>``</u>
Stan 20	End V	NA	1_	NA	<u>  </u>	<del> </del>	10	0		<del> </del>			
Stort I	COURCE LA	YOUT SKETCH		Draw North Arrow	23	0	0	0	0				
Stack with C	GAUNCE LA	·Jui ansiur ⁄	•	A A A A A A A A A A A A A A A A A A A	24_	0	0	0	0	ane	1/24	<u>=0</u>	201
Sun +	X			(T)	25	1	0	0	0				
Wind -				•	<b>∤</b> }	10	<del>                                     </del>	<del>                                     </del>	<del>i -</del>	<del> </del>		-	
				7	26	0	0	0	0	<del> </del>			
1	(E)	(4)		1	27	0	0	0	0				' `
1.		MCH	SHO	P	26	0	0	0	0	1			ئے
		i			29	0	0	0	0				
				~	<u> </u>	+	<del> </del>	<del> </del>	┼	<del> </del>	041	20	:
		i			30	0	0	0	10	aus	~/24:	=07	<i>y</i>
		1			OBS	ERVER'S	NAME (	PINT	_ /				
	_	Observer's	Positio	n .		esg			45/6	<u> </u>	1 =		
1		<b>&gt;</b>			OBS	ERVÉA'S	SIGNATI		rnels	e Se-	DAT	1/12/	1
1		400			D'AG	ANIZATIC		1 10	-	7	ب	(101	
	Sun Loc	ation Line	—— <i>†</i>	<b>Y&gt;</b>	1 1		-	1 Oua	litv	Manager	nent		,
ADDITIONAL INF	ORMATION A 1					TIFIED BY			<u></u>	<u> </u>	DAT	TE /	تعـــــ د ا
1 et Helps	en - Jan	Hall	مطار	Dy Hill	ET/	\						3/29	1/9
*		Rann		<u> </u>		TABLE 150 4		FARM				Π	<b>—</b> [.]
Melter	r — /	ruce.	rize		CON	TINUED (	N AEQ	PUHMI N	UMBER		1	1	

	•	VISIBL	E EMISSION (	DBSEF	VATIO	N FO	RM		No.	5	0F9
COMPANY NAME	<del></del>			OBSE	RVATION	DATE		START	TIME 715		TIME
Kentucky Electric Stee	el, Inc.			SEC	1120	40		0	113		21
U.S. 60 West - Coalton	n			100	0	15	30	45		COMM	ENTS
				1	0	0	0	0			
СПУ	STATE	12	DP	2	D	0	0	0			
Ashland PHONE (KEY CONTACT) Plant	KY		41102	3	0	0	0	0			· · ·
(606) 929-1320 Guard	103-03		20	4	0	0	0	0			
PROCESS EQUIPMENT	100 00		TING MODE	5	0	0	0	0		-	<del></del>
Melt Shop		0n	Line	6	0	0	0	0	<i>Q</i>	0/211	~ A 9:
CONTROL EQUIPMENT			ING MODE Line	7	0				ang	124	=0%
Harsell Baghouse		UII	Line		0	0	0	0			
Beghouse Exhaust Roof	Mayit	5. E	AST END	•	0	0	0	0	 	·	
OF Building				•	0	0	0	0			<del></del>
HEIGHT ABOVE GROUND LEVEL	HEIGHT BEI	ATIVE TO	OBSERVER	10	0	0	10	10			
60'	Start LC	_ 1	nd V	11	10	10	10	5			
DISTANCE FROM OBSERVER	DIRECTION		-	12	0	0	0	0	any	55/24	= 2.299
Start 600' End 600'	Start NOY	74 E	no North	13	0	0	0	0			•
DESCRIBE EMISSIONS Start COFTING	End _	/		14	0	0	0	0			
EMISSION COLOR	IF WATER D			15	0	0	0	0			<del></del>
Stan WHITE End V	Attached 17		Detached D	16	0	0	0	0			
Sten Sto 10 Adomunito		HAMILED		17	0	10	10	15	Phe	a F	Qu.
DESCRIBE BLUME BACKGROUND				18	25	30	30	401	4	gen E Chang	- 355
Sun BAGHOVSE/+REES	End -			19					Ind	Chare	<del>\</del> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
BACKGROUND COLOR SIRR   BROWNERD V	SIND CONDIT		- 1	<b>-</b>	45	45	35	40			
WIND SPEED	WIND DIREC		Ron	20	40			20			<del></del>
Stan 6 - 8 Apt End	Start W	E	nd V	21	20	15	15	15			<del></del>
AMBIENT TEMP Stan 72 End	WET BULB T		RH, percent	22	15	10	0	5			
				23	0	0	0	0			
Stack with CEEE LAY	OUT SKETCH		Draw North Arrow	24	5	5	5	10	any	410/5	1=17.08
Sun 💠			$\bigcirc$	25	15	15	15	20			
Wind -			<b>X</b>	26	25	25	25	zo			<del></del>
6	(4)		\	27	10	10	5	0			
	MCH	5HOF	<b>b</b>	28	10	<del>                                     </del>	10	5		<u> </u>	
				29	0	1	5	5	<b>-</b>		
				l <del> </del>	<del>-</del>	0	<del>}</del>		G	241/.	
			-	30	0	0	10	0	unz .	70/20	t=10,0°
	0	_			AVER'S	NAME (P	RINT	sle	U		
	Observer's	Position			AVEA'S	SIGNATU	IRE/ /	1	<u> </u>	DATI	12/00
	w > _	1				my C	te	soles	2	5	1200
Sun Loca	tion Line	- <i>(V)</i> -		i 1 -	WIZATIO		Oua <sup>1</sup>	iitv N	ianagen	ent	
			1 11:	CERT	TFIED BY		<u> </u>	<u> </u>		DAT	E/20/
1st Helper - Jim	tall	Nor	ry Hal	ETA							129/0
melter - 18	ruce n	nos	rby Hill	CONT	INUED C	N VEO I	FORM NI	AMBER			1 1

		AIDIDE EMISSION (	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		••••	-		No
COMPANY NAME			OBSE	NOTTON	,		START	
Kentucky Electric Ste	el, Inc.		SEC	12	100	<del>,</del>	1,2	[78]
STREET ADORESS U.S. 60 West - Coalto	n		NEW /	0	15	30	45	COMMENTS
			1	25	25	25	<b>3</b> ⊘	<b>S</b> X
СЛҮ	STATE	ZP	2	30	25	25	<b>2</b> 5	and top B
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE ID	41102	3	30	25	zs	20	
(606) 929-1320 Guard	1	40-0020	1	15	15	(0	5	
PROCESS EQUIPMENT		OPERATING MODE	5	3	10	5	5	
Melt Shop CONTROL EQUIPMENT	<u> </u>	On Line OPERATING MODE	6_	0	0	Ū	Ø	ang 380/24=15,83
Harsell Baghouse		On Line	7.	0	0	0	0	ang 380/24=15.83 Change B
DESCRIBE EMISSION POINT . /			•	0	25	35	38	
Beghouse Exhaust Kon	F Marite	EAST END	•	30	25	<u> </u>		en Chang B
OF Building	<u>.</u>		10		35	35	li .	
HEIGHT ABOVE GROUND LEVEL	1 .	ATIVE TO OBSERVER	11	25	25		70	
DISTANCE FROM OBSERVER	DIRECTION	FROM OBSERVER	12	10		5	5	ang 458/4=18.96.
Start 600 End 600	Stan Nov	this End North	13	0	0	0	0	
DESCRIBE EMISSIONS Stan COFTILLEY	5m /		14	0	0	0	0	
EMISSION COLOR		ROPLET PLUME	15	0	0	0	0	,
SIBN White END POINT IN THE PLUME AT WHICH OPAC	Assched 11	NA Detached D	16	0	0	0	0	
SIR S' TO 10 Adovenounts		or second Stylestop	17	0	0	0	0	
DESCRIPE DIAME DACKODOLDID			18	0	0	0	0	ang 0/24 = 090
Stan BAG HOUSE + REES BACKGROUND COLOR	End SKY CONDI	MAS	19	0	0	0	0	
Sian Guen End	SunSat	tend End V	20	0	0	0	0	h.g.
SUR 10-12 ptend V	Start 5	TION FROM V End V	21	0	0	~	0	¥.5°
AMBIENT TEMP	WET BULB	TEMP RH, percent	22	0	0	0	0	<u> </u>
Start 85 End	NA	- NA	23	0	0	0	0	5
with C	YOUT SKETCH	Draw North Arrow	24	0	0	0		aug 0/24=0%
Plume Sun +		<b>(†)</b>	25	0	0	0	0	7
Wind -	- 1	$\sim$	26	0	0	0	0	
6	(H)		27	0	0	0	0	
	MCH	SHOP SW	28	0	0	0	0	į.
			29	0	0	0	1	
			30	0	0	0	0	ang 9/24=09
			<u> </u>		HAME (P			TOT-UB is
	Observer's	Pastian	6	2019	ie i	4es	sle	9
	<b>&gt;</b>		OBSE	AVER'S	SIGNATU	RE /		S/12/00
a		ØAGA	NIZATIO	JC.	Lev	ulan	13/1400	
Sun L					Qua]	lity'	lanagement	
ADDITIONAL INFORMATION	wale Hell	ETA	FIED 8Y				3/29/00 <sub>1</sub>	
10 Helper - James Melter - Bon	ue m	mi e		NUED C	N VEO F	ORM NI	MBER	
	ne ma	- ¬ !	· I					

	•. į	VISIBI	LE EMISSION	OBSE	RVATK	ON FO	PM		N	<u>. 3</u>	F9
COMPANY NAME  Kentucky Electric Ste	el, Inc.		· · ·		RVATION			START	TIME 218	END	TIME
STREET ADDRESS U.S. 60 West - Coalto				SEC		15	30	45		COMME	NTS
				117	0	0	0	0			
СПУ	STATE	7	70°	2	0	0	0	0			
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE ID	NI WARE	41102	] 3	0	0	0	0			<del></del>
(606) 929-1320 Guard	103-03		*	1	0	0	0	0	1	<del></del>	
PROCESS EQUIPMENT			TING MODE	5	0	0	0	0		<u> </u>	
Melt Shop CONTROL EQUIPMENT		1	Line	<b>∐</b> 。	0	0	0	0	<del> </del>	0/0.1	- :O
Harsell Baghouse			TING MODE Line	11-	0	0	0		du	9/24	2076
DESCRIBE EMISSION POINT				-	<del>                                     </del>	<del>                                     </del>		0			
Baghouse Exhaust Koo	F Marita	5n 6	EAST END	╟╬	0	0	0	10	1001	<del>}</del>	<del></del> .
OF Building		•		1	15	15	10	5			
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO	O OBSERVER	10	10	5	0	10	ļ		
DISTANCE FROM OBSERVER			ing V	] -''-	5	5	0	0	<u> </u>		
Start 600 End 600	DIRECTION I		BSERVER End North	12	0	0/	0	0	end	mp na	ng 80/4=3:
DESCRIBE EMISSIONS	02.1755.7		30770777	1 13	0	0	0	0			
Sun COPTING	End			14	0	0	0	0			
EMISSION COLOR Stan White End	IF WATER D			15	0	0	0	0			
POINT IN THE PLUME AT WHICH OPACE	Attached (1)	RMINED	Detached D	16	0	0	0	0			
SIAN 5 to 10 Adomenanto	/End			17	0	0	0	0			
DESCRIBE PLUME BACKGROUND Sian BAG HOUSE + REES	•/			18	0	0	0	0	2.45	9/24:	- 19-
BACKGROUND COLOR	End SKY CONDIT	YNS		19	0	0	0	0	3	10-	-0 10
Start Assert End	Start Start	ء معة	nd -	20	0	0					
WIND SPEED Stan 10-12 End	WIND DIREC	TION F	Pon	21			0	0		<del></del>	
AMBIENT TEMP	Start 5 V		RH, percent		0	0	0	0		<u></u>	
Start End	NA-		NA	22	0	0	0	0			
Stack SOURCE LAY	OUT SKETCH		Draw North Arrow	23	20	35		<u>30</u>	sly		
with Plume				24	30	25	30	20	aug ?	225/24	=9,382
Sun + Wind -			$/ \Psi \mid$	25	25	25	30	20			
		<u>×</u>	-	26	20	20	15	20			·———
6	(4)			27	20	20	15	15	Cha	se B	
	MCH	5HOF	500	28	20	15	15	10			<del></del>
				29	10	10	10	15			
				30	15	15	15	5	ana	420/	6678
				OBSER	IVER'S N		<del>````</del>			10	10 16 1/6
	Observer's P	Osition		60	2019	el	ten	sle	$\varphi$		_
	<b>&gt;</b>			OBSEF	VERS S			La		DATE	- /
				ORGA	VIZATION			-4	<del>,</del>	13//	2/00
Sun Potal	ion Line					ntal	Qual:	lty M	anageme		
ADDITIONAL INFORMATION James	Heu .	Elec-	& Hall	ETA	TED BY					DATE 3/	29/00
Melter - Son	nce m	w	e^	сонти	WUED ON	VEO FO	XXX NUX	IBER			

	VI	SIBLE EMISSION	OBSEF	RVATIO	N FO	ЯŅ		No	4	<u></u>	<u> 7</u> F
COMPANY NAME		<del></del>		RVATION		<u></u>	START	TIME		TIME	
Kentucky Electric Ste	el, Inc.		SEC	1/12	100	1	- /	218			
U.S. 60 West - Coalto	n		LEN	•	15	30	45		COMM	ENTS	
			] [ •	10	5	5	10				
СПУ	STATE	23P	2	10	5	0	0				
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE ID NU	41102	3	0	0	0	10				
(606) 929-1320 Guard	103-0340		4	10	10	15	15				
PROCESS EQUIPMENT		PERATING MODE	5	20	20	15		meel	<del></del>		<u>k</u> ]
Melt Shop		On Line	6	10	10	5	5		205/2		Cue
CONTROL EQUIPMENT Harsell Baghouse	l°	PERATING MODE On Line		5	0	0	0	ang.	-/4	420	34%
DESCRIBE EMISSION POINT		OI DINC									
Baghouse Exhaust Kool	- Mariton	EAST END	-	0	0	0	0	<u> </u>			<b></b>
OF Building	•			0	0	0	0				
HEIGHT ABOVE GROUND LEVEL		VE TO OBSERVER	10	0	0	0	0	·			
DISTANCE FROM OBSERVER	Start LO		11	0	0	0	0				, ,
Start 600 End 600	DIRECTION FRO	End North	12_	0	0	0	0	aug.	1245	0,2	112
DESCRIBE EMISSIONS	1		13	0	D	0	0			•	
Sian COFTING	End U		14	0	0	0	0				
EMISSION COLOR Stan White End	IF WATER DRO		15	0	0	0	10				
POINT IN THE PLUME AT WHICH OPACE	TY WAS DETERM	INED	16	10	15	20	20				
SIEM 5 to 10 Adovenouitor	Ænd_		17	20	20	15	15	Slys	int		
DESCRIBE PLUME BACKGROUND Sun BAG HOVSE + REES	V		16_	15	15	20	25	Sup aug	220/2	129,	179
BACKGROUND COLOR	SKY CONDITION	is .	19	30	30	35	40	- 0			[]
Stan April End	Stan Scatter		20	10		50	40				
Sun8-10-4 HEND	Start 500	N Figur	21	40		50	<del></del> +				£.5
AMBIENT TEMP	WET BULB TEM	P RH, percent	22	20			30		•		<u></u>
Sign 88 End	NA-	NA	23	25		_ T	25 25	<del>- · · ·</del>			
Stack SOURCE LAY	OUT SKETCH	Draw North Arrow	24	75	10			aug?	10/	- 20	<u></u>
Plume Sun +		<b>(</b> )	25	رر،	-	7.		ang.	124	<b>- 27</b>	ر <b>۵۵ ک</b> ر
Wind		2.	26	>	3	0	15	Chan	c A		<del></del> []
8	(4)	+ $ $		15	20	20	20				٤,,
	MCH ST	TOP SU	27	-	-	25/	20	and	Chan	en-	<del></del> :
,	711627 01			<del></del>	15	15	10		<del></del>		<u> </u>
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		1	30	20	15	15	15	Rug 3	20/24:	= 15	42
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	Observer's Post	tion		VER'S	GNATUR	E	1/5/	<del>}</del>	DATE		
140	,, <i>,</i> , , ,	_	<u>.</u>	De	erg		You	6	5/	12/	00
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ADDITIONAL INFORMATION A			CERTIF	IED BY	<u>a.l</u>	Vagi1	Ly Pic	agemei		291	
Lot Helper - Jun	sall !	nealy Hill	ETA						<u>  3/</u>	24/	<u> </u>
Melter - Bun	u ma	ne	СОИТИ	NUED ON	VEO FO	RM NUM	BER				

	,	VISIB	LE EMISSION	OBSEF	STAVE	N FO	MF		No	<u>. 5</u>	_F_	9
COMPANY NAME	<u> </u>			OBSE	RVADON	DATE		START	TIME	E	THE	
Kentucky Electric Ste	el, Inc.			]	5/1:	210	<u> </u>					
STREET ADDRESS U.S. 60 West - Coalto	n			SEC	0	15	30	45	[	COA	WENTS	
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CITY	1 == . == -				<del></del>		15	15	<del>                                     </del>		<del></del> -	
Ashland	STATE KY		<b>25°</b> 41102	11-	15	15	()	1/2	<del> </del> -			
PHONE (KEY CONTACT) Plant	SOURCE ID	MIMABE		┨┇	15	1/5	15	10				
(606) 929-1320 Guard	103-03	-		114	5	15	15	10				
PROCESS EQUIPMENT		OPER	ATING MODE	5	10	10	10	15			<del>_</del>	
Melt Shop		1	Line	<u> </u>	15	15	15	5	ang	310	14 = 1=	9.92
CONTROL EQUIPMENT		1	ATING MODE	]  -	(2,1	/3	12	<del>                                     </del>	7		14 -10	(10
Harsell Baghouse		Un	Line	╛┠──				<b> </b>	<del> </del>			
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1	·	24	LIST END	-   •								
OF Building	·			10	`	] _		<u> </u>	<u>L</u>		_	
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Stan COPTING EMISSION COLOR	End C			<b>┧</b> ┠───	<b>├</b>	<del> </del> -		<del> </del>	<del></del>	_	<del>- Au</del>	
	Abached 17			15	<del> </del> _	<u> </u>	<u> </u>	<u> </u>				
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SIEM 5 to 10 Adorewants	end_			_   17	1	1			<u> </u>			
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AMBIENT TEMP Stan 88 End 6	WET BULB		RH, percent	22				<u> </u>				
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with .	YOUT SKETCH	ı	Draw North Arron	24								
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Wind -			V	-		<del>                                     </del>		<del> </del>	<del> </del>			
			4	26	<del> </del>	<del> </del>			<u> </u>		<del></del>	
6	(4)		1 -	27	<del> </del>	<del> </del>	ļ		<u> </u>			
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Melter - Bu	Hall 1	<u> </u>	en Nill	ETA							3/29	10
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		SIBLE EMISSION	OBSEF	WATK	N FO	R <sub>.</sub>		No	6	of -	7
COMPANY NAME		·	OBSE	RVATION	DATE	<del></del>	BTART	TIME		TIME	<del></del>
Kentucky Electric Stee	el, Inc.			-12				20		150	•
STREET ADDRESS U.S. 60 West - Coalton	า		SEC	•	15	30	45		COMM	<u> </u>	<del></del> -
		···	1420	15	15	15	15	Make	chia		
СПУ	STATE	2P	1 2	15				7.4274	2019		<del></del>
Ashland	KY	41102	J -	1/	15		12	<del> </del>			<del></del>
PHONE (KEY CONTACT) Plant	BOURCE ID MU	MBER	11	15	15	15	15				
(606) 929-1320 Guard	103-0340	)-0020	] [ •	15	15	15	15	ł			;
PROCESS EQUIPMENT	0	PERATING MODE	7 5	15	20	20	30	420/2	1-17	100/	
Melt Shop CONTROL EQUIPMENT		narge/Melt/Tap					ĭ	1	<u>- / /•</u>	24%	
	1 .	PERATING MODE	1485	30	25	20	20	<del> </del> -			
Harsell Baghovse	10	nline	14/26	30	15	15	15		<del>,</del>		·
DESCRIBE EMISSION POINT			0	1.5	15	15	15				
Middle, East + Wa	of end o	of Mel shop	-   c	15	15	15	15				
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		VE TO OBSERVER	11-,-	15	15	15	10	24.1			<del></del>
DISTANCE FROM OBSERVER	Start 10'	End -	<b>↓</b>	10	10	10	10	340/24	= 14	1172	<u>'</u>
	DIRECTION FRO	· · · ·	1831	15	_15	15	15				,
DESCRIBE EMISSIONS	Sen /vary	End North	1032	15	15	B	10				
Start Lo Lo Fry	Paul		14								
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Stan 10 out +4bour montrart	nd 🗸		17	13	20	20		310/	24 = 1	2.92	7
DESCRIBE PLUME BACKGROUND			1437	15	15						<del>"</del>
	IND LONDITION					15	15				
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	MND DIRECTION	N EIRO C	20	16	10	10	١٥	Gad To	A		ŀ
	Start Secot me		21	/0	10	10	10				
AMBIENT TEMP	NET BULB TEMP	1 ' 4 ' 1	22	10	, ,	$\neg \neg$				<del></del> -	—.
Start 35-90 End /	N/A	N/A.	23	10	<u>- /                                   </u>	10	10	240/	1.0		
Stack SOURCE LAYOR	UT SKETCH	Draw North Arrow	<del> </del>	-40	/0	19		240/21 =	10.9	20 %	
Plume Sun -			1443		_5	3	5	Change	A		í
Wnd -			25	10	_/0	15	15				
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	<u>B</u>	_	26	10	10	10	19				i
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	<b>&gt;</b>		OBSERV	ER'S SK	NATURE	<u> M7</u>	ew.		DATE		
1400	<i>/</i> \	_	Bu	<b>.</b>	4		L/			2-00	, Ì
Sun Location			ORGANI	ZATION	7						—
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COMPANY NAME	<del></del>		OBSE	RVATION	DATE		START		END TIME	
Kentucky Electric Ste	el, Inc.			-12-	09		143	0	1520	
STREET ADDRESS			SEC	0	15	30	49		COMMENTS	
U.S. 60 West - Coalto	n		1997							
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CITY	STATE	ZP	2	0	ا م	0	. 0		. ——	
Ashland	KY	41102	,							
HONE (KEY CONTACT) Plant	SOURCE ID MUMB		l	٥٫	- 0	0	. 0			
(606) 929-1320 Guard	103-0340-	0020		٥	0	٥	0	···-		
ROCESS EQUIPMENT		RATING MODE	5	٥	0	0	0	55/240	2.29%	
Melt Shop CONTROL EQUIPMENT		rge/Melt/Tap	1485	Q	0	15	25		1	
W. // D /		RATING MODE	_			•		Charge	<u>/</u>	
Harsell Bashovse	100	line	1456	25	30	30	3 0	End C	hery	
JESCRIBE EMISSION POINT		-4		30	30	25	25			
East and + Middle	of Mut	Phop	6	25	20	20	15		-	
	·		10							
HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE	TO OBSERVER		15	15	15		1100 1	·	-:
_60'	Start /0'	End -	11	15	15	10	10	180/24	: 18.75%	
DISTANCE FROM OBSERVER	DIRECTION FROM		187	_/0	10	10	3			
Stan/OO End	Son North	End North	1302	5	5	5	£			-
DESCRIBE EMISSIONS			14							
SIBN HOT LOFE . TY EMISSION COLOR	End -			_3	_5	_ 5				
	# WATER DROPLE Attached   17		15	_5	0	0	ę			
POINT IN THE PLUME AT WHICH OPACE	TY WAS DETERMINE	Detached D	16	ام		اه	0			
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DESCRIBE PLUME BACKGROUND			<del>     </del>	9	- 9	0	-	727	1.08	<del>-</del>
in Same	End		1507	<u> </u>		0	0		<u> </u>	
BACKGROUND COLOR	SKY CONDITIONS		308	9	ام	0				
Start Serve End	Son Scattered	End /	20	0	Q	_ 0	,	- <del>-</del>		
MIND SPEED	WIND DIRECTION		21			1			<del></del>	
Stan 7-15. End	Start SULB TEMP	RH, percent	1		- 9	اه	9		· <del>- ··</del> -	
stari 85-90 End	NA	NIA	22	0	0	0	Q			
	· · · · · · · · · · · · · · · · · · ·		23	اه	اه	اه	0	9/24= 6	x %	
Stack SOURCE LAY	OUT SKETCH	Draw North Arrow	.24_			T I				
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ASIBLE EMISSION OBSERVATION FORM No. 8 of 9 COMPANY NAME END TIME OBSERVATION DATE START THE Kentucky Electric Steel, Inc. 5-12-00 1520 STREET ADDRESS 30 COMMENTS U.S. 60 West - Coalton 10 Melt shan CITY STATE ZP 2 5 10 10 10 41102 Ashland 3 PHONE (KEY CONTACT) Plant 20 20 SOURCE D MUMBER (606) 929-1320 Guard 103-0340-0020 16 15 PROCESS EQUIPMENT 320/24= 13.33% OPERATING MODE Melt Shop
CONTROL EQUIPMENT Charge/Melt/Tap 15 15 OPERATING MODE Harsell Bashovse 10 10 DESCRIBE EMISSION POINT • 5 5 10 10 Middle, East + West and of Mit show 5 5 5 10 3 5 HEIGHT ABOVE GROUND LEVEL HEIGHT RELATIVE TO OBSERVER 175/24. 7.29 % 60' 11 5 Start /0' 0 0 10 End \_ DISTANCE FROM OBSERVER DIRECTION FROM OBSERVER 10 10 Sten/100' Statt North End North 15 20 20 DESCRIBE EMISSIONS Sun Lofton 14 کا 10 EMISSION COLOR
Start About F WATER DROPLET PLUME 15 5 5 Azached I1 N/A End V Detached [] 260/24: 10.83% POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED 16 Start Same 17 10 10 DESCRIBE PLUME BACKGROUND 20 15 Stan Some End 1 BACKGROUND COLOR SKY CONDITIONS وإز 20 15 Stan Sunc SON SULMENERS L 20 WIND SPEED 10 WIND DIRECTION Start 7-15 21 Start SW End -10 End 10 10 AMBIENT TEMP WET BULB TEMP RH, percent 22 3 5 5 Sun .85-40  $\mathcal{N}/A$ NIA End W 210/24 = 8,75% 23 ۵ 9 Stack SOURCE LAYOUT SKETCH Draw North Arrow with Plume 0 10 10 Sun 25 15 13 Wind --26 15 10 27 10 MULTSLOP 28/24 - 11.88 % 29 OBSERVER'S NAME (PRINT) Bryan Brunfie Observer's Position OBSERVER'S SIGNATURE DATE Benfish Sun Location Line ORGANIZATION Environmental Quality Management CERTIFIED BY ADDITIONAL INFORMATION

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SIBLE EMISSION OBSERVATION FOR. No. 9 of 9 COMPANY NAME OBSERVATION DATE START TIME END TIME Kentucky Electric Steel, Inc. 5-12-90 1550 1620 STREET ADDRESS U.S. 60 West - Coalton COMMENTS Mettolog 20 STATE 25 Ashland KY 41102 HONE (KEY CONTACT) Plant 35 40 40 SOURCE ID NUMBER (606) 929-1320 Guard 103-0340-0020 40 PROCESS EQUIPMENT 755/24= 31.46% OPERATING MODE 5 35 Melt Shop Charge/Melt/Tap CONTROL EQUIPMENT OPERATING MODE Harsell Bashovas 25 20 . Moddle + East and of Mult shop 10 10 **HEIGHT ABOVE GROUND LEVEL** HEIGHT RELATIVE TO OBSERVER 300/29-12.50% 60' Start /0" 10 End \_\_ DISTANCE FROM OBSERVER DIRECTION FROM OBSERVER 5 9 5 Stan (-00' Statt North End North 15 20 20 20 DESCRIBE EMISSIONS Star Same 29 EMISSION COLOR IF WATER DROPLET PLUME 15 20 Start Same End 4 Attached (1 N/A Detached D 405/24=16.88% POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED 16 I Stan Same 17 Pour back From LMP DESCRIBE PLUME BACKGROUND 18 15 Ster Same End C BACKGROUND COLOR SKY CONDITIONS 15 San Start Scattered End -End WIND SPEED WIND DIRECTION Start SW Stan 7-15 21 End -10 AMBIENT TEMP WET BULB TEMP RH, percent 22 5 Sten 85-90 End -NIA 280/24= 11.67% 23 Stack SOURCE LAYOUT SKETCH Draw North Arrow with Plume 24 /3 Sun 25, 15 25 24 25 25 25 25 Emission Point 27 25 28 20 15 480/24 = 20.00 29 OBSERVER'S NAME (PRINT) Bryan Brunfie OBSERVER'S SIGNATURE Observer's Position DATE Sun Location Line Environmental Quality Management CERTIFIED BY ADDITIONAL INFORMATION ETA 1 St Halper -

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ADDITIONAL INFORMATION

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3-22-00

COMPANY NAME   KENTUCKY Electric Steel, Inc.   STRET ADDRESS   STRET ADDRESS   U.S. 60 West - Coalton   STATE   ZP
STREET ADDRESS  U.S. 60 West - Coalton  Line  CITY Ashland Ashland PHONE PROVIDED THANK (606) 929-1320 Guard  103-0340-0020  PROCESS EQUIPMENT Melt Shop On Line CONTROL EQUIPMENT Melt Shop On Line CONTROL EQUIPMENT Melt Shop On Line CONTROL EQUIPMENT Harsell Baghouse  On Line  CESCRIBE EMISSION POWT Baghouse Exhaust  DESCRIBE EMISSIONS Sun John Shop
CITY Ashland RY Ashlan
STATE   2P
STATE   2P
Ashland  FY PHONE (KEY CONTACT) PHONE PHONE (KEY CONTACT) PHONE PHONE (KEY CONTACT) PHONE
COLOR   PLANT   COLOR   PLANT   COLOR   COLO
PROCESS EQUIPMENT  Melt Shop  CONTROL COUPMENT  Harsell Baghouse  DESCRIBE EMISSION PONT  Baghouse Exhaust  MEGHT ABOVE GROUND LEVEL  MEGHT ABOVE GROUND LEVEL  MEGHT ABOVE GROUND LEVEL  MEGHT RELATIVE TO OBSERVER  Sun 25 End   DISTANCE PROM DESERVER  Sun 25 End   DISTANCE PROM DESERVER  Sun North End   DESCRIBE EMISSIONS  Sun According Emission
Melt Shop  CONTROL EQUIPMENT  Harsell Baghouse  DESCRIBE EMISSION POINT  Baghouse Exhaust  MEGHT ABOVE GROUND LEVEL  MEGHT RELATIVE TO OBSERVER  SIMP 25 End  DISTANCE FROM OBSERVER  SIMP 25 End  DISTANCE FROM OBSERVER  SIMP 20 0 0  10 0 0 0  11 0 0 0 0  11 0 0 0 0  12 0 0  13 0 0 0  14 0 0 0  15 0 0 0  16 0 0 0  17 24 = 0.68%  17 0 0 0 0  DESCRIBE EMISSIONS  SIMP 25 End  DESCRIBE EMISSIONS  SIMP 26 End  SIMP 27 End  DESCRIBE PLUME AT WHICH OPACITY WAS DETERMINED  SIMP 26 End  SIMP 27 O 0 0 0  SIMP 27
CONTROL EQUIPMENT Harsell Baghouse  On Line  DESCRIBE EMISSION POWT Baghouse Exhaust  MEIGHT ABOVE GROUND LEVEL  MEIGHT RELATIVE TO DESCRIVER Sian 25 End  DISTANCE FROM OBSERVER Sian 700 End  DRECTION FROM OBSERVER Sian North End  DRECTION FROM OBSERVER Sian North End  DRECTION FROM OBSERVER Sian North End  DESCRIBE EMISSIONS Sian Score  End  AMBIGHT FULME AT WHICH OPACITY WAS DETERMINED  DESCRIBE PLUME BACKGROUND SIAN FOR ENd  Sian Score BACKGROUND COLOR  SIAN Score BACKGROU
DESCRIBE EMISSION POINT  Baghouse Exhaust    Baghouse Exhaust   Beght relative to observer
DESCRIBE EMISSION POINT  Baghouse Exhaust    Paghouse Exhaust   Page   P
Baghouse Exhaust    Baghouse Exhaust
HEIGHT ABOVE GROUND LEVEL   HEIGHT RELATIVE TO OBSERVER   11
MEIGHT ABOVE GROUND LEVEL  SIAN 25 END 11 0 0 0 15/24 = 0.63 %  DISTANCE FROM OBSERVER SIAN 700 END DIRECTION FROM OBSERVER SIAN 700 END SIAN NOTH END 11 0 0 0 0 15/24 = 0.63 %  DESCRIBE EMISSIONS  SIAN SIAN COLOR SIAN SIAN SIAN SIAN SIAN SIAN SIAN SIAN
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Start 700 End Start North End 114 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
DESCRIBE EMISSIONS  SIAN & Lofton End   14 0 0 0 0 0 EMISSION COLOR   F WATER DROPLET PLUME   15 0 0 0 0    SIAN On End   Abachad   1
Stan & Lofron  EMSSION COLOR  Stan Oran End ABached 11 N/A Detached   15 0 0 0 0   9    POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED  Stan San End End   17 0 0 0 0 0   9    DESCRIBE PLUME BACKGROUND  Stan I I oran End   Stan Scatter End   19 0 0 0 0   9    WIND SPEED WHO DIRECTION Stan Stan Scatter End   20 0 0 0   9    Stan Sound End Stan Scatter End   20 0 0 0   9    Stan Sound End Stan Scatter End   21 0 0 0 0   9    AMBIENT TEMP WET BULB TEMP RH. percent N/A N/A   21 0 0 0 0 0    Stan Sounce Layout sketch Draw North Anow With Sounce End Source Layout sketch Draw North Anow Phume 10 5   10 0 0 0 0 0    Star Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow Phume 10 5   10 0 0 0 0 0    Star Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow With Source End Source Layout sketch Draw North Anow With Source End S
Stan Or End Attached 17 N/A Detached 10  POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED  Stan Send End 17 0 0 0 0 0  DESCRIBE PLUME BACKGROUND  Stan From End Star Conditions  Stan Send End Stan Sent End End Stan Sent End End Ambient Temp  Stan Send End WET BULB TEMP RM. percent N/A N/A  Stan So 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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17
DESCRIBE PLUME BACKGROUND  SIBIL FIRM  BACKGROUND COLOR  SKY CONDITIONS  SIBIL SCATTCAL End  WIND SPEED  WIND DIRECTION  SIBIL SCATTCAL End  AMBIENT TEMP  SUBJECT END  SIBIL SCATTCAL END  WHET BULB TEMP  SUBJECT END  STACK  SOURCE LAYOUT SKETCH  Draw North Anow  10  10  10  10  10  10  10  10  10  1
SIBIL TIME  BACKGROUND COLOR  SKY CONDITIONS  SIBIL SCATUCAL END  WIND SPEED  WIND DIRECTION  SIBIL SCATUCAL END  WHO DIRECTION  SIBIL SCATUCAL END  WET BULB TEMP  SIBIL SCATUCAL END  20  Q  Q  Q  Q  Q  Q  Q  Q  Q  Q  Q  Q  Q
BACKGROUND COLOR  SIAN SIAN SCATTURE END  WIND SPEED  WIND DIRECTION  Stan S-10 melt End  AMBIENT TEMP  Stan 80° End  SOURCE LAYOUT SKETCH  Draw North Arrow  WIND STAN SOURCE LAYOUT SKETCH
Stant South End Stant Scattered End 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Start 5-10 melf End Start 5-10 melf End Start 5-10 melf End 21 0 0 0 0  AMBIENT TEMP WET BULB TEMP RH. percent N/A N/A 22 0 0 0 0  Start 80° End N/A N/A 23 0 0 0 0  Start 80° End N/A N/A 23 0 0 0 0
AMBIENT TEMP Start 80° End WET BULB TEMP RH. percent  Start 80° End N/A N/A  Stack with CE Plume  10  10  10  10  10  10  10  10  10  1
Start 80° End N/A N/A 22 0 0 a '0  Stack Source LAYOUT SKETCH Draw North Arrow 10 10 10 10 10 10 10 10 10 10 10 10 10
Stack SOURCE LAYOUT SKETCH Draw North Arrow 10 10 10 10 10 10 10 10 10 10 10 10 10
Plume 10 10 1242 Q Q Q Q
Sun +
X Emission Point 27 0 0 0
28 0 0 20 0
29 0 0 0 0 2 29/24: 0.83 /2
20
OBSERVER'S NAME (PRINT)
OBSERVER'S SIGNATURE DATE
140° 5-11-10
Sun Location Line Chylingmental Quality Management
Environmental Quality Management
ODITIONAL INFORMATION CERTIFIED BY
DATE    ST Helper - 3-22-06

COMPANY NAME				_	RVATION			START		END TIME	£-3
Kentucky Electric Ste	el, Inc.			15	11-0	P		/3	29	1559	<b></b> \
STREET ADDRESS				SEC	0	15	30	45	c	COMMENTS	7.3
U.S. 60 West - Coalton	n			MEN_							
				15.4	٥	Q	0	c	Berterse		
CITY	STATE		20P	2	0	0	a	Q			٠,
Ashland	KY	1	41102	,							<b>6</b> 6
PHONE (KEY CONTACT) Plant	SOURCE ID	HUMBER	1	<b> </b>	اهــــا	- 0	0	Q			<del></del> [
(606) 929-1320 Guard	103-03	40-00	20	4	0	٥	Q	٥		·	
PROCESS EQUIPMENT		OPERA	TING MODE	5		0		0	Ø		. 5
Melt Shop		On:	Line								
CONTROL EQUIPMENT		OPERA	TING MODE	1534	0		0	0			
Harsell Baghouse		0n	Line	1595		0	Q	٥	<u> </u>		
DESCRIBE EMISSION POINT				8	ام	o	a	0			
Baghouse Exhaust				9						<del> </del>	
	·	_	<u> </u>		۵	9	0	Q			
L	·			18	٥	0	٥	0			4.
HEIGHT ABOVE GROUND LEVEL	Stan 25	ATIVE T	O OBSERVER	11			Q	a	Ø		_
DISTANCE FROM OBSERVER	DIRECTION			<del>                                   </del>							
Start 700' End	Start No			1188	_0	٩					
	1000 70 97	771		13/	Q	9	0	0			
DESCRIBE EMISSIONS				14	ام		a	a			
Start NOAR EMISSION COLOR	IF WATER D	DON FT	PLUMF	15							
Stan N/A End	Allached I1				0	0	0	0			
POINT IN THE PLUME AT WHICH OPAC				16	٥	. a	0	0			
Start Samuel	End			17	0	_ 0	0	0	Ø		
DESCRIBE PLUME BACKGROUND				10							
_	End		ļ	12.46	1	0	0	0			
Stan Frage BACKGROUND COLOR	SKY CONDI			1547	4	٥	٥	0			<u>.</u>
Stan Green End	Stert Scale	and	End	20	اه	اه	م	م ا	İ		٠.
WIND SPEED	1			21							
Stan 5-10 End V	StartSir	1	End		٥	0	0				<del></del>
AMBIENT TEMP Stan 85' End	WET BULB		1	22		٥	٥	٥	Ø		
Stan 83 End	<u> </u>	<u> </u>	NIA	23	0	٥	٥	0	1		
Stack SOURCE LA	YOUT SKETCH	1	Draw North Arrow	\ <del> </del>							<u> </u>
Plume				1533	<u> </u>	<u> </u>	8	0			
Sun 💠			$\cup$	15 33	٥	0	٥	0			
Wind				26	0	٥	0	0	·		·
					1 -				<del> </del>		.*
	X Emission	Point		27	9	0	Q	0	<del>                                     </del>		
	1			28	g.	_ a	0	9			
	j			29	0	0			0		
ł					1	T		-	<del>[</del>		
	1			1392	0	Q	٥	<u> </u>			
	ĺ				RVER'S						
_	Observer's	Position	<b>1</b>	1 8	<i>_yan</i> Avers	Br	um F	ield		T-04-	
	<b>&gt;</b>			OBSE	AVER'S	SIGNATU	HE ///			DATE	_
	_		WIZATIO	N				5-11-	20		
Sun Loc	>	11 ′			O112	iitv 1	Managemen	t	Ĺ		
ADDITIONAL INFORMATION			TFIED BY		. vua.	<u> </u>	<u></u>	DATE			
1st Helper -				ETA	·					3-22	2-06
1. Tierper				1							一
Maltar-				I I com	NNUED C	M AEO I	ORM N	MBER		1 1 .1	110

CONTINUED ON VEO FORM NUMBER

COMPANY NAME					RVATION	DATE		STAR			
Kentucky Electric Ste	Kentucky Electric Steel, Inc.							1629 1805658			
U.S. 60 West - Coalto	n			SEC	0	15	30	45	COMMENTS		
				1629	0	,	10		Bylonce		
CITY	STATE		ZIP	1				l			
Ashland	KY		41102	- <del></del>	0		0	0			
PHONE (KEY CONTACT) Plant	SOURCE ID	NUMBE			٥	٥	20	0			
(606) 929-1320 Guard	103-03	40-0	020	1 4	0	0	o	4	<u> </u>		
PROCESS EQUIPMENT		OPER	ATING MODE	5	٥	0	0		30/24 = 1.25%		
Melt Shop CONTROL EQUIPMENT			Line	1634							
Harsell Baghouse	,		ATING MODE Line			e	_ 0				
DESCRIBE EMISSION POINT			Line	14.35		0	- 4				
Baghouse Exhaust				•	٥	9	0	0	;.		
Bagnouse Exhaust				•	o	اء	0	0			
	·			10	a	0	_	20			
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE 1	O OBSERVER	11			۲		20/24 = 0.83%		
DISTANCE FROM OBSERVER	DIRECTION F				٥	0			121 - 0.83%		
Start 700' End	Start Nor			14.30		୍ଦ	0	0			
DESCRIBE EMISSIONS				22	a	<u> </u>	ا م	0	·		
Start L. France	End	-		14		0		و			
	# WATER DE			15			0				
STAN OF THE PLUME AT WHICH OPACE	Asached 17	<u> </u>	Detached D	16					,		
Sian Sine	End LEIE	HARNEL	'	17	<u> –                                   </u>		<u> </u>	0			
DESCRIBE PLUME BACKGROUND					-0	_0	9		Ø		
	End —			1246	0	0	ام_	Q	Ţ		
Stan Trans BACKGROUND COLOR	SKY CONDITI	9NS		1647	اه	اه	0	0	<u>-</u>		
Stan Green End -	Start Scotter	HCZY 1	End V	20		0					
Stant -10 End	WIND DIRECT			21		-	-	0	<del></del>		
AMBIENT TEMP	Start Sout	EMP	RH. percent			- 0					
Stan 85° End	NIA		NIA	22	_0	e		٥	· · · · · · · · · · · · · · · · · · ·		
Stack SOURCE LAY				23	Q	10	9	0	35/24= 1.46%		
Plume (Last)			Draw North Arrow	14.52		9	25	0			
Sun 4 1 20 1	0			1233							
Wind X	<u>x</u>			26	_0	-4	-0		,		
	ے بہت نہ			<del>  </del>	-0	0		اعب			
<u> </u>	Emission P	oint		27		_	0	اع			
		·	1	28	اه	اه		20	~•		
ļ				29	0	۵	0	-	20/21-0.853		
				1238					751 7.02 8		
1			į		<u> </u>	<u> </u>	a	0			
ł	Observer's Po	<b>0.5</b> -40-			VER'S N			. //	•		
		Janion	Į	OBSER	VER'S SI	GNATUR	<u>~ <i>F/1</i></u> E		CATE		
140	, <del>, ,                                </del>	_		Ba	m L		2		5-11-00		
Sun Locat			<del></del>	i i	IZATION	/_			<u>.</u>		
ADDITIONAL INFORMATION				CERTIF	FO BY	ntal	Quali	ty M	anagement		
1st Helper-				ETA					3-22-0		
M . /			1	I CONTIN	NED ON	VEO FO	GU NIM	RER			

COMPANY NAME					RVATION	DATE		START TIME			TIME	
Kentucky Electric Ste	el, Inc.				- 11-			165			29	•
STREET ADDRESS				SEC	0	15	30	45	Ţ <del></del>	COMM		
U.S. 60 West - Coalto	n			100%								
·				1459	0	ا ا	e	9	Basho-	14		
CITY	STATE	ZF	P	2	Q		a	٥	_			
Ashland	KY		41102	,				Q			· · · · · · · · · · · · · · · · · · ·	
PHONE (KEY CONTACT) Plant (606) 929-1320 Guard	SOURCE ID		•	1	. 0	- 0	_e					
	103-03			<u> </u>	٥	- 9	9					
PROCESS EQUIPMENT			NG MODE	5	0		ا م	0	Ø			·
Melt Shop CONTROL EQUIPMENT	<del>-</del>	On L	ng MODE	1704	Ø	0	ام	0				
Harsell Baghouse		On L		1705	9	٥	0					
DESCRIBE EMISSION POINT		<u> </u>		1705				0	<del></del>			
Baghouse Exhaust				}		2	_ 0	. 0				
	•			•	٥	٥		0				
AND AND AND AND AND AND AND AND AND AND	·	<del></del>		10	0	0	20	Q				
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO (	OBSERVER	11	0	Q	0	0	20/24=	0.83	1/2	
DISTANCE FROM OBSERVER	DIRECTION	FROM OBS		.12								
Start 700' End	Start No!			1730	0	٥		0			<u> </u>	
DESCRIBE EMISSIONS				1371	٥	θ		0	<u> </u>	·····		
Start Lafeton EMISSION COLOR	End 🗸			14	0	٥	_ a	0				•
EMISSION COLOR	IF WATER D	ROPLET PL	UME	15	0	o	0	e	1			
Stan Spane End FOINT IN THE PLUME AT WHICH OPACE	Atached (1	N/A	Detached 🗅	16	0	٥	25	Q				
Sten Same	End	turend ET)		17				0	45/24=	10	20/	
DESCRIBE PLUME BACKGROUND				·			20	0	129-	1100	0 14	
	End -			1374	Q	o	0	0				
Sian Sence		TIONS	16120	1722	0	0	٥	0				
Standard End	SONSCLT	End End	Scattered.	20	0	Q	٥	0				
WIND SPEED	MIND DIREC	IIUN		21						-		
Start /- S End -	Start SULB T		RH, percent		. 9	0	- 2			<del></del>		<del></del>
Stan 85° End	NI		NIA	22	0	_ م	٥	0				
	OUT SKETCH			23	0	٥	a	0	Ø			
with C		_	Oraw North Arrow	/24 /2-2	0		اه	اه				
Plume Sun -	25 20	20	(1)	_			<u> </u>					· <u></u>
Wind -	~	•		1223	_0	<u> </u>						
	X	<u> </u>		26	0	_0		_0				
<u> </u>	Emission	Point		27		0		0	·			<u>.</u>
		<del></del>		28	0		a	0				
				29					Ø			
ĺ				30		_	- 8	<u> </u>	*			
				1338	0	<u> </u>		0				
]	<b>a</b> .					MME (PR		,,				
	Observer's	Position	į	OBSE	VER'S	BC U	<u>'m <i>F∫</i></u> ¥€	eld		DATE		<del></del>
		_		l Le	-	and	Sel				-11-6	60
	·			ORGA	ZATION	10	<del></del>		<del></del>	-	_ <del> </del>	<del></del>
Sun Loca	lion Line	<del></del>				<u>ental</u>	Qua1	ity M	anagemen			
ADDITIONAL INFORMATION				l B	FÆD BY					DATE	-22-	-0~·
1st Helper - Melter -				ETA			=			1-4		עיט
M / -				CONTI	NUED O	N VEO FO	DRM NUR	MBER			ļ	ء ام
1 Melter-			•	. 1						• (		10

·		VISIBLE EMISSION	OBSER	VATIO	N FO	-ud		No	. 8 of 10	* * * * * }
COMPANY NAME	_	<del></del>	11	NOTTAVE			START		END TIME	
Kentucky Electric Ste	el, Inc.	····	SECT	5-11	-00	<del></del>	17	29	1759	
U.S. 60 West - Coalto	n		MON	0	15	30	45	<b>[</b>	COMMENTS	
0.9. 00 West 3353		<del></del>	1229					R	·	
CTV	Levare		1 2 2	Q		_ 0	<u>0</u>	Bagke	use	- 23
CITY Ashland	STATE	41102	11	0	0		- 0	<del> </del> -	<del></del>	
PHONE (KEY CONTACT) Plant	SOURCE ID		1131	0	0	0	8	<b></b>		<u> </u>
(606) 929-1320 Guard	103-03	40-0020	ا ا	0	0	a	9			
PROCESS EQUIPMENT		OPERATING MODE	7 5	٥	a	٥	0	Ø		
Melt Shop	- <u>-</u>	On Line	1234						<del></del>	
CONTROL EQUIPMENT	OPERATING MODE On Line	11 -	٥	0		. 0		<del></del>	<del></del>	
Harsell Baghouse	On Line	1235	0	- 0		0			:	
DESCRIBE EMISSION POINT Baghouse Exhaust				٥	٥	0	0			
Bagnouse Exhaust		1 0	0	0	0	Q			-, -	
	•		10	G	٥	0	0			
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO OBSERVER	] <del>  ,,  </del>					Ø		
75' DISTANCE FROM OBSERVER		FROM OBSERVER	┨ <del>┝┈┤</del>	- 0	<u> </u>	0	0	8/		
Start 700' End		The End V	1240	O.	0		0			· · ·
DESCRIBE EMISSIONS						٥	O		-	
Stan Nove End				اه	0	اه	اه		<del></del>	
EMISSION COLOR	# WATER DROPLET PLUME				اه		0			:
Start N/A End	Attached [7	N/A Detached D	16	0		-	-			***
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start Same End				-0			-		<del></del>	<del></del> {
DESCRIBE PLUME BACKGROUND	END V		17			_ 0	اه	Ø		
Sun Frees	End-		1226	0	9	0	ا م			
BACKGROUND COLOR	SKY CONDIT	TONS:	1282		اه	اه	اه			٤٤
Stan Green End -	Sunstall	Astt En Broken	20							
WIND SPEED	WIND DIREC	TION	21	- 0	-	0	- 0			
Stan 155 End 1-10 MPH AMBIENT TEMP	Start SQLE T	EMP RH. percent	┦┝──┤	<del></del> -0		-0	_ 0			<u> </u>
Stan 85° End	~//	I *	22		0	0	_0		<del> </del>	
			23	اه	ام	Q	0	Ø		,
Stack SOURCE LAY Plume	OUI SKEICH	Draw North Arrow	1752	0	Q	0	0			
Sun +		(1)	11 7							<del></del>
Wind		•	1357	<del></del>	- 0	- 0	-0		·	
			26	_ =	_0	o	ام_			
>	Emission I		27	0		٥	0			
		Frank End	28	ol	0	٥	0			L.
	1	5	29					Ø		
		Znol		- 0		-	-0	<u> </u>		:-
1	کیو		1330	0	0		_ م_			
	0.	_			ME (PRI					§1.3
	Observer's F	Position	OBSER	VER'S SI	Bru GNATUR	<u>m //</u>	eld		DATE	ئے۔۔۔
	,. <u>/</u>		Be		Bu	1	1		5-11-0	0
-6 <u>-</u>			ORGAN	ZATION	- /	,			- 11 0	
Sun Local	ion Line		Envi		ntal	Qual:	ity Ma	anageme		<u> </u>
ADDITIONAL INFORMATION			ETA						3-22-	<b>^</b>
Melter-						==				
Maltar-			CONTIN	UED ON	VEO FO	RM NUN	(BEA		1 1 1 1	

COMPANY NAME					RVATION	DATE		START		END TM	E
Kentucky Electric Ste	el, Inc.			JI	5-11	1-01		/7	59	<u> </u>	
STREET ADDRESS				SEEC	0	15	30	45		COMMENT:	<u></u> 5
U.S. 60 West - Coalto	<u>n</u>		<del></del>	MEN \					RI		
				12:57	٥	اع	0	- 0	Bashouse	· <del></del>	<del></del>
CITY	STATE		ZIP 41102	] [	9	0			<del></del> -		
Ashland PHONE (KEY CONTACT) Plant	SOURCE ID	MILLAE		1 3	. 0	٥	0	0			
(606) 929-1320 Guard	103-03			] [ 4	0	0		a			
PROCESS EQUIPMENT		1	ATING MODE	5	0	0	0	ام	Ø		
Melt Shop CONTROL EQUIPMENT			Line	1804	0	0	0	0		<del></del>	
Harsell Baghouse		4	Line	1805		0	٥	_ 0		·	
DESCRIBE EMISSION POINT				1000	0	۵	_	0		<del></del>	
Baghouse Exhaust				-			$\neg \neg$		<del></del> _		
	•			10	0		0	_ 0	<del></del>		
HEIGHT ABOVE GROUND LEVEL			O OBSERVER	1	Q	_	٥	O	4		
DISTANCE FROM OBSERVER	Stert 25				٥	0	0		Ø		
Start 700 End	Start Nor			1810	0	0	0	0			
DESCRIBE EMISSIONS	70 70			1821	0	_0	م_	0			<i>.</i>
	End Loft	/h,		14	a	0	0	0			
EMISSION COLOR	IF WATER D	ROPLET	PLUME	15	0	0	0	<u>_</u>			
Start N/A End Drang	TY WAS DETE	RMINE	Detached D	16	0	_ 0	25	0	_	<del></del> ·	
Start Same	End			17	0	0	Q	O	25/24=1.	04%	
DESCRIBE PLUME BACKGROUND		<del></del>	<del></del>	18%	0	٥	0	Q			
Start Trues BACKGROUND COLOR	End SKY CONDIT	- Avic		13/2	1			- 0			
State Green End	Stan Broke		End /	20	Q		0	ŀ		<del></del>	
I WIND SPEED	WIND DIREC	TION		21	٥		0	0	<del></del>		
Stan /-/ DANH END W	Start Sour				0	0	0	. 0		<del></del>	
Start 35° End 80'	NI		NIA	22		_ 0	0		0 /		
p	OUT SKETCH		Draw North Arrow	23	0	25	5	و	30/24=	1.25%	
with CEPlume 25				1832	٥	0		0			<del></del> -
sun + 25			$\cup$	125.9	0	Q	a	0			
Wind - X				26	0	٥	0	٥			
	( Emission (	Point		27	٥	0	0	a			
<u> </u>				26		0					
	•			29	0			<u>^</u>	Ø		
·				1	0	- 6		٥	19		<del></del> -
				1338	9		0	0			
	Observer's i				RVER'S N			. //			
	Observer 5.	POSITION		OBSEF	TYGA RVER'S S	GNATUR	E /	CIA.		DATE	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, , , , , , , , , , , , , , , , , , ,	\	_		NIZATION	Bun	fiel	<u>/</u>		5-1	1-00
Sun Loca	tion Line			Fnut	TOTIMA	ntal	Oual	itv M	anagement		
ADDITIONAL INFORMATION					FIED BY					DATE	<del></del>
1st Helper-			· · · · · · · · · · · · · · · · · · ·	ETA						3-2	2-00
Melter-				CONTI	NUED ON	VEO FO	AM NU	/BER			110

COMPANY NAME	<del></del>	-		OBSER	NOTTAVE	DATE		START	TIME	END T	ME	<del></del> 9
Kentucky Electric Ste			-11	100		18	29	18.	59			
STREET ADDRESS U.S. 60 West - Coalto	<b></b>			SEC	0	15	30	45		COMME	VTS	
U.S. 60 West - Coarto		-		1829			0		Basha			
	Tarina			2	0	o	<u> </u>	- 9	2 2 7 1 9			<u> </u>
СПУ	STATE	-	<b>ZDP</b> 41102	1		е	0	. 0				
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE ID	MI MARE		3	ø	Q	۵					: : 4
(606) 929-1320 Guard	103-03			4	Q	0	Q					
PROCESS EQUIPMENT		OPERA	TING MODE	5	0	15	o	ه ا	75/24-	1.46	%	
Melt Shop			Line					[ :		<u> </u>	·	
CONTROL EQUIPMENT		į.	TING MODE	1834	. 0	0	-	0	<del> </del>			<del></del>
Harsell Baghouse		On	Line	18:55	0	0	30	0				<del></del> :
DESCRIBE EMISSION POINT				ASS.	0	0	o	0	<u> </u>			`
Baghouse Exhaust				•	0	0	0	اه				
		10								<del></del> :		
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO	O OBSERVER					0	101			
75'	Start 25	<b>5</b>	nd 🗸	"	ရ	Q	۵	30	60/24=	2.50	<u>%</u>	
DISTANCE FROM OBSERVER	DIRECTION	1340	٥	0	٥	ام				: 3		
Start 700' End V Start North End V				133/	ြ	Q	0	0				
DESCRIBE EMISSIONS Start / OF The End /					9	9	0	0	-			
EMISSION COLOR   IF WATER DROPLET PLUME				15								<del></del>
Start Dance End Attached 11 N/A Detached D POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED					0		G	0				<del></del>
		RMINED		16		0	0	<u></u>	<del></del>			· ;
Stan Same	End			17		0	25		30/24:	1.25%		
DESCRIBE PLUME BACKGROUND					و_	0	0	0				<b>F</b> ?
Stan Trus BACKGROUND COLOR	SKY CONDIT	70110		1346 1347				0				
1				1		Ø	Q	- 0				
SIAN GRACE END L	Start Brog	TION		20	a	٥	0	a				
SIEN /-/OMPH END	Sunsonh			21		. 0	۵	G				<u> </u>
AMBIENT TEMP	WET BULB T		RH, percent	22	0	0	0	a				
Sian 80 End	~//	<u> </u>	N/A	23		0	0	٥	Ø			
with CT	YOUT SKETCH		Draw North Arrow	24					<del></del>			<u> </u>
Plume 30 25	20 15			1852	- ઇ	0	0	_ a		<del></del>		<del></del>
Sun + X Y	JV		$\Psi$	1255		0	۵	٥	<u> </u>			
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	X X			26	Q	0	0	Q				
	Emission	Point		27	اه	Q	o	Q.			٠	i i
				28	0	9	٥	0				C.S
	-			29					Ø			:;
	چر چ			30	0		Ω	0	Ψ			
				1332		0	0	0				
						WME (PF	•	, ,				- ()
	Observer's	Position		ORSED	VER'S S	IGNATII	<u>im F1</u> RE	eld		DATE		
						conf		,		5.	-//-	00
1	10*			ORGAL	NZATION	0				<u> </u>	<u>- '                                   </u>	<u>~~~</u> ;}
Sun Loca	llion Line			Envi	ronme	ntal	Qual	ity M	anageme			
ADDITIONAL INFORMATION	·			1	IED BY					DATE	20	A = 63
1st Helper-				ETA	===	===				12-	22-	92
	<del></del>			CONTI	NUED O	VEO F	ORM NU	MBER				

	, VI	SIBLE	EMISSION C	DBSER	NATIC	N FO	RM		No.		9
COMPANY NAME	<del></del>			OBSERVATION DATE				START	VE ,		
Kentucky Electric Ster	el, Inc.			555	1/2	100	<del>}</del>	6.	715	1/3	<del>Z</del> /
U.S. 60 West - Coalto	n	_		MEN	0	15	30	45		COMMENT	S
1				1	0	0	0	0	·		
CITY	STATE	\ Z	P	2	0	0	10	0	#1/2		
Ashland	KY		41102	3	0	0	0	10	4/2		
PHONE (KEY CONTACT) Plant (606) 929-1320 Guard	103-0340		20	4	0	0	0	0			
PROCESS EQUIPMENT			ING MODE	5	0	0	0	0	-		
Melt Shop	٦	On 1		<b> </b> -	<del></del>	<del>                                     </del>					<del></del> :
CONTROL EQUIPMENT	C		ING MODE	6	0	5	0	0	<u> </u>		
Harsell Baghouse					0	15	0	0	#3R		
DESCRIBE EMISSION POINT					0	20	0	0	34	•	
Baghouse Exhaust	· · · · ·	<u>-</u>		9	0	0	0	0			٠.
ļ ,	• • • • • • • • • • • • • • • • • • • •			10	0	0	0	15	46		
HEIGHT ABOVE GROUND LEVEL	HEIGHT RELAT			11	0	0	0	0	· · · · · ·	<del></del> -	
DISTANCE FROM OBSERVER	Start 25	RECTION FROM OBSERVER			0	0	0	<del>                                     </del>	<del> </del>		
Start 700' End 700'	Start NOTT			12	10	0	1	0	52		
DESCRIBE EMISSIONS		_		<del></del>		<del></del>	٥	0			
Start COFT   Start	End	- 		14	0	0	0	0	<u> </u>		
Sian Olange End	IF WATER DRO	15	0	0	0	0					
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED					0	0	0	0			
sun 5' to 10' Above Mounts	rend			17	0	0	ZO	G	LRN		
DESCRIBE PLUME BACKGROUND Stan TREES				18	0	0	0	10	ZLN		
BACKGROUND COLOR	End SKY CONDITIO	NS	<del></del>	19	0	0	0	0			
Statemen End	Stan Other		o V	20	0	0	0	0			<u> </u>
Sun 4-bout End	WIND DIRECTK		ROM	21	0	0	0	0	<del>                                     </del>		
AMBIENT TEMP	WET BULB TEA		RH, percent	22	0	0	0	0			
Sian 70 End	NA		NA_	23	<del>                                     </del>				<del> </del> -		
Stack SOURCE LAY	OUT SKETCH		Draw North Arrow	<del></del>	0	0	0	0		<u> </u>	<del></del> .
Plume X X	le.		<b>(1)</b>	24	0	0	0	0	<u> </u>		
Wind - X X X	r x lx	<u> </u>	, W 1	25	0	0	0	0			
	- 4 14 17	<u> </u>	†	26	0	0	0	0			
BAGH	ज्यऽङ			27	0	0	0	0			<u> </u>
	<u> </u>		1	28	0	0	0	0			
			€ W	29	σ	0	0	0		<del></del>	
				30	0	0	0	0	<del>                                     </del>		
i				CORE	DEDE	MALES /B					
1	Observer's Po	savon.		6	eor	40	74	פאב.	/e9		
	OBSE	HAFAZ	SIGNATO			_	DATE 5/12				
	w _			OFG	WIZATIO	rec	/ 7	and	2	P/12	(do_
Sun Loca	tion Line	***			=		_Qual	/ lity N	lanageme	nt	
ADDITIONAL INFORMATION	./ ,		1/-	CERT	IFIED BY					DATE	2/:
12T HELPER Town	tall/nr	zh,	Helf	ETA						13/2	9/00
MELTER		-	Į	соит	NUED C	N VEO I	ORM NU	MBER		1 1	

		VISIBLE EMISSION (	)BSEF	RVATIC	N FO	RM,	No. 2 OF 9			
COMPANY NAME  Kentucky Electric St	eal Tro			RYATION		. <del></del>	START	TIME 115	END TIME	
STREET ADDRESS	eer, Inc.		SEC					1		
U.S. 60 West - Coalt	on		197	l °	15	30	45		COMMENTS	იჰ 
			3	0	0	15	0	143 L		5 3
СПУ	STATE	ZIP	2	0	0	Ö	0			
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE ID I	41102	3	0	0	10	0	46		
(606) 929-1320 Guard	1	40-0020	4	0	0	0	O			— <u>"</u>
PROCESS EQUIPMENT		OPERATING MODE	5	0	0	0	15	54		
Melt Shop		On Line	6	0	0	0	0			
CONTROL EQUIPMENT Harsell Baghouse		OPERATING MODE On Line	7	0	0	0	0			
DESCRIBE EMISSION POINT		Va 41ac	-		0		0		<del></del>	
Baghouse Exhaust			<del>                                     </del>	0		0				—- <u>:</u> .
	·		•	0	0	0	0			<u>-</u>
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO OBSERVER	10	0	0	کر	0	#420		
75'	Start 25	1 End 25'	11	0	0	0	0		<u> </u>	
DISTANCE FROM OBSERVER		TA End North	12	0	0	0	<u>6</u>	ļ		
DESCRIBE EMISSIONS	I part > box	77 66 770114	13	0	0	0	0		·	
SIAN COFTING	End -	_/_	14	0	0	0	0			-
EMISSION COLOR Stand Laway End	IF WATER DE	OPLET PLUME  NA Detached D	15	0	0	0	0			-:
POINT IN THE PLUME AT WHICH OPA	16	O	0	0	O			•		
Sien 5' to 10' Above Mavi	17	0	0	0	0	·		<del></del>		
DESCRIBE PLUME BACKGROUND			18	0	0	0	0			
Stan TREES  BACKGROUND COLOR	End SKY CONDITI	IONE	19	0	0	0	U			— <u>"</u>
Sucollen End V		CONT END	20	0	٥		-			<u> </u>
SUN Y-6 4 TENS	WIND DIRECT	TION FROM	21	<del>-</del>		0	0			<del>5</del> *
AMBIENT TEMP	Start W	End PM, percent	` <b>-</b>	0	0	0	0			
Sun 70 End	NA		22	0	0	0	0	-	<del></del> -	<u> </u>
Stack SOURCE L	AYOUT SKETCH	Draw North Arrow	23	0	10	0	0	3R		
Plume	e.		24	0	0	15	0	34		
Sun + X	( <u> </u>	,, W	25	0	0	٥	0			<u>,</u> ,,
	<u> </u>	<del> </del>	26	0	0	0	5	42		
BAGH	louse		27	0	0	0	0			
		<del></del>	28	0	0	0	0	•		<b></b>
	1	$\leftarrow \omega$	29	15	0	0	0	25L		
		-	30	0	0	0	0		<del> </del>	<u>.</u>
	1			RVERS	WME (PI	UNT),	<del></del>	1-11		٤,
_	Observer's P	Osition		eoy RVEA'S			الحدو	168	I DATE :	<u>:</u> -
	140*	_		Ses	اع	,,	reley	•	S/12/00	ř
	Cation Line			NZATIO			7			 
ADDITIONAL INFORMATION			Env:	LTONE	<u>ental</u>	Qua1	ity N	<u>lanagemer</u>	CATE	
1st HELPER Jun	theel h	berly Hall	ETA						3/29/0	<u>o</u> (
MELTER Bruc	e mm	0	CONT	NUED O	N VEO F	ORM NU	MBER			丁

MELTER Jun Hall Wordy Hell

ADDITIONAL INFORMATION

Environmental Quality Management
CERTIFIED BY

DATE

ETA

CONTINUED ON VEO FORM NUMBER

3/29/00

			VISIB	LE EMISSION	OBSE	RVATK	ON FO	MA		No	5 OF 9	_
COMPANY NAME			_		OBS	ERYATIO	N DATE	<u> </u>	START	TIME	END TIME	
Kentucky Elect	ric Ste	el, Inc.			SE	112	100		0	715	1121	
U.S. 60 West -	- Coalto	n_					15	30	45	l	COMMENTS	
					1	0	0	0	0			
CITY		STATE		20P	1 2	1	0	0	0			
Ashland PHONE (KEY CONTACT)		KY	1	41102	1 -	0	0	0	0	<del> </del>		
(606) 000 1000	Plant Guard	103-03		-	11-	0	0	0	0	<del></del>	<del></del>	
PROCESS EQUIPMENT				ATING MODE	1 5	0	0	0	0			
Melt Shop				Line	] -	0	0	0	0			<del>.      </del>
Harsell Baghous	ie.			ATING MODE Line	<del>  ,</del>	0	0				· · · · · · · · · · · · · · · · · · ·	
DESCRIBE EMISSION POW			, ,,,		<u> </u>	<del> </del>	<del>-</del> -	0	0	#3 L		
Baghouse Exhaus	t				<del> </del>	5	0	0	0	1,27		
<b>{</b> .					11	0	0	0	0			
HEIGHT ABOVE GROUND L	EVEL.	HEIGHT REL	ATIVE T	O OBSERVER	10	0	10	0	0	42		
DISTANCE FROM DESERVE	-	Start 25		end 25'	<u>   "</u>	0	0	0	0			
	?00'	DIRECTION I		End North	12	0	0	0	0			
DESCRIBE EMISSIONS					13	0	0	0	0			
EMISSION COLOR	19	End C			14	0	0	0	0			
I Star Storice End L	/	IF WATER DI	N	4	15	0	0	0	0			
POINT IN THE FLUME AT W	HICH OPACI	TY WAS DETE	RMINED	· Detailed ()	16	0	0	0	0			
sun 5' to 10' Ab		End			17	0	0	0	0			
DESCRIBE PLUME BACKGA	OUND	End L			18	0	0	15	0	#3LN		
BACKGROUND COLOR	/	SKY CONDIT	IONS		19	0	0	0	0			
Stan Buch End		Starto XLLA			20	0	0	0	0			
Stan 6-8 ANH End		Start W		and V	21	0	0	0	0			
Stan 72 End 4	/	WET BULB TO	EMP	RH. percent	22	0	0.	0	0	<u>-</u>		
				NA	23	0	0	0	0			
Stack Stack Plume	N SA	PUT SKETCH		Draw North Arrow	24	0	O	O	ŏ			
Sun +	X		_		25	0	0	0	0			
wnd -	K X	X		]	26	0	0		0			
	BAGHO	use			27	0	0	$\frac{\mathcal{L}}{\mathcal{L}}$	0			
<u> </u>	1			٠ لـ	28	0	0	$\frac{\mathcal{L}}{\mathcal{L}}$				·
1	j				29	0	0	0	0			
	1		<		30	10		0	0	15/2 D		
Į.	- 1			1			0		0	₩3 R		
•	i	Observer's P	Osition		G	EOY	MME (PR GC	INTI /	NSI	100		
1	$\overline{}$	>			1000	-	-	<b>~</b> `\			S/12/00	
		,			ORGA	DES. NIZATION	<u>مر</u>	Her	ull	7	5/12/60	<u>1</u>
	Sun Local	on Line	<u> </u>		Envi	ronme		Qual	ity M	<u>anagemen</u>	t	
ADDITIONAL INFORMATION	الم ند		) m : 4	2 4.80	CEATI	FIED BY		<u></u>			DATE .	
NEUTER	D.	~~ u	JOUR	yttee	=						3/29/0	<u>~</u>
MELTER	Bru	e ma	de 1	, ,	CONTI	MUED O	VEO FO	AUM MAC	ABER		1 1 1 1	1

		•	VISIBL	E EMISSION	OBSEF	RVATIC	N FO	RM		No.	9_OF 9_
COMPANY NAME	Electric Ste	al Inc			OBSE	FIVATION 5/12	DATE	` <del></del>	START	TIME 715	END TIME
STREET ADDRESS					<b>SEEC</b>	0	15	30	45	1	COMMENTS
U.S. 60 We	est - Coalton	n			1001					<b> </b>	COMENTS
CITY		Lasian	,		-	0	0	0	0	<del></del>	
I Ashland		STATE	İ	<b>22P</b> 41102	2	0	0	0	0		
(606) 929-13	I TOUL	SOURCE ID			3	.0	0	0	0		
PROCESS EQUIPME		103-03			1	0	0	0	0	-	
Melt Shop	Elet:	,		TING MODE	5	Q	0	0	0		
CONTROL EQUIPME			OPERA	TING MODE	6	0	0	0	0	ang	0/24 = 0%
Harsell Ba			On	Line	7	<u> </u>				and K	
Baghouse Ex					•	<u> </u>					···
<u>Dagnouse m</u>	Anadot		<u> </u>		•						<u> </u>
HEIGHT ABOVE GR	OUND LEVE	HEIGHT BEI	1700 70	O OBSERVER	10						
1 75				and 25	11						
DISTANCE FROM O	End 700	DIRECTION			12						
DESCRIBE EMISSIO		Start NAT	74	ins North	13						•
Stan Zio		End /	<b>/</b> .	•	14				_		
EMISSION COLOR		IF WATER D			15						
Stan Mone	ME AT WHICH OPACT	Attached IT	ANNED	Detached D	16						
Stan 5 to 10	o' Above Movits	End			17						
DESCRIBE PLUME I					18					<u> </u>	
BACKGROUND COL		End SKY CONDIT	YW6	·····	19						····
Sun Green		Sun Scal		ind V	20						
WIND SPEED	18m 1/	Start SU		ROM	21						<del></del>
Stat 10-(2+p#	ENG	WET BULB T	EMP	RH, percent	22						<del></del>
Stan 84	End	NA		N4	-		7	-			
Stack with	SOURCE LAY	OUT SKETCH		Draw North Arrow	23		<del> </del>				
Plume Sun +				<b>(†</b> )	24				-	<u> </u>	<del> </del>
Wind -				7 W	25	-					
	7			7	26						
·	BAGHO	<i>चडह</i>			27						
				SW	28		i				
i					29						
					30						
					OBSE	RVER'S I	WHE (PI	PINTIFE		/ 11	
	لر	Observer's (	Position		OBSE	EOY RVPAR	90	PE //	ישעב	<u>/⊂</u> /	I DATE
<u> </u>		0.				Sca	96	REJer	Ley	<b>,</b>	5/12/00
	Sun Local	tion Line		<b>&gt;&gt;</b>	TORGA	NIZATION	1		- 1		
ADDITIONAL INFORM				, ,	CERT	FIED BY	<u>ental</u>	Qual	1ty M	anagemer	DATE
1ST HELPE	e Jim	Hell	Um	ly Hill	ETA				<del>-</del>		3/29/00
MELTER	Bu	us mi	mil	•	соит	INUED O	N VEO F	ORM NU	MBER		

								110.		-		
COMPANY NAME				RVATION			START	TIME 2/8	ENC	TIME		_
Kentucky Electric Ste	el, Inc.		SEC	1	100	1	10	18	L		<del>_</del>	
U.S. 60 West - Coalto	n		LEDY	0	15	30	45		COMM	ENTS		
	<del>-</del>		1	0	0	0	15	#1R				
СПҮ	STATE	ZP	1 2	0	0	0	0				<u> </u>	
Ashland	KY	41102	] 3	1_	0	0	0	<del>                                     </del>				
PHONE (KEY CONTACT) Plant	SOURCE ID		]	$\mathcal{O}$	<del> </del>		<del> </del>	<u> </u>				—
(606) 929-1320 Guard	1 103-03	40-0020	₹ ├──	0	0	0	0	<del></del>				_
PROCESS EQUIPMENT Melt Shop		OPERATING MODE On Line	5	0	0	0	0			<del></del> -		
CONTROL EQUIPMENT		OPERATING MODE	6	0	0	10	0	3Ra	us-	25/24	= ].	04
Harsell Baghouse		On Line	7	0	0	10	0	3 _	0		,	
DESCRIBE EMISSION POINT			1 .	0	0	0	0					
Baghouse Exhaust		·			0	0	<del> </del>	4R				
				0	<del></del>		10	7/			_	_
HEIGHT ABOVE GROUND LEVEL	HEIGHT REI	ATIVE TO OBSERVER	10	0	0	0	0					
757	Sten 25		11	0	0	0	0					
DISTANCE FROM OBSERVER	1	FROM OBSERVER	12_	صع ا	0	0	0	54au	in 4	124=	1.67	19
Start 700' End 700'	Sten Nov	TA End North	13	0	0	Ó	0		0		<u>-</u>	
DESCRIBE EMISSIONS	- /		1 14	0	0		Ó					
Stan LUFTING EMISSION COLOR	End L	ROPLET PLUME	15	<del>                                     </del>	0	<del></del>						
Stan Classe End	Allached (1)	NA Detected D		0	<del> </del>	0	0	<u> </u>				
POINT IN THE PLUME AT WHICH OPACE	TY WAS DETE	RMINED	16	0	0	0	25	4 RN				
sun 5' to 10' Above Movito	<u>YEnd</u>		17	0	0	0	Ó					
DESCRIBE PLUME BACKGROUND			18_	20	0	0	0	3 LNQ	سوكر	15/24.	=1.8	89
Sign TREE5 BACKGROUND COLOR	SKY CONDITI	TONS	19	0	0	0	0		Ŏ			
Stan Green End		levareno V	20			0	0				<del></del>	
WIND SPEED	WIND DIREC	TION FROM		10	<u>ت</u>							
Stan 8-10-04 End	Start 50		21	0	0	0	0					
AMBIENT TEMP	WET BULB T		22	0	0	0	0					_
			23	0		0	0					
with C	OUT SKETCH	Draw North Arrow	24	0	0	0	10	1 Rau	ra L	1292	0,42	<u>_</u> '2
Sun + XX		<b>(†</b> )	25	0	0	O	0		<del>)</del> -			عت
Wind — X X X	χ	X X		<del></del>				14				—
7 2 2 1			26	10	0	0	0	<del>, _</del>				
BAGHO	USE		27	0	0	0	0					
	•	,5W	26	0	ے	0	0					
Į l	1		29	0	0	10	0	3 R	•			_
1			30	0	0	1	30	360	we &	6/24	1.6	<u> </u>
			C0055	RVER'S	JALAE 70	PINED .			3	<i>10-</i> T ·		_
	Observer's F		6	COY	400 (F)	```''!\{	2NSI	/e9				
		Opinion .	1	RVER'S	GNATU	RE //			DATE	1 3		_
					250	te	uslei	7	5/	12/0	50	
Sun Loca	<u>- (1)</u>		11	NIZATIO		01						
				FIED BY	<u>ental</u>	Qual	ILY M	anagemer	DATE		<u></u>	
ADDITIONAL INFORMATION 10THELPER June 1	hel m	only Hell	ETA	-					3/	<u> 29/</u>	00	
MELTER Bune	e ma	ore	CONT	INUED O	N VEO F	ORM NU	MBER				$\prod$	

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HEIGHT ABOVE GROUND LEVEL HEIGHT RELATIVE TO OBSERVER Start 251 End 25 DISTANCE FROM OBSERVER DIRECTION FROM OBSERVER End 700'

Sun 700'

10T HELPER

MELTER

DESCRIBE EMISSIONS COFTING Start IF WATER DROPLET PLUME EMISSION COLOR Stan Colange End Atteched 17 NA Detached [] POINT IN THE PCUME AT WHICH OPACITY WAS DETERMINED sun 5' to 10' Above Movitorens

SIAN NOTTH END NOTTH

DESCRIBE PLUME BACKGROUND Sien TREES End BACKGBOUND COLOR SKY CONDITIONS Stan Quey End L Starteur End WIND SPEED WIND DIRECTION FROM Start (U-(Zingthi V Start 5 W End U AMBIENT TEMP WET BUILD TEMP RH, percent

Stan 85 NA N4 End Stack SOURCE LAYOUT SKETCH Draw North Arrow Plume Sun Wind

BAG HOUSE

Observer's Position

Sun Lecation Line

1401

ADDITIONAL INFORMATION

OBSERVER'S NAME (PRINT) / LEWS/ey OBSERVER'S SIGNATURE DATE 5/12/00

OFGANIZATION

CONTINUED ON VEO FORM NUMBER

Environmental Quality Management DATE

**ETA** 

3/29/00

END TIME

0/24 =0%

0/24=0

00110110	·								140.		
COMPANY NAME  Kentucky Electric Stestreet Adoress		11 :		N DATE	<u>ه</u>		TIME 218	ENO TIM	E		
U.S. 60 West - Coalto	on			SEC		15	30	45		COMMENT	5
				11	0	0	0	0	1	<del></del>	
СПУ	STATE		ZP	2	0	0	0	0			
Ashland PHONE (KEY CONTACT) Plant	KY SOURCE IO		41102	3	0	0	0	0			<del></del>
(606) 929-1320 Guard	103-03			11	0	0	0	0			
PROCESS EQUIPMENT			ATING MODE	1 5	0	0	0	0	<del>                                     </del>	<del></del>	<del></del>
Melt Shop			Line	] -	0	0	0	0	Cura	0/21-	CA
CONTROL EQUIPMENT Harsell Baghouse		1	ATING MODE Line	-	0	0	0	<del></del>	ang .	0/24=	0 %
DESCRIBE EMISSION POINT		011	DINC	;		<del>                                     </del>		0	-	<del> </del>	
Baghouse Exhaust					0	0	0	0	<del> </del> -	<del></del>	
				<u>                                     </u>	0	0	0	0			
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE 1	O OBSERVER	10	0	0	0	0			
75'	Start 25		End 25'	"	0	0	0	0		<del></del>	<del></del>
DISTANCE FROM OBSERVER	DIRECTION I		observer End North	12	0	0	0	0	are c	<u> クリニ</u>	02
DESCRIBE EMISSIONS			23,777	1 13	0	0	0	0			· 
Stan none	End _			14	0	0	0	0			
EMISSION COLOR Stan None End	IF WATER DI		A.	15	0	0	0	Ó			
POINT IN THE PLUME AT WHICH OPAC	TY WAS DETE			16	0	۵	0	0			
sun 5' to 10' Above Mounts	FEND			17	0	0	٥	O			
DESCRIBE PLUME BACKGROUND Sun TREE5	- 1/			18_	0	0	0	0	aug o	1/24=0	2
Sun TREES BACKGROUND COLOR	SKY CONDITI	ONS		19	0	0	0	O	- 3		<u> </u>
sun Guen End	suncette		End C	20	0	0	0	0			
WIND SPEED	Start 5		FRUM End	21	0	0	0	0			
Sian 10-12-1500	WET BULB TI		RH, percent	22	0	0	0	0			
Stan 87 End	NA		N4	23	0	0	<u></u>	0			<del></del>
with CI	OUT SKETCH		Draw North Arrow	24	0	0	<del></del>		a. 0	/- ( - 4	<del></del>
Plume Sun -			<b>(†)</b>	25		0			en º/	24=0	6
Wind -				26	0		$\frac{\circ}{2}$	9	<del></del> _		
BAGH	بسر سرده		j l	<b> </b>	0	0	0	0			
DAGAE		-	$\int \omega$	27	0	0	9	9		<del></del>	
				28	0	0	0	0			
			1/-	29	0	0	0	9		<del>,</del>	·
				30	0	0	0	<u>_</u>	aug o	24ZC	19)
	,		]	OBSE	VER'S N	WME (PR	int)/e	1151	100		
	Observer's P	Osition		OBSE	EVER'S 8	GNATUR	Œ "	/	<u> </u>	DATE	·
	o /	\			De	nge		ena	ly	S/1	2/00
Sun Gea	lion Line		->	1 -	NIZATION		Ou = 1 +	itu M	anagemen	+	
		CERTI	FIED BY	neal.	Angri	- L y 111	enakemen	DATE			
1st HELPER fruit	By Hell	ETA		·				3/29	100		
MELTER Bu	us ma	crp		СОИТ	NUED O	N VEO FO	ORM NUM	BER			T

										140.		<u> </u>	
COMPANY NAME			· .	<del></del>		RVATIO			START	TIME	END	TIME	E:
Kentucky Electr	ic Stee	1, Inc.			SEC	<u>//2</u>	100	<u> </u>		218	ᆜ		
U.S. 60 West -	Coalton	<u> </u>			MIN	0	15	30	45		COMM	ENTS	8, 4
					•	0	0	0	0				
CITY		STATE		ZIP	2		0	0	0				
Ashland		KY		41102	3	0	0	0	0				p£0
((0() 000 000	Tant	SOURCE ID I		•	<del> </del>	<del></del>	<del> </del>	╁	<del>                                     </del>	<del> </del>			
	uard_i	103-03			1	0	0	0	0	ļ			<i>د</i> د
PROCESS EQUIPMENT Melt Shop				TING MODE	5	0	0	0	0	<u> </u>			
CONTROL EQUIPMENT				TING MODE	6_	0	0	0	0	ang a	1/24	209	8 -
Harsell Baghouse			On	Line	7	0	0	0	0			•	
DESCRIBE EMISSION POINT			-1			0	0	0	0				
Baghouse Exhaust	<u> </u>		<u> </u>		9	0	0	0	0		<del></del>		<u>,, , , , , , , , , , , , , , , , , , ,</u>
					10	0	0	0	0			···-	
HEIGHT ABOVE GROUND LEV		HEIGHT REL			11	<del>-</del> -	<del>                                     </del>	1	<del> </del>	<del></del>		<del></del>	
DISTANCE FROM OBSERVER		Start 25 DIRECTION F		ind 25'	-	0	0	O	0			- <u> </u>	
Start 700 End 7				end North	12	0	0	0	0	any	0/2	-4 = c	<u> کی                                    </u>
DESCRIBE EMISSIONS					13	0	0	20	0	4RN		•	
Stan COFTING		nd 2	-		14	0	0	0	10	3LN			
EMISSION COLOR Stan Oleman End		IF WATER DR Attached ! 1			15	0	0	0	0				
POINT IN THE PLUME AT WH	CH OPACITY	WAS DETER	IMINED	Cetached D	16	0	0	0	0				
Stan 5' to 10' Abou	re Movitore	ind			17	0	0	٥	0				<del></del> -
DESCRIBE PLUME BACKGRO	UND				18	0	0	0	0	aug 3	0/24	= 1.3	259.
SIAN TREES  BACKGROUND COLOR		SKY CONDITION			19	0	0			- C	70-	<u> </u>	<u>-770</u>
surfacen End		Stan Zalla							<u>G</u>		<del></del> -		<u>.</u> š.á
WIND SPEED	,	MND DIRECT	ION /	RUM	20	وي	0		0	<i>C</i> : .			<del></del>
SUN 8-10-4 HEND		sun 5U		nd U	21	0	0	15	٥.	#18			<u>.</u> .
Sian 88 End -	/  ˈ	MET BULB TE	MP	RH, percent	22	0	0	0	0				
Stack SO	URCE LAYO	IT SKETCH	-	Draw North Arrow	23	0	0	0	0				- F.
Plume	N Side	t a z i a i		<b>A</b>	24	0	0	0	0	Rug 13	5/24 3	=0,6	39
Sun +	XX			, W 1	25	0	0	0	0				
Wind - X		×	X	]	26	0	15	0	0	3 R			· ·
B	RAG Hou	156			27	0	0	Ü	0	<u> </u>			<del></del>
<del>\</del>		<del></del>		Sw	28	0	0	(3	0				<del></del> , ·
				/	29	0	0	10	0	40			
	- 1				30		0	<i>'</i> 0	<u>ත</u>	aug.	25/20	- 1/	100
						$\mathcal{L}_{\mathbf{L}}$			$\subseteq$	ang	100 7	2 / 10	47a.
	1	Observer's Po	ert.o.	l	G	POY	ame (Pf FC	INT)/e	WS/	6 Y			r :
_	~	<b>&gt;</b>	IUN	ļ	OBSER	iverio s	ICHA I ON	1E //		-	DATE	/	<del></del> }
	Q140°	/ <b>\</b>				sei	_ <i>/</i>	14	rue	ay .	5	12/	00
<i></i>	Sun Locatio	n Line	:	->-	1	IZATION		Ouele	{ p M.	( anaca===			; t
ADDITIONAL INFORMATION						FORME	<u> </u>	Qual.	LLY M	anagemen	DATE	, ,	لمُ
MELTER Sun Hall work Hell					ETA						3/	29/0	10
MELTER /	Sence	near	1		CONTI	IUED ON	VEO FO	ORM NUM	ABER		T	TI	丁。

### VISIBLE EMISSION OBSERVATION FC 1

No. 5 OF /

	,								110.				
COMPANY NAME				OBSE	RVATION	DATE Z/O		START	TIME	EN	TIME		
Kentucky Electric Ste	el, Inc.				5//	2/0	0						
STREET ADDRESS U.S. 60 West - Coalto	n			SEC	0	15	30	45	<u> </u>	COMM	ENTS		
				1	0	0	0	0					
СПУ	STATE		DP .	2	0	0	O	0					
Ashland	KY		41102	3	×	0	0						_
PHONE (KEY CONTACT) Plant	SOURCE ID				$\frac{0}{\lambda}$			<u></u>					
(606) 929-1320 Guard	103-03	<u>40–00</u>	20	1	0	0	0	0_					_
PROCESS EQUIPMENT			TING MODE	5	0	0	0	0					
Melt Shop CONTROL EQUIPMENT			Line	6	0	0	0	0	any o/	74.	= 0	20	
Harsell Baghouse	ļ		Line	7					0				
DESCRIBE EMISSION POINT													
Baghouse Exhaust				9	<del></del>			_	<del> </del>				
	. · · .						<del> </del> -	<del> </del> -					_
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	TIVE TO	ORSERVER	10		ļ	<u> </u>		ļ				
75	Start 25		no 25'	11									
DISTANCE FROM OBSERVER	DIRECTION F	ROM OB	SERVER	12	İ		ł						
Start 700' End 700'	Start NOT	TH E	ne North	13									
DESCRIBE EMISSIONS		/		14			<del></del>						
Start MONE EMISSION COLOR	End V	OPLET I	PLUME	15	$\vdash$		_						
Start World End	Attached [7		4	-	<b> </b>	<del> </del> -			<del> </del> -				_
POINT IN THE PLUME AT WHICH OPAC	TY WAS DETE	RMINED		16	<u> </u>		ļ						
sun 5' to 10' Adove Mount	End			17	<u> </u>								
DESCRIBE PLUME BACKGROUND	•/			18									
SIAN TREES BACKGROUND COLOR	SKY CONDITI	ONE		19									
Sug our End	Star Scale		na 🗸	20	_		-					_	
WIND SPEED	WIND DIRECT	TION >		<b>-</b>			<del> </del>	-		_			
Stan 10-1 Zand End	Start 50		RH nement	21	<u> </u>								
AMBIENT TEMP Stan 80 End	NA		NA Dercent	22	<u> </u>								
		::		23			<u> </u>	<u> </u>					
with	YOUT SKETCH		Draw North Arrow	24					·				
Plume Sun +			<b>(T)</b>	25									
Wind -			1 <b>°</b> i	26			-						_
	_		1	<b> </b>	├	-		-					
BAGH	0USE	_	500	27	<b> </b>	_	ļ	ļ					
				28	<u> </u>								_
	İ			29	l			1	1				
				30									
	i			OBSE	DVED'S	NAME (P	RINT	ens.					
	Observer's	200000		6	eor	40	14	ens	leγ				
		Jenion		OBSE	HVER'S	SIGNATU	HE,	/		DAT	/12	/.	
	40"	\				251	N	rist	<u>5</u>	7	1/2	100	<u>)</u>
	ation Line			l l'	NIZATIO		Onal	litu N	lanagemen	t			
	,				IFIED 8Y		- Qua.	LLLY I	Ecmell	DAT	E,		
ADDITIONAL INFORMATION 19THELPER	Hill	ETA						3	29	100	<u>-</u>		
MELTER Bun	y ma	oné	•	СОИТ	NUED C	N VEO F	ORM NI	MBER					1

No. 6 of 9

		_								. <u>12.05</u>	
COMPANY NAME	-1		1	I I -	RVATION	-		START		END TIME	F.3
Kentucky Electric Ste	er, inc.			SEC	-/2 -	90		14.	<del>(</del>	1459	
U.S. 60 West - Coalto	ינו			MON	0	15	30	45		COMMENTS	
8.3. do west Courts	···			}					,	<del></del>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
				1430		ହ	Q	0	Beglon	/e	
СПУ	STATE		ZIP	2	٥	اه	a	. 0			
Ashland	KY		41102	3			C	0		<u> </u>	/; ~; ~; ·
PHONE (KEY CONTACT) Plant	SOURCE ID					- 0		<u> </u>		<del></del>	<u></u> :
(606) 929-1320 Guard	103-03	40-00	020	1	0	2		0			
PROCESS EQUIPMENT		OPER	TING MODE	5	0	Q	0	0	Ø		
Melt Shop			Line	6.						<del></del>	<del></del> .
CONTROL EQUIPMENT		ŀ	LTING MODE	14 25	0	. 0	9	-			
Harsell Baghouse		0n	Line	WEL	٥	0	٥	6			
DESCRIBE EMISSION POINT		-		8	0		0	0			
Baghouse Exhaust						0				<del></del>	
	•				C	0	_ 0	0		<del></del>	
	·			10	0	0	0	0			ž.
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE T	O OBSERVER	11					ø		
DISTANCE FROM OBSERVER	Start 25	06:44	End /	 	0	9	_0	a	Ø		<u>—</u> ;
Start 700 End				1421	0	0	<u> </u>	<u>a</u>			·
	Start Nor	<u> </u>	eno V	14/32	0	0	اه	0			
DESCRIBE EMISSIONS	_			14						<del></del>	
Stan Lofry EMISSION COLOR	End Non	<u>e</u>			٥	0		15			
EMISSION COLOR	# WATER OF	OPLET	PLUME	15	0	0		0			
EMISSION COLOR Stant Crang End N/A POINT IN THE PLUME AT WHICH OPACE	Attached 17	<u> </u>	Detached []	16							7.1
Sign 10 out + above maying	End	-winen		1	9	-	c	-	121	<del></del>	<del></del> ·
<del></del>	- 510			17	0	•	0	٥	12/24=	0.63%	<u> </u>
DESCRIBE PLUME BACKGROUND				1432	o	e	ol	0			<b>F</b> * T
Start Trees BACKGROUND COLOR	End C		·	7				-			
	SKY CONDITI	-		1438	- 0	- 0		_ 0			
StanGerce End W	Sun & H.	CALLE CON	ing -	20	_ 0	اه	0	a			æ.
Stan 7- 15 MPH End	Stan Source		· · · · · · · · · · · · · · · · · · ·	21							
AMBIENT TEMP	WET BULB TE		RH, percent			- 0	-9	- 9			
Stan 85-90 End	NIA		NIA	22	0	9	_0	9			
				23		اه	اه	٥	Ø		5 7 1 1
with CI i	OUT SKETCH		Draw North Arrow	24	i				<del>/</del>		<u></u>
Plume				1.466	0	-0	의	_ 0			
Sun +			$\Psi$	W44		_ e ]	a				•
	×			26							
		air 1	ļ		-9	<del></del>	-0				<del></del>
	Emission P	UINI	ì	27		اه ا	e	_0			
			j	28	9		0				<b>ن</b> ــــــــــــــــــــــــــــــــــــ
			ĺ	29					~	<del></del>	
	7	•		<del>                                     </del>	<del>9</del>	2	<del>- 이</del>	-0	φ		<del></del> ′ ·
	150	,	Į.	1489	Q	٥	۰	0			4.3
				OBSER	VER'S N	AME (PRI	NT)				
į	Observer's P	OSition .		Br	4an	Bru GNATUR	m Fi	eld			1.
			Į	OBSER	VER'S S	GNATUR	E	<u></u>	<del></del>	DATE	
	, , , , , , , , , , , , , , , , , , ,		Ì	Bon	m K	ufo	12			5-12-00	ı
<u> </u>	- - — — — —		<u> </u>	ORGAN	IZATION	V					
Sillicon	tion Line			Envi	ronme	ntal_	Quali	ity M	nageme		ني ا
ADDITIONAL INFORMATION			<del></del>	CEATIF	ED BY					DATE	
1st Helpur-				ETA						3-22-	<u> </u>
Melter-				COMM	HIEU O	VEO FO	041 411 14	1060			<b></b> ;
Malter-			ı	I COM III	,,L,		THE NUN	IDEL		1 1 1	- 1

COMPANY NAME					PVATION			START		END	TIME	
Kentucky Electric Ste	el, Inc.	<del></del>			12-	90		143	10	15	77	
STREET ADDRESS U.S. 60 West - Coalto	n			SEC	0	15	30	45		COMME	ENTS	
				14'50	0	0	9		Basherse			
CITY	STATE		ZIP	2				9	2277.4475			
Ashland	KY		41102	]-			0					
PHONE (KEY CONTACT) Plant	SOURCE IO	NUMBE		]	9	- 0		2	<u> </u>			
(606) 929-1320 Guard	103-03	<u>40-0</u>	020	1	Q	0	Q	q				
PROCESS EQUIPMENT			ATING MODE	5	Q_	0	0	0	Ø			<u>.</u>
Melt Shop			Line	1455	0		9	0				
CONTROL EQUIPMENT Harsell Baghouse		1	ATING MODE Line	1 -				0				
		<u> </u>	DINC	1./51	0		0	<u>-</u> _				
DESCRIBE EMISSION POINT				11	0	<u>a</u>	0					
Baghouse Exhaust				1 .	0	٥	۵	Q				
	· 	·		10	o		0	0				
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE	TO OBSERVER	11	9	0	Q	Q	0			
DISTANCE FROM OBSERVER	DIRECTION	FROM (	DASERVER	12				.0				
Start 700' End	Start No			1997	0		0				<del></del>	
DESCRIBE EMISSIONS		-		132	0	0	a	0				
Start None	End V			] [ 14	0	0		0				
EMISSION COLOR	IF WATER D			15	Q	0	Q	Q		_		
Start W/A End POINT IN THE PLUME AT WHICH OPAC	Attached 17	N//	9 Detached C	16	6	ا	. 0	0				
Start Same	End DE I			17			۵		Ø			
DESCRIBE PLUME BACKGROUND				·   -	0				Ψ			
Sun Same	End (			1383				0				<del></del>
BACKGROUND COLOR	SKY CONDIT	_		1328	9		0	0				
Sun Save End	Start Se A	and	End -	20	٥	ام	۵	م				
WIND SPEED Start 7-15 End	Start 5 W		End /	21	9	0	0	g				
AMBIENT TEMP	WET BULB 1		RH, percent	22		1.						<u> </u>
Sian 85-90 End	NI	4	NIA	<b>                                     </b>	٥	0	0					
Stack SOURCE LAY	YOUT SKETCH	<del></del>	Draw North Arrow	23		<del>  </del>	9	0	0			
with Plume				13273	0		0	٥				
Sun 💠			$\mathbf{\Phi}$	25	o	0	0	ے ا				
Wind				26	Q		9	0				
	X Emission	Point		27				<del></del>				
<u> </u>	T			]	Q	0		0	<del></del>			
				28	၅	- 0		- 0	<del> </del>			<del></del>
	į			29	0	0			Ø			
	ļ			30	0	اما	٥	Q				
						NAME (PI						
·	Observer's	Positio	n	B	1491	BC SIGNATU	um F.	ield				
	<b>\</b>			OBSE	AVER'S 7	SIGNATU	RE 	7/		DATE		
	40		_	ORGA	NIZATIO	A.	wy			<u> </u>	-/2	.00
Sun Loca	tion Line			Env	iron	ental			lanagement	<u>t</u>		
ADDITIONAL INFORMATION				CERT	IFIED BY	!				DATE		
1st Helper -				ETA						<u> </u>	<u>-                                    </u>	-00
1st Helper - Melter-				CONT	INUED	ON VEO F	ORM NU	MBER		$\Box$		IT
Melter-				$\Pi^{-1}$						1 1	1	1

COMPANY NAME				OBSER	NATION	DATE		START	THAE	END TIM	Œ.
Kentucky Electric Ste	el, Inc.			15.	12-9	0		15	20	15	50
STREET ADDRESS U.S. 60 West - Coalto				SEC	0	15	30	45		COMMENT	s
0.5. 00 West - Courte	<u>"</u>			120	a	a	Q	0	Paghore		
	STATE			2					700.0	<del></del>	
СПУ	KY	1 -	41102	1	0	9	0				
Ashland PHONE (KEY CONTACT) Plant	SOURCE ID N		41102	3	0	0	٥	Q			
(606) 929-1320 Guard	103-034		20	4	0	0	0	Q			
PROCESS EQUIPMENT		OPERAT	ING MODE	5	0	0	9	0	Ø		
Melt Shop		On	Line							<del></del>	<del></del> .,-
CONTROL EQUIPMENT			ING MODE	1325	9	- 0	<u> </u>		<del> </del> -	<del></del>	
Harsell Baghouse		0n	Line	1516	9	0	0	0			<u> </u>
DESCRIBE EMISSION POINT				8	. e	0		_ Q	<u> </u>		
Baghouse Exhaust					0	a	Q	0			
·	÷			10					<u> </u>		
HEIGHT ABOVE GROUND LEVEL	HEIGHT REU		OBSERVER	<del>- 1</del>	Ð	- 0		<u>.</u>		- <del></del>	<del></del>
75'	Sten 25		nd 1/	''-	0	0	0	0	Ø		<del></del> .
DISTANCE FROM OBSERVER Start 700 End	DIRECTION F			182	ο	0	0	4	<b></b>	<del></del> -	<u></u>
	50n /V 0/	/ ^ E	no v	130	0	a	o	٥	<u> </u>		
DESCRIBE EMISSIONS	Em 1.6		}	14	Q	0	0	٥	1	•	
Start None EMISSION COLOR	IF WATER DE	OPLET I	PLUME	15	0	9	٥	O			
Start N/A End Orange POINT IN THE PLUME AT WHICH OPAC	Attached 17	N/A	Detached D	16							<del></del>
POINT IN THE PLUME AT WHICH OPAC	ITY WAS DETEI	RANNED		17	- 0	0.	_ 0	0	~	<del></del>	<del></del> , .
DESCRIBE PLUME BACKGROUND				}	0	0	0	0	Ø		
	End		İ	1537	O	a	٥	0		<del></del>	<u></u>
Stan Same BACKGROUND COLOR	SKY CONDITI	ONS		139	0	0	0	0			4.2
Standard End	SIN SEAL	EASE	nd	20	0	0	0	9			**
WIND SPEED	Start SW		nd	21	0						
Stan ) -/ S MOSTEND			RH, percent	22		0	Q	~ /	<del> </del> -		<del></del> _
Stan 85-90 End	NIF	}	NIA	<b> </b>	Q		. 0		201		
Stack SOURCE LA	YOUT SKETCH		Draw North Arrow	23	Q	_ 0	0	0	2/24=	1.049	<u> </u>
Plume				1583	a	ام_				<del></del>	<del></del>
Sun -			$\Psi$	25 11 7 9	0	ام	Q	Q			
WindX				26	9	0	0	0	1	<b>.</b>	,.
	X Emission F	oint		27				. 0			<del></del>
ļ ————	r			28	<u> </u>	9	Q		<b></b>		<del></del> ;
				<b>}</b>			<u></u>	Q	~		
		SW		29	0				0		<del></del> ·
	/	مدري	8	7250	Q	Q	0	0	L		
	[		j			AME (PF				<del></del>	<u>;</u>
i	Observer's F	Position		18	490	BC L	in Fi	eld			
	<b>&gt;</b>			OBSE	aver's s O	IGNATUI	とこ			DATE	10
, ,	40.		_	0964	NIZATION	13/				12~/	12-01
Sun Loca	rion Line			· '			0003	ito N	lanageme	nt	4
ADDITIONAL INFORMATION				CERT	FIED BY	-uLd1	yual	LLY I	ageme	DATE	
1St Holder				ETA						<u> </u>	12-00
1st Helper-		_		CONT	NUED O	N VEO F	ORM NU	MRED		TT	
Malter-				Jun''	., Y	·······································		musen		1 1	1 1 1

									NO.		05 -	<b>-</b>
COMPANY NAME				1 1	RVATION			START	_	ENO	TIME	
Kentucky Electric Ste	el, Inc.				<u>-19-</u>	99		15	59	$\perp \perp$	620	
				SEC	0	15	30	45		COMM	ENTS	
U.S. 60 West - Coalto	n			MEN								·
				11/2	ρ	0	О	0	Bashoop	_		
CITY	STATE		Z3P	2	0	_	٥	e l				
Ashland	кү	1	41102	1 3	- 4	<u> </u>						
PHONE (KEY CONTACT) Plant	SOURCE ID I	NUMBER	1	111	Q							<del></del>
(606) 929-1320 Guard	103-03	40 <b>-</b> 00	20	4	o	O	c	o				
PROCESS EQUIPMENT		OPERA	TING MODE	5		â		0				
Melt Shop		On.	Line	<del>   </del>	ြ	0	0					<del> , - , -</del>
CONTROL EQUIPMENT		OPERA	TING MODE	1855	0	0		٥	Ø			
Harsell Baghouse		On	Line	1554	9	a	0					
DESCRIBE EMISSION POINT				8	_							<del></del>
Baghouse Exhaust					ρ	٥	_ a	- 0				
				·	0	٥	- 0	0				
· · · · · · · · · · · · · · · · · · ·	· 			10	0	0		ာ				
HEIGHT ABOVE GROUND LEVEL	HEIGHT REL	ATIVE TO	OBSERVER	1,,	Δ.				$\sigma$			
DISTANCE FROM OBSERVER	Stan 25	E	nd V			۵	- 1	-2	0			
Start 700 End	Start Nor			1661	0	٥	- 0	0				
	34n /V 9/	/ ^ =	70 /	13	0	2	0				•	
DESCRIBE EMISSIONS				14	0	0				•	···	
Start None EMISSION COLOR	IF WATER OF	OOI ET	DL I ILAS	<del>                                   </del>	<del>-                                    </del>			- 0		·		
Stan N/A End	Attached 17			15	0	0		0		·		
POINT IN THE PLUME AT WHICH OPAC	ITY WAS DETER	RMINED		16	0	0	0					
Stan Same	End	-		17			c	٥	Ø			
DESCRIBE PLUME BACKGROUND				1	- 9	0			<u>w</u>			
1	End			1202	0	0	٥				_	
Start Sance BACKGROUND COLOR	SKY CONDITI	ONS		1208	اه	اه	0	اه				
Sian Same End	Sun Sant	عليد ريو	nd 🗸	20		Ī			<del> </del>	-		
WIND SPEED	WIND DIRECT	ION		1	0		-	0				
Stan 7-1/ End -	Start SW	E	nd 🗸	21	٥		ø	او				
AMBIENT TEMP	WET BULB TE			22	اہ		a	ام				-
Start 75-90 End ~	NIA	ļ 	N/A	23	9							
Stack SOURCE LAY	YOUT SKETCH		Draw North Arrow	1	9		- 9	- 0	<u>Ø</u>			
with C				1612	0	0	0			_	_	
Sun 💠			()	125/4	0		0	9				
Wind -					1			-4				
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	Emission P	aint		27	9	0	ဝ	0				
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	190			1230	اه			اه				
			Î		VER'S N	AME (PRI	ND		<u> </u>			
	Observer's P			R	44.0	Ben	- 6	11				
		IIVN		OBSER	VER'S S	IGNATUR	E	<i></i>	<del></del>	DATE		
	w. <b>/</b>			Ba	/	Bru IGNATUR Befo	<b>Z</b>			5-	12-	00
<b>∠</b>	 - — — — —		<u> </u>	ORGA	IZATION							
Sun Loca	Sun Location Line								anagemen			
ADDITIONAL INFORMATION	<del></del>			CERTIF	ED BY					DATE	1 ~	
1st Helper-				ETA						<u> </u>	-22-	00
/				CONTIN	NED ON	VEO FO	RM NUL	IBER				
^/ / <u>+</u>			1	1		_	_ • •					1 I

# Appendix B Production/Process Field Data

#2

Date  $\frac{5/12/0b}{}$ 

START- 07:15

	Baghouse Fan Amperage A B C			<u> </u>	Baghouse		Notes	
Time			e C	LINF	Pressure Drop, in. WG	Damper Positions (Describe)	(Heat No. and time; Charge and Tap Times)	
7:15			i	idl		All Egen except Fresh Air	A+B Melting	
1:30	179	187	115	80j			W1359 W1363 *1274 X1278	
7:50	178	187	150	109			A Tap 7:31 - 7:3	-5
(.05	176	186	103	107		621364	A Charge 7:37 - 7:	56
8:30	176			101	1		B Charge 7:45-	8:33
8:35		188				ا	A Tap 7:31-7:3 A Charge 7:37-7: B Charge 8:31- B Charge 8:31- B Tap 8:47- B Charge 8:51- A Charge 8:51- A Charge 8:51-	8:50
8:50	175	184	109			X·1279	BCLarge PiSI-	9:01
9:10	174	179	77	104 18			, ,	
9:45	173	174	89	11]	5.7		B Charge 9:43- A Tap 9:57-	1.43 10:02
10:05	171	179	101	110	5.7		A Charge 10105	-10:13
10:20	169	173	94	110	5,7	W1365	B Tap 10:32	10:36
10:40	177	185	117	[[8	5.6	X-1280	B Charge 10138	- ilio4
j1:0V	172	186		<del></del>			A Charge 10:54	10.>0
11:20	113	181	87	115	5.4		Tapped W1365 @ 11:45 am	
							@ 11:45 am	

a) Prior to tap, cave in around electrodes - high smoke in Blog End lliad

KENTUCKY ELECTRIC STEEL

Date 5/12/00

BAGHOUSE TEST PROCESS MONITORING FORM 12:19

10 12:19

10 12:19

		ghouse f Amperag			Baghouse Pressure	Damper Positions	Notes (Heat No. and time;	
Time	Α	В	С	LMF	Drop, in. WG	(Describe)	Charge and Tap Times)	
12:19	169	177	93	110	5.5	Allopen	X-1280	
12:35	175	184	97	103	5.7	except cooling	W-1366 A Charge 12:31-	12:33 /
12:52	169	177	105	109	5.5		B Tap 12:46-	11.51
1:18	176	182	104	108	5.5	X-1281	Charain B 1252	12:55
1:25	179	186	103	IID	5.7	X 1201	Charging A 1:27 Charging A 1:33	-1:32
1:45	173	181	121	107	5.7		Charging A 1:33	1.15
كاه: ز	173	179	102	109			17:41 slip on B,	cloudsod
2:15	173	187	97	108	5,8	W-1317	17:41 slip on B, dust Charging B 1:46	133
よ:30	166	176	-111	10	_ 5,8	W-1367	1 2 0 1	1:43
2:50	172	181	107	104	5,4		R 7:45	3:01
3:10	176	184	102	106	5.4	X-1282	Charging A 2:45	-2:49
3:25	172	132	86		5.5		charging,	・えいいつ
3:40	168	175	90	110	5:5		Charging B 3:40	315 <u>2</u>
4.00	169	(77	110	112		. 01	Tapping A 3:48 charging A 3:53	- 4:13
4:20	172	183	93	114	5-25.3	Ladle	charging 14 3137	
				_				
				-				

B:58 B Enrace Smoking badly. Cut electricity
4:11 Charging A W/LMF ladle RUNEND 4:20 p.m.

### PRODUCTION WORKSHEET

Heats Durir	ng Tests						
	Heat	Pr	evious		Operating		
Date	No.	Tons	Тар	Time Tap	Time, min	Tons/Hr	
TEST 1							
	K-1269	51.7 NA		14:40	96		Begin operations at 13:40
11-May \	N-1355	0		15:11			No cast, completed as W-1357
	K-1270	44.7	14:40	16:45	125		
1	N-1356	47.7	15:11	18:33	202		
	K-1271	56.4	16:45	19:25	160		,
1	N-1357	50	18:33	20:19	197		Return of heat W-1355, add times
W or A	A Furnace	97.7	W or	A Furnace	399	14.7	
X or 8	3 Furnace	152.8	X or	B Fumace	381	24.1	
	Totals	250.5			[	38.8	tons/hr
TESTS 2 an	nd 3				-		
12-May							
-	W-1363	48.3	5:51	7:34	103		
1	W-1364	52.2	7:34	9:59	145		
1	N-1365	52.1	9:59	11:41	102		
1	W-1366	55.6	11:41	13:28	107		
1	V-1367	46.7	13:28	15:46	138		
\	V-1368	50.2	15:46	17:18	205		Return of heat X-1281add times
>	<b>(-1278</b>	49.9	6:39	8:46	127		
>	(-1279	50.6	8:46	10:31	105		
>	(-1280	51.9	10:31	12:47	136		
>	(-1281	0	12:47	14:40			No cast, completed as W-1368
>	(-1282	50.9	14:40	16:37	117		
W or A	A Fumace	305.1	W or	A Furnace	800	22.9	
X or E	3 Fumace	203.3	X or	B Furnace	485	25.2	
	Totals	508.4				48.0	tons/hr

STart 1:55 p.m.

~		/							
٠(			ghouse F		LM			Notes	1
	i	1,11	Amperag	e soutlp	4	Pressure	Damper Positions	(Heat No. and time;	
353	Time	We'A	P. B.	С,	9	Drop, in. WG	(Describe)	Charge and Tap Times)	1
.69	1:55	191	185	105	124	5,6	tampers fully	• 1	
	2:10	174	177	162	176	5.6	open	Charging A 130	
	2:25	183	191	107	125		Freshair danger	Tan B 1421	77
	2:42	177	185	106	129	5,le		(1000 B 1:52 - A	1.55
	2:57	174	182	100	116	5.6	During Charging	Heat X1270	
	313	179	187	100	117	5.0	Damperon	Tap A 3:15-5:	119
	3:24	174	183	122	Щ	5,2	turnock charging	Charge A 3:21-3:	40
	3.44	177	181	112	47	5.3	closcot.	Heat W1356 Charge B 3129	_ 3\
	4:00	169	180	11D	113	5.5	others-open	▼	ll. i
	4:15	179	188	102	115	5,8		Adjusting Oxyfne	60
	4:30	181	190	104	<u>il7</u>	6.		(High VE's)	
	4:45	175	184	10/	الم	5.9		Charging A #	4.2
	5:00	175	181	116	109	5.5			
	5:15	178	188	120	113	5.5		Tapping B 4:50	- 4
	5:30	181	188	167	110	5,		Heatx 271	
	5:45	177	189	111	111	5.3		Charge B 5:00	5:
	(2:00	179	188	107	121	5.6		Charge B 5:46	5:4
	6:19	173	184		98	6.0		Tap A 6:36-	6.4
	6.30	178	186		109	5.8		(Large A 6: 43)	- او د ا
_	6:50 7:15	172 180	185 188	117	监	5.1 5.3		TAD B 7:29 -	713
	a)	41.	E		0 /	. 0	1 0 0	Valacte a	 ! . :

a) Also, Front end loader moving slag @ end of caster. Line

dust. 181 189 119 108 5,40 -

Time End 19:35

# Appendix C

Production Heat Sheets (Privileged and Confidential)

# **Kentucky Electric Steel**

P.O. Box 3500 Ashland KY 41105-3500

May 22, 2000

Dear Fred:

Here is the Raw Data you may need for our report...

Sincerely,

Eddie Hall

Eddie Ball

Supervisor of Safety and Environmental Affairs

							į				
		TIME (minutes)	ТАР	TIME	POWER	LAG FCE	**				
HEAT #	GRADE	TAP/ 2nd 3rd CHG CHG CHG	TAP	of TAP	(minutes) ON: OFF		CAST (Ex: 4/2)	TONS/	T/A FURNACE ONLY DELAYS	E OEI	DELAYS CAUSING
	0 61 T		,							0.61	X Y Y O O D
1 12-13 E.S.		11.5 5	120,0	6:02	59.8 YES	q	M	55.0			0
	ر ا ا								5-4 My 3 3 14.7	13.4	- 0 7 7 7 7
2 11.274		19 र र	423.5	6:53	56.0 543	Q	,×1	5			1 1 1 3
	o :						ļ			2.71	-
3		2,8	120.3	٠, ٢	54.8.55B	<i>~</i> (	•	55.2		103	7 - 3 - 4 6 ( ) 4 6 ( ) 4 6 ( )
	110	-		,[				+	#		
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1	6.7		\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.	7	) e. U . Y. U	-					- 6
	) -					•			5.4.13305.0.4	5.11	\ \ \ \
1771-71g		11.5 15	0.821	₹ 0.17	5.18 8.18	عد	` }	<u> </u>			1 (
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WHITE - CLERK . CANARY - MELT SHOP OFFICE . PINK - FURNACE PULPIT

1 FRUM (3:35(E) 4:11	DELAYS CAUSING  23.8
James Waiting an 151 CHANGE	FURNACE ONLY DELAYS  W. Y. Court & -y Wish  G. J. Set A. 3 and  Kension Level D WHITE - CLERK .
MELTER'S LOG	minutes) TAP TIME POWER LAGFCE (ATT)  2
HIFT TO SOLUTION SUPERVISOR H-1. Solutions	HEAT # GRADE TAP! 2nd 3rd 1

.

	DELAYS CAUSING	CASTER DELAYS 21.900 0.15.3	X 21,760 90,19,8	5010	X 22,400	22,740	111	2			
	FURNACE ONLY DELAYS	80	1.4 84 tap to no cast	Retwork 1381 cane through K	16 heat chaight to castel K	halo gate wead shut of	X 90	X X			
	S/ T/A	Ę	9	-	_						
	TONS/	46.3	53.4	50 .2	3	-			<u> </u>		
	CAST (Ex: 4/2)	7	4	4	ħ	200					
LAG FOR	DIFF. @ TAP	8 52	191	ر بی	8 5	0 3					
POWER	(minutes) ON OFF	8 058588 94:51	64.2 4	93.0 17:19 14.8/8.5 451	4 822	1 K.E.		ļ.—		 -	-
111		282	7 58.8	74.8	- 63	5638				 	
TIME	TAP		16:3	7:71	19:00	5:61					
TAP	- TAP	140.5	123.0 16:37 588612	93,0	4 826 0 to 00: 91 8.041	1 157.0 19.55 638 93.4 4					
inutes)	3rd GCHG	!		Ketun Heat	1	78	1			 	
TIME (minutes)	TAP/ 2nd 3rd CHG CHG CHG	45.5 Z	173 2	39.5 Hear	9.5 A	9.0.2	7			 	ļ
	GRADE	, 3//		101850 3	ı	= 2-	-				
	HEAT #	11347	2 X-4284	3W-1368	4X-1283	5W-1.369	5X-1284	W-1370			

STE EL	2 4	J. C. 2	, and the second						0		
# K U I		TIME (minutes)	I L		POWER (minutes)	11-	**	10NS/ 1/	T/A FURNACE ONLY DELAYS	DEL AYS CARISING	
1X-1264	ı	C to	99	\$ 25.	5 32°	# TAP	(Ex. 4/2)	HEAT	Thy Tunit	CASTER DELAYS	360
2W-1350			XX,	10,5	1/34	1 /	3	3,87	S Dec Trado	7 3 3-	368
-24 E1-XE	121	83	12.	13	13.5 3.5	#	n	7 7	ال سمايي المسامي ال	8.	00. E
	130	601	ر ښ	3.3	313	e.	~	51.7		7.00 X	5 8 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
Y-13 6 6	413	363	7,	3,34	100	0/		53.0	Delan 1st Boog Charge W	ر م م م م	0.091
(S) (S)	413		7	7/10	47°	8#	~	1.67	tepoint 3 other 13-4 three D	42 v	1747 C.
54 KIN	2/7	152	5.5	(°,0)	X15	Z.	_	ر فو م		230	প্ৰত ৷
W. 355	147	8 5	10.	90.00	1 \	46	2	ار الح		000	366 × 8
X . 6 . X	147	2	200	ا درئی	83.5 77.0	Ø/#	~	カゲス		21.003 KU	1998
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			_				TOWN STATE	77.70	1780	Pr CED TO 13.40.	
		TIME (minutes)	es) TAP	TIME	POWER	YAG FCF	1 1 1				
HEAT#	GRADE	TAP/ 2nd 3rd CHG/CHG/CHG	3rd /	o TAP	<u> </u>		5T 1/2)	TONS/ HEAT	T/A	FURNACE ONLY DELAYS	DELAYS CAUSING
1 12-1354	147	793	- 120,	0 8:04	120.0 8:CL 543 543	# 00	3/2	38.0			(4,3   5 32,0 10
2X-1249	147	ر درد	- 47/3	3 14:40	S197 827 04:41 E124	ત્ર	3	รเก	(1) (2)	\$ 1. \$	ني الم
3 W-1355	747		<del></del> .			1			1		4 5 0 5 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0
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CONTROL   100 FEE   100			IME (minute)		11	1 -							
1095040 97 3 - 4300 1511 558578 461 3/4 44.71	HEAT #	R	AP/ 2nd 3r HG:CHG:CF				ž ° @	CAST (Ex: 4/2)		₹	FURNACE ONLY DELAYS	DELA	YS CAUSING
1085, 104 9.7 2 - 430 (15.11) 5587577 459 100 100 100 100 100 100 100 100 100 10		147	(				•	40	1	1	apen, cetuin to	X 24,730	PO178
15.5   1.25.3   16.745   16.75   16.74   17.7   17.0   17.5   16.75   16.75   16.75   16.75   16.75   16.75   16.75   16.75   17.75	7327	6 POW SO 01	72		015.11	158 374	7	tart	þ	<u>/</u> _		77	1
4150 H 6.3 4 - 125.3 16195 2785 4 6 1 3/4 44.71 (1/4)  14150 258 2 - 20.18 18133 47318 451 4 4 17.7	•						•					11 36.410	56700
14150 258 2 - 2018 1873 497 451 4 47.7 T.A. & 47.7 T.A. & 4. T.A. & 14. Zep. PO. 2  15828567 228 2 - 160.8 19735 583 3015 459 4 56.4 Fap. Fire fire fire for 13.05 for 13.05 for 10.1 for 106.5 20:19 11.3 95.7 461 4 50.0 Return w-1355 wellded apara. X 4160 PD. 2 13.05 for 10.1 for 106.5 20:19 11.3 95.7 461 4 50.0 Return w-1355 wellded apara. X 4160 PD. 2 12.2 for 10.1 for	1470	- 1		1	3 16:45	628528	194			\ \&		677	2000
1582850 2128 2 - 160.8 18738781451 4 11.1  1582850 2128 2 - 160.8 1873583015 459 4 50.4 feather this heath lage 12.3729 10.2  1482850 2128 2 - 160.8 20.19 113.952 461 4 50.4 feather w-1355 weald of gasta, 18.4162 10.2  1482850 212 5 - 99.3 21.05 667375 451 4 10.8 feather w-1355 weald of gasta, 18.4162 10.2  1582850 212 5 - 99.3 21.05 667375 451 451 4 10.8 feather weather							4			7	A. 84	16.8	PD 25.5
1582850 128 2 - 1608 19:35 583 1015 459 4 56.4 Funt feet 9500 165. in 549 15090 10 2 150	1336		<b>l</b> .	301	8 18:33	68.3 133.5	451		۲.۱	4		014289	
1477 (1644) 46.5 20:19 113.952 46.1 4 50.0 Rethirm W-1355 wendari agree, to 33.555 46.2 40.2 40.2 40.2 40.2 40.2 40.2 40.2 40	1221	1582850 22	2 2	160.8	7 19:35	5831065	459		16.4	12 d	after this heat.	1	PO 25
1095/102/300 Host 106.5 20:19 11.3:95.2 46.1 4 38.0 10.500 10.500 10.200		147	Retur	_	_		&		+	H	W-1355 wouldn't	6 ×	000
4572CR50075 5 - 99.3 21:05 669325 451 4 48.9 105000 165 in pot (23.5500 000 000 000 000 000 000 000 000 00			D Heat	_	81:00 S	11.3 95.2	194		30.0 S		1 1	35.8	
457268500,7 2 - 99,0 21:56 570:420 459 46,1 4 46,7 46,1 459 45,1 45,1 45,1 45,1 45,1 45,1 45,1 45,1		4/4	! \ ;				01		0 3	1	18	12.	000
4572CRSO 0,7 2 - 99,0 21:56 570:420 459  4572CRSO 0,7 2 - 99,0 21:56 570:420 459  1	4/3	4512CR607		47,3	50:1x	66932.5	451		(8.7)	Н			
11 2 - 48.2 21.98 53.0 41.3 -16.1		407					رد ر د		<u> </u>	<u> </u>	165.10	215	PD 193
2 - 92.2 2253 530 91.3 76.1	1	137.45K30 0.		-1-		074:075	2		+	4		40,7	
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Section 18

2000 E. C.

**98** 2.50

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97.00

2 3 S. ...

	ky Elec		<u> </u>				\	• / -	MF C	C	IJ	inec	1	lea	at S	heet
E	AF Melti	ng Log	(time)			.WF	Treat	ment Lo	g (time)		Po	wer &	SUBI	alv i	Consu	mption
	Start	Ste	p qc	Scrap Wi		==	ar Numb		2	<b>=</b>					Amount	
Last Tap		19:3			- Las	l Heat	- Treatr	nent Stop	11/21	_				At F	urnace	AI LMF
1st Chg.	19:40			5000	Curre			tment Start	31.2		Pow	er Meter			050	3073
2nd Chg.	20,10		- 14	4000	_	Prep	-i-ilon	Time		_	Elec	trode #1		-	× 14	<del></del>
3rd Chg.	<del>                                     </del>		- 1					lment Stop	1)-1 . /	$\dashv$	Elec	trode #2				
Tapping Tap Yemp,	12/1/25				<b>⊣ ├</b> ─-		Time of		<del></del>	_	Elec	lrode #3				
rap remp.	303C	me of H						<u></u>	47.2		Lanc	e Sections				
	100	ille of H	eat:				um Wgl.	urn to LM			$\vdash$	f Delta		18	3	
LMF	Ladie Weight		_		1	.,,,,,,		7,000	d Scrap Wg	<u>  </u>	Wall	Heat		_/	8	
Steel	Tare Weight		49,000	) #						-4	<u> </u>	mocauples	<u>.                                    </u>			
Weight	Steel Weight				<u> </u>						<del></del>	plers				
											Oxy	gen Probas				
				A	dditions	To	The F	urnace a	nd Ladi	e						
	Flu	ixes Ad	ded (Ib	s)			22:	20	Alloys Ad	ided	(lbs.	)			Wire A	dded (ft)
Time	Furnace	Ladie	LMF	L.A.	IF LA	€.		Tune	Fumace		dle	LMF	LA	1F	Sulfur	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Slag Cond.		1000					С	arbon	4-15	<del>                                     </del>		40	-		Carbon	+
Cal Al	1						75	% FeSI	1	174	- U	3/5	23		CalSil	150
Spar	1		5-14	3				SIMn			00	· · ·	<u> </u>		FeCb	17 7 ()
Cal C	ļ		14.2	~			нс	FeMn		<u> </u>		125	-	_	FeB	
Lime	4000		1,00	)			MC	FeMn				<u>,</u>	100	,	FeTi	<del> </del>
Doloi.lma	-							FeCr				-			FeV	\
NI O-LON		200	<u> </u>			[	Mol	y Oxide							Nitrovan	25.18
Cal Sil	1		<u> </u>				C.	opper							FeS	
						1	rgon	Lag								
Argon Flow	2 a 2 ye ss	1. 40		T				T .	T		1		Rine	e Flo		
					Ten	iner	atures	and Tin	100				71073	0.10		
: Time	JA 29	11.5	210	20 22	14 79			T	100	T.					; - <u></u> -	
Temp. (*F)	7840		221	2 990	5 19	/	<del></del>		<del> </del>	_		<u> </u>	Fina	I N <sub>2</sub>	(ppm):	
Oxygen (ppm)		<u> </u>	12//	170	0 37,	~	· ·	<del> </del>	<del></del>	╁—		<del></del>	⊢—		π <b>ρ</b> (*F):	
					Chamia		127102		1	<u> </u>			Fina	10,	(ppm):	<u>·</u>
Practice:				4.44		uy e		llet Infor								:
	. 4	12_	Roll	No:	04	4		Chemisti	<b>y</b> :			•				1/
Element	C	Mn	-	Р	S		Si	Си	Ni	$\neg \neg$	C-	144				
Spec.	+							1		- 1	Uf	1 177	0		Snu	-41
1	14	<del>                                     </del>	) -	20	25	1 3		<del> </del>		+	Cr	M			Snu	AI
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Kentuc	ky Elec	tric S	St	, Inc.				EA	F/L	MF (	<u>`</u>	ìb	ined	<b>4</b> b	leat.	Shee
	EAF Melt	ing Lo	g (tim	e)			LIVIF		tment Lo							
	Slart	s	Ιορ	Scrap	Wt.	_		ar Num		- /		1.4	wer &	aub		sumption
Last Tap		- 18:	35			Las			Iment Stop	1-1-6					l——	unt Used
1st Chg.	18:5	0		7					alment Start	29.40	_	Pow	or Moter		At Furnace	
2nd Chg.	_	_		<i>(</i>	_ 1	-		aration		80.4	싀	1	lrode #1		4160	21,2
3rd Chg.	_					C.,,,							rode #2		<u></u>	<b></b>
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Tap Temp.	1292		tals:			<u> </u>		Time o		380		Lanc	a Section:	<u> </u>	<del> </del> -	<del></del>
	Total	ime of i	leat:						turn to LM		_	Root	Della		77	<del> </del>
LMF	Ladle Weigh	it						ım Wal	<del></del>	d Scrap Wo	<u> </u>	Wall	lieat		17	<del> </del>
Steel	Tare Weight		49.0	00#				20		<del></del> -		Ther	nocouple	s		
Weight	Steel Weigh	į				کـــــــــــــــــــــــــــــــــــــ	<u> </u>	achi	it get	oper	را_	Sam				
												Oxyg	au Ltópa:	<u> </u>	L	
					Addi	tions	To	The F	urnace a	nd Lad	e .					
		uxes A	ided (i	bs)				21	D 5	Alloys Ad	dded	(lbs.)		_==	Wie	Add
Time	Fumace	Ladie	LA	UF.	LMF	LM	iF.		Time	Fumace	_	ide	LMF	T.V		Added (ft
Slag Cond.		100 C	2					(	Carbon	<del> </del>	-	- 1	200	20	A	
Cal Al	<del></del>		_					75	% FeSI	<del>                                     </del>	<del>                                     </del>		50	-	Carb	<del></del>
Spar Cal C	<del></del>		2./	<del>- 1</del> -		<u> </u>			SiMn		$\vdash$	<del></del> -}	<u></u>	_	FeC	
Lime	+		70	5		<u> </u>		H	C FeMn					_	FeE	
DoloLime	- <sub>1</sub> ·     —		1300			—	1	М	C FeMn					<del>-</del>	FeT	<del></del> -
NI	<del></del>		-	<del></del>		-	4		FeCr	<u> </u>					Fal	,
Cal SII	<del>† -</del>	463	+-			╂			ly Oxide	<del> </del> -	<u> </u>				Nitrov	an .
		7.21.7				<u> </u>			copper		<u> </u>				FeS	
Argon Flow	2 9 V m + 5						A	rgon	Log						:	
Argon Film		- 13	┸			Ŀ_									e Flow;∻	
		· · · · · · · · · · ·	-23	<u>بــــــــــــــــــــــــــــــــــــ</u>	÷	Tem	pera	tures	and Fin	es-		, fac are	·			
Time	20:15	20:52	1.6	20,31	:19	Γ		11	5		4.					
Temp. (°F)	2880	2791	20185	75 <b>y</b>	5%	•	٥	<u></u>	<del>-</del>	<del> </del>					I N <sub>2</sub> (ppm)	
Охудел (ррт	<u> </u>	<u>'</u>					1		<del></del>	<del> </del>	-				I Temp (*F	
					Ch	emisi	try a	nd Bi	llet Infor	mation	<u> </u>				I O₂ (ppm)	
Practice:	7	47	Ro	II No:	_									_ :		:
Element	Tc	Mn		P	<del></del>	<u>-2) 2</u> S	74		Chemistr	- -	<del>-,</del>					NA
Spec.	91-	·			┼		-	Si	Cu	Ni		Cr	Mo	2	Sn*	AL
Prelim	84	-2-		20	-2	5	/	12.	35	20		/ゔ	0	7		
Prelim	74	58		7		<u> </u>	1	2_	121	8		12	ن	2		
Prelim	87	ر از ز		/4/	<del></del>	9	16		21	8	7	3	:1		5	02 L
Prelim		<u> </u>		5	1	/	10	<u>,                                    </u>	2/	مرم الم	/	13	コス	_	10	026
Prellm	- <del> </del>				ļ	<u> </u>							<u> </u>		70	N.E
Prelim	<del></del>			<del></del> _	ļ						_		-			
Final											+		<del>                                     </del>			<del> </del> -
Element	. 96	. 55	<u></u>	014	.01	.7	.1	6	. 21	.08	$\top$	.13	.0.	<del>z  </del>	.009	<del></del>
	AI	V		Nb		Ti .	Ž	7	В	Ca	Z	'n	DI	┰┸		<u> </u>
Final	.004 GRADE	.006		)26	.00	0	.00	0	.0000	.0006		013		-	ade Code: 1 nple Type:	47 555
r			109	MOD.							<u> </u>	l	<del>-</del>	380	прие тура;	
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	fı							) }	0 0	• 0			0 (	0.0		
3	MF Operati	Ladie	man t	adle No	Ga.	e No.	Heat	s on L	adle Heats	. u s on Plug		Date	0 1	0 . o Shifi		Number
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	ment No: NG4	113					Acris	ion ()ate:	01-19-1999	r.V.	<u>ر</u>	// /	600	<u>3- / </u>	1 14.	1227
Remarks:					====					===-				llevisi	on Level: F	_

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E.	AF Meltir	ig Log	(tim	B)		LA	AF Treatr	nent L	og (tin	te)		Pol	ver & S	Supp	ly Const	Imption
	Start	SI	ор	Scrap	WL.		Car Numbe	r		ヌ	ī <sup>-</sup>			Ī	Amoun	
Last Tap		1/4/	56			Lasti	teat - Treatm	ent Stop		5.5	-			[-	At Furnece	At LMF
1st Chg.	17:20		53	15,4	ilv	Current	Heat - Treat	ment Sta			-\ r	Powe	r Mater		13090	2425
2nd Chg	17:55	<u> </u>		40,0	100		Preparation T		30	:02	┧┟	Electr	ode #1		+ 2070	<u> </u>
3rd Chg.	<u> </u>	_				i——	l Heat - Treat			<u> </u>	┨┞	Electr	oda #2			
Tapping	19:30	19:	35			<del>]</del>			<u> </u>	2/1	21 17	Electr	ode #3			
Tap Temp.	3020	Tol	als:				otal Time of	Heat ————	38	110	<u> 1</u>	ance	Sections			
	Total Ti	me of I	leat:			Reas	on for Ret	arm to L	MF / Fu	nace		Roof (	Della	╼╌┼	/2	<del></del>
LMF 1	adle Weight				7	Est.	Relum Wgt.	Ad	ded Scra	p Wgl.	311	Vall t	leat	$\dashv$	12	
-	are Weight	·			{	<u>                                     </u>					]  :	hem	nocouples		/	
			49,0	000 #	4						711	Samp				<del></del>
Weight	Steel Walght				J		<u> </u>				i ŀ		n Probes			
					الماماة		to The E				_  '			1_		
					Aug	tions i	o The Fu	rnace	and L	adle					;	
<u> </u>		ixes Ac	ided (	lbs)			20:0	FO	Alloy	s Add	ed (i	bs.)			Wire	Added (ft)
Time	Fumace	Ladie	L	MF	LMF	LMF	7	ime	Fun	nece"	Ladi	•	LMF	LAIF		
Slag Cond.		1001	2				C	noon				_	140	4/2		
Cal Al						-	751	4 FeSI	_	_	U	<del>7</del>	7	40 135	Cal Sil	_
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Cal C			1/-			<u> </u>	HC	Fellin	_ _		90		200			
Lkne	4000		30			1		FeMn	_			-	700		FeB	10.213
DoloLime	1			<u> </u>	-		_}	eCr						<u>-</u>	FeTi	<del></del>
NI	1		╅┈			+	<del></del>	Oxide		— <del>-</del>  -				-	FeV	<del>-</del>
Cal SII	1		_	<del>-</del>		╁━─	<del></del>	pper	_	-+		-		ļ	Nitrova	<u> </u>
	·		_ <u></u>			<u> </u>							·	l	FeS	
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Argon Flow	Takuto	. 11				·		1		$\overline{}$		$\exists$		Rinse	Flow:	``
						Tem	eratures	and T	imes		_					
Time	18117	19.21	100	الدائد الما		-1										
Temp. (*F)				114"		<del></del>	<del>- </del>		· ·   · · 			_ _	·		N <sub>2</sub> (ppm):	
Oxygen (ppm)	2815	4766	2 2 Y	130	7715	4	- · ·	<b>↓</b>				_ _	-	Final	Temp (*F)	:
any year (planty	<u> </u>	<u></u>	<u></u>					<u> </u>	1					Final	O <sub>2</sub> (ppm):	
					CI	iemisti	ry and Bi	llet Inf	ormati	on					1	
Practice:		28	R	oll No	:	044	, (	 Chemi:	stry:							<del></del>
Element	C.	Mr	, T	P		s	Si	Cu		A Ii	į —		<del></del>			· · · · · ·
Spec.	7/	<del>                                     </del>	<u></u>	<del></del>	<del>- -</del>	<del></del>				Ni		Cr_	М	0 /	Snu	AI
Prelim	13/	12	<del>?  </del> -	<u>20</u>	<del></del> -	2 5-	<u> 22</u>	35	∑	20	7	0	0	Y		
<b>———</b>	<del>  / / _</del>	11		<u> </u>	4			17	<u>_</u>	8	,	13	6.	2		
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Prelim						~			+				+			<del>-</del>
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Prelim	<del> </del>	<del>                                     </del>	$\dashv$	<del></del>				<del> </del>			<b> </b>		_			
Final	.30	1.2	z	7013	<del></del>	025	-24	1		-08	<u> </u>	-16		Ω2	010	<b></b> _
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Element	AI . 004	-00		. 000		Τί 000	Zr + 000	B 0012	3 3	011	Zį	013	Dİ		ade Code:	278
Final	GRADE			5B28		<del>~~</del>	*		<del>-</del>   '	<u> </u>	L	111.1	<del>                                     </del>		mple Type	555
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[						·										
i	Heat i Selit	Х . аИ ). Н			Pi	roduc C.=	t Code	23K								- <i>;</i>
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Malter	[] LMF Opera		()	T;					0 0	).a.	<u>.</u>				0.0	
· · · · · · · · · · · · · · · · · · ·		nor Lac	แลเทลก	Ladle	No. C	ale No.	Heats on I	adle H	eats on	Plug		Dat	θ	Shif		Number
112	735	4	<u>5-9</u>	$\perp$ 7	7		77		1	l-		1/-	2000	7.1	7/2/	7 7
Duc	ument No: MS	3-013					Revision Dec	c: 04-19-1	994		1-1		~000	<u>''تدا</u>	<u> </u>	<u>r 11</u>
Remarks:	12	, 1	<del></del>	·	<del></del>	<del></del>				<del></del>				Revis	ion Level: F	
	BUK	Y 1.	M	m	سعر	•			·							

### EAF / LMF Combined Heat Sheet

	A E NA IN	20.	77				, , ,							neet
	AF Melti				La	IF Treath	ient Loc	(time)	<b>.</b>	Po	wer & S	Suppl	/ Const	mption :
Last Tea	Start	Stop	. 1	ap Wt.		Car Numbe	व		$\neg$				Amount	
Last Tap		15:7	<del></del>		Last	leal - Treatm	ent Stop	19:00	7			A	Furnace	ALLMF
1st Chg. 2nd Chg.	15:43	16.2		,000	Current	Heat - Treat	ment Start	19:07	$\dashv$	Powe	or Meter	7	1.800	2725
	10.2	Ý——	<u> 53</u>	1000	F	raparation T	in/e	77.07	$\dashv$	Elect	tracte #1		4.5	2/42
Jid Chg.		<del></del>			Current	Heat - Treat	ment Ston	19-5	न	Elect	lrode #2			<del></del>
Tapping	18/30					otal Time of I		7 7 -		Elect	lrode #3			
Tap Temp.	304							48,33		Lanc	e Sections	-		
	Total III	me of He	at:			on for Reti				Roof	Dotta		16	
LIME	Ladie Weight				ESI.	Return Wgt.	Added	d Scrap Wgt		Wall	Hoat		16	<del></del>
Steel	Tare Weight		49,000#	7					]	Then	rnocouples			
Weight	Steel Weight			딕 _	<b> </b> -			<del></del>	\	Sam	pleis			
					<u></u>				[	Oxy	en Probe	3		
				Addi	tions T	o The Fu	rnace a	nd Ladie						
	Flu	ixes Ado	led (lbs)			20:		Alloys Ad		//ba			1	
Time	Furnace	Ladie	LMF	LMF	LMF	<del></del>	ime	Furnace		(IDS.) dla	LMF	· · · · ·		dded (fl)
Slag Cond.		11.00	<del> </del>		<del>  -</del>	<b></b>	itbon					LMF	Sulfur	<u> </u>
Cal Ai		<u> </u>		<del></del> -	+		FeSI	4-13		-6	70		Carbon	
Spar			3.11	<b></b> -	┪──-	-J	iMn	<del> </del>	쉸	0 C		25	Cal Sil	150
Cal C	<del>                                     </del>	<del></del>	<i>y</i> - c		<del> </del>	<del></del> -	FeMn	<del> </del>	11	10		<u> </u>	FeCu	3-15
Lime	4000		700	<u> </u>	<b>†</b>		FeMn	<del> </del>				<del> </del>	FeB	-
DaloLime					<del> </del>		eCt.	<del> </del>	1	100	<del>5</del>	<del> </del> -	Fali	
Ni	į.				<del>                                     </del>	<del></del>	eblxO	<del>                                     </del>	100		<u> 75</u> _	<del> </del>	FeV	
Cal SII		·		<del></del> -	<del> </del>		pper	<del> </del>	1	<u></u>		<u> </u>	Nitrovar	<del>`</del>
					<u> </u>		<del></del>	<u> </u>				<u></u> _	FeS	<u> </u>
A						Argon	Log							:
Argon Flow	13.50	* 1	L	<u> </u>	<u> </u>		<u>  :</u>			$\Box$		Rinse	Clow: -	
					Temp	eratyres	and Tim	es					· ·	at trans
. Time	17:05	18:17	18:19	19:18	79:21	19:30	19/4/1	19.52	10	त्त		Cinni	:	
Temp. (*F)	2863		2599	2785	7 284	92906	1891	287 F	7				1 <sub>2</sub> (ppm):	
Oxygen (ppm)		<u>-                                    </u>		1777		77706		7	28	-7	<u> </u>		emp (°F):	·
			<u> </u>	C	emistr	y and Bil	Unit Vallage			1		Final C	3 <sub>2</sub> (ppm):	
Practice:	-		Roll N							<u> </u>	·.		1	:
Element	T c	<u> 2 / </u>	<del>-,</del>	0. 0	44		hemistr	y:				_		1/3
<del></del>		Mn	P		S	Si	Cu	Ni		Cr	M	0	Sn <sup>∥</sup>	-AT
Spec.	50	88	1 20	2 2	: 5	22	70	20	7	75	2	0		
Prelim	38	20	上_/.	8 4	557	7	18	6	<del>- -</del>	14	0			
Prelim	43	90	13		4	25	19	9	+-	75/				
Prelim	30	10				23	19	4			7	— <del>  _</del>	1.	028
Prelim			<del></del>			~	-LZ	+	4-5	22	20	2 1	2	028
Prelim	1	<del>                                     </del>						<del> </del>	4-		_			
Prelim	<del> </del>	<del> </del>	<del></del> -					<del> </del>	1_		_ _			
Final	.50	. 91	+.025	<del></del>	15	_ <del></del> _	<del> </del>	<del> </del>						
Element	<del></del>	<u></u>	<del></del>			. 26	. 19	. 09		. 94		21	:010	<del></del>
	AI	V	NP		Ti	Zr	B	Ca		Zn	DI	7	o Code: 5	21
Final	.004 GRADE	+.007	.029	0.	00	.000	.0000	.0007	<del>+.</del> 0	029	<del> </del>		la Typa:	555
	- 44106		4150-				<del></del> L		1		J			
											. <b></b> .			
Į.	Heat Srii		1353		moduc	:t Code	261							,
1		v Bal,	<b>i. I</b> j	S: 00x	t Sime	t Lengt	di Cour	nt Tom	s S	tac	⊩ #Sc	ra» l	ons	
1	ĐÃ L. Hì	597	4		C . O O	19	/ 4	12 40.1	L D	03		8	7.0	
1 1	ñ R	597	4 ()	01007			0						2 + G	
1 1 1 1	fi R fi		Ö Ü				0 U	0 0.				0	0.0	
Meller	ñ R		0 0 0				0 U A	0 0.0	)			0 0 0	0.0 0.0	
[2]	fi It L LMF Operal	tor Ladia	0 0 <u>D</u> man Lad				0 U A	0 0.0	)	Da	1e	o o	0.0 0.0 0.0	Number
9/2	fi It C ft LMF Opera	for Ladio	0 0 <u>D</u> man Lad				0 U A	0 0.0	· 		~ <b>—</b> —-	Shift	0.0 0.0 0.0 Heat I	
9/2	fi It L LMF Operal	for Ladio	0 0 <u>D</u> man Lad				O O O adle Fleat	0 0.0	· 		le Pow	0 Shift 3-1/	0.0 0.0 0.0 Heat I	3,56

17//

Kentuck	y Eleci	tric Ste	Inc.			EAI	- / L	IVIF	C	O!	ລ	me	HE	eat	Sr	neet
E	VF Meltir	LMF Treatment Log (time)						Power & Supply Consumption								
	Start Stop Scrap Wt.				Car Number 2				₹	5				Am	ount L	Jsed
Last Tap		14:4	3 =		Last F	leat - Treatm	ent Slop	_	22	$\exists$				At Furna		At LMF
1st Chg.	14:55	15/2	5 800	110	<u> </u>	Heat - Treat		~~~	739	~-1	Powe	er Meter	-	16.41	<del>~   -</del>	475
2nd Chg.	15:34	/	300		<u> </u>	reparation T		14	-0-1	4	Elect	rode #1		<u> </u>	4-	
3rd Chg.								1.2	-0 (	<del>,</del> -	Elect	rode #2			- -	
Tapping	16:45	163	70		-	Heat - Treat		<del></del>	04	4	Elec	lrode #3	t		- -	
Tep Temp.	3020	> Totals	:			olal Time of I	Heat	197	9.39	4	Lanc	a Section	s		_ -	
	Total Ti	me of Hea	ot:	]		on for Ret			_		Roof	Delta		1/2	_	
LMF L	adie Weight			1	Est.	Ratum Wgt.	Add	led Scra	p Wgt.	Цl	Wall	Heat		16		
Steel T	ara Weight		49,000#	-	<u> </u>					╝	Ther	mocouple	:5			
	lael Weight			┨	İ						Sam	plers				
	<u> </u>			J						1	Оху	en Probe	5		L	
				Add	itions 1	o The Fu	rnace	and L	adle			_				
	Flu	ixes Add	ed (lbs)					Alloy			//he			147		44 4 40
Time	Fumece	Ladie	LMF .	LMF	LMF	<del>-</del>	īme	$\overline{}$	nece	_	die	LMF	LA			ided (ft)
Sing Cond.		<i>icec</i>			+-	-1	urbon	+-	<del></del>		-2-	100	┺		lfur	<b> </b>
Cal Al		ires.			-	-1	4 FeSI	- -		ð.	~~	,,,,	8		bon	150
Spar			3-15		+	-1	iMa				00		<del></del> -		Cb	150
Cal C					<del>                                     </del>	-1	FeMn	-		4	20	100	+-	<del></del>	o8	<del>  </del>
Lime	4000		300		<del>                                     </del>	-	FeMn					<i></i>	┤	<del></del>	) II	
DoloLime							eCr	_	$\neg$	10	UD	-12 g	15	- 1	•V	15-B
NI	1					Mol	Qxida	$\top$	-	14			/_/	—- <del>  —</del>	ovan i	, <u>, , , , , , , , , , , , , , , , , , </u>
Cal Sil						C	opper		一				1	<del></del> }	s	<u> </u>
						Argon	Log								_	
Argon Flow	2 typ 12	· . · . · .			T		109	7	<del>-</del>				T ai		!	
3=77.15.11					<u> </u>		<u> </u>	<u> </u>					Rins	e Flow;	·	
						eratures	and T	mes					1		1	
Time	16:15		14:29 1				184	6 18	53	190	0_		Fina	I N₂ (ppi	11):	
Temp. (*F)	2846	2872	2942	<u> 1995</u>	- 2769	2898	1287	623	195	28	73		Fina	l Temp	°F):	
Oxygen (ppm)	<u> </u>	<u> </u>			_i	<u></u>		<u>.</u>					Fine	I O₂ (pp	m):	
				C	nemist	y and Bi	llet Info	ormati	ion							
Practice:	1	56	Roll No.	:	040	+ (	Chemis	try:								1/
Element	С	Mn	Р		S	Si	Cu	$\top$	Ni	T	Çr	1	Ио	Sn	1	At
Spec.	50	85	20	13	25	22	3/	,	20		100	0	7		-	
Prelim.	13	16	1		18	<u> </u>	13	<del>'  </del>	7	┰	11		2			<del></del>
Prelim	39	211	10		15-	25	18		<del>/</del>	+				-	- -	-21
Prelim	48	82			1.2		17		,		7.2		,	8		181
Pretim	17 "	1	+-/-		- MT	25	1 6	+-		1.	34			12	_[/	142
Prelim	┼	<del> </del>					<u> </u>	- -		-		_ _				
I	<del> </del>	<del>-</del>	<del> </del>							1		_ _				
Prelim Final	E 2	93	012		010	. 27	<del>                                     </del>		na	丰			_ <del></del> _			
	.52	.83			.010		. 18		.09	1	9		.02	.00		
Element	Al	V	Nb		Ti	Zr	8	ļ	Ca	•	Zn	DI		Grade Code	. 7	56
Final	.004 GRADE	.185	.001 6150H		.000	.000	.0000	) . (	010	Ŧ	.001		<del>29   s</del>	anyle Type	_1	555
	OLUMB		0.7.200									TIO INC	<del>6689</del>	o do£a		
i								~					~			
1			1270						n	C .	1			f		
i	S⊬lil A	5973			512e 7.00	Lengt: 17:			4.7			<b>₽</b> 5 €	467 O	0.0		i
!	Ħ	O	)				0	0	0.0		-		o	0.0		}
<u>L.</u>	C	0					Ó		0.0				0	0.0		,
Moller	LMI- Uperi	otor   Ladla	men   Ledie	No.   (	Gala No.	Heats on l	n Ladle ⊟Hi	() (10 2188	u 0 Plua		Da	ıte	1 50	ift He		
912	270	- 116		7		12			,						at N	lumber
	ر کر کسر umeni No: M	5.013	1 1 2			<u> </u>		_5_		5	<u> [[</u>	00	3/	<u> </u>		270
Ramarks:				<del></del>		Revision De	c; #1-19-19	*** 		_	==		Rev	rision Level;	F	
rasminina.										_						
1									_							

# EAF / LMF Cc bined Heat Sheet

7	AF Melti	ng Log	(time)	LMF Treatment Log (time)					Power & Supply Consumption:						
	Start Stop Scrap Wt.					Car Number									
Last Tap		080	3 -		<u> </u>		Imeni Slop	1/2/				-		nt Used	
1st Chg.	11:38	14		ORC	<del></del>	<del></del> -	elment Start	16.77		Power Meter			Furnace 1980	ALLMF	
2nd Chg.	1424		33		ļ	eparation		16.15	4		trode #1	<i> }_</i>	1790	44Z S	
3rd Chg.	- <del> </del>				I		alment Stop	1000	-3	Elec	trode #2				
Tapping	15.10		2		<b></b>			1110	싀	Elec	iroda #3	-			
Tap Tamp.	3020	) Total		<u> </u> ,		al Time o	<del></del>	65,5	2	Land	o Sections			<del>  </del>	
	Total II	me of He	al:				durn to LM			Root	Delta		15.	<del></del>	
LMF	Ledle Weight			¬	ESI. R	alum Wgi	. Adde	d Scrap Wgt	-	Wall	Heat		15		
Steel	Tare Weight		49,000 #	7	ــــــــــــــــــــــــــــــــــــــ				ᆀ	Ther	inocouples				
Weight	Steel Weight			7	<del></del>		<del></del>		_	Sam	plers				
									_	Оху	en Probes				
				Addi	lions To	The F	urnace a	nd Ladio							
	; Flu	ixes Add	ded (lbs)					Alloys Ad	_	//bs	}		14/7	Added (ft)	
Time	Fumece	Ledie	LMF	LMF	LMF		Time	Fumace	Lac	<del></del>	LMF	LMF	9	<del></del>	
Slag Cond.	ļl	1800				(	Carbon	<u> </u>	4-	n	300	- 3/5	Sulfur		
Cal Al	<del> </del> -					75	% FoSI				1:15	4567 50	Carboi Cal Si	- +[	
Spar	-		213			•	SiMn		50	ठ	<del>/, _,</del>	20	FaCi	720	
Cal C	(411.23)		300			Н	С ГеМп				200	100	FeB	12.0	
OoloLime	4000		300		<b>.</b>	M	C FeMn				<u> </u>	<del></del>	FaTi		
NI			-			4	FeCr						FeV		
Cal Sil		4-B			<del></del>	<del> </del>	ly Oxide			[			Nitrova	.,	
	<u></u>	4-15	<u></u>		<u>L</u>		copper						FeS	1	
	<del>,</del>					Argon	Log			· Ţ ·			T I		
Argon Flow	2.435	ii								Ì		Rinse F			
					Tempe	ratures	s and Tim	les .				7441001	017, 1		
: · Time	15:67	16:33	16:52	17.53									3		
Temp, (*F)	2961	1154	18/8		78:1-1	<u> </u>			1:			Final N			
Oxygen (ppm)	· ·		7.5	/	200	1017	2			-		Final Te			
				Ch	emistru	and D	illet Infor					Final O	(ppm):		
Practice:	11	11	Roll N							<u>.                                    </u>					
Element	T C	1 /		<del></del>	044	1	Chemistr	y:						NB	
	C	Mn	P.		S	Si	Cu	Ni		Cr	Mo	0	Snl	-A/1	
Spec.	95	57	20		5	17	3.5	20	7	5	0	7	<del></del> -		
Prelim_	10	_//_	4	3	7		22	7	†	P	0	2			
Prelim	1	121	14	19	,	11	22	-/-	1.2		12	-	<del>,</del>		
Prelim	70	3006	7	1/6		18	23	3.				2		223	
Prelim	88	55	-	7:		10	01	7	14		7	-/-	<del>4</del> _	027	
Prellm	-88	54	- 2	1	<del></del>	20	13/		10		2	_2	$\frac{n}{2}$	224	
Prelim			<del>                                     </del>			<u></u>	<del>                                     </del>	<del>-</del> 7_	1	0_	2_		3	223	
Final	00	00	.00		000	00			┼		<del></del>				
Element	AI	V	No.		Ti	Zr	.00	.00	<u></u>	. 00	<u>'                                    </u>	00	.000		
Final	.000	.000	<del></del>				B	Ca		n	DI	Grade	Code	147	
	GRADE		1095		00	.000	.0000	.0000	. (	0000	1	Sample		898	
<u></u>	GRADE 1095 MOD NO CAST														
i	Heat r	lu. W-	1355	Pr	oduct	Code	2111								
l •	Selik A	B.O.	- It is it	Het	Size t	enet.	ի Հասու	t Toris	Sta	ach	#Sera	as To	ហទ		
1	11 11	5972 0	J	.00X7	.00	20	- <u>.</u> 0	0.0				0 0	. 0	:	
l k	U	O					0 ( 0 (	0.0					. 0		
Melter L	MF Operate	()			· - I -		ن ــــــــــــــــــــــــــــــــــــ	0.0				0 0	. O _Q		
	MF Operate	Ladier			le No. He		.acie Heels	on Plug		Date	e T			Number	
119	235	195	<u>Z L 8</u>			34	<u> </u>	9			00	<del>3/-</del>		4.7 6	
	meni No; NIS 4				R	crision Dan	: 01-19-1999				001	<del></del> -		755	
Rumarks:	Dilay	L/28	C5~	1345	, hi	, 1.7	01241	<u></u>		<del></del> -	<del></del>	Hevisjon I			
	7		<del> </del>	<del></del>	/V - 3 	Arc	white-	and	00	<u>~</u>	601	Koi	cse		
	<u> </u>				V						71			_	

### EAF / LMF Co. bined Heat Sheet

	AF Melti	00				\		0, 1	<u> </u>	ı nea	<u>ə</u>	neet		
					MF Treat	ment Lo	P	Power & Supply Consumption						
Last Tap	Stert	Stop	<del></del>	M	Car Numb	ber	ヌ	ī			Amount Used			
1st Chg.	0122	10/05		Las	Heat - Treat	mei I Stop				At Fu	rnece	ALLME		
2nd Chg.	11:30	<del></del>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Current Heat - Treatment Start			/ Po	wer Meler	20	27	4100		
3rd Chg.	117.7.3	7	550		Preparation	Time	14.5	Ele	ctrode #1			<del></del>		
Tapping	1411	0 14is		Cure	nt Heat - Trea	atment Stop	11:11	Ele	ctrode #2					
Tep Temp.					Total Time o		20:4	— Ele	ctrode #3					
	Total Ti	lme of Hea	<u> </u>				19240	Z Lan	ca Section:					
	1,5/5/	and of the	····		son for Re I. Relum Wot				of Delta		3			
LMF	Ladie Weigh	1					d Scrap Wgl	<u>   W</u> a	Il Heat		5			
	Tare Weight		49,000 #	.			<del></del>		mocouple	·	2			
Weight	Steel Weight			<u> </u>	<del>-</del>			├	nplors					
								\	ygen Probe:	<u> </u>				
				Additions	To The F	urnace a	nd Ladie	9						
<u> </u>		IXes Add	ed (Ibs)			,	Alloys Ad	ded (lbs	:.)	Ī	Wire A	dded (ft)		
Time	Furnaça	Ledie	LMF	LMF LM	=	Time	Furnace	Ladie	LMF	LM#	Sulfur	1		
Slag Cond.	<del>  '</del>	(000				arbon		6-15	4500	750	Carbon	╁╼╼┨		
Cal Al	<del> </del>		., .,		75	% FeSi		200	1-0		Cal Sil	150		
Spar Cal C	<del> </del>		8.19			SiMu		400		<b> </b>	FéCb	3-B		
Lime	4000	<del>  </del>	100		Н	C Feldn			150	150	FeB	10.10		
DoloLime	7600		, 55		M	C FeMn				50	FeTi			
NI	1					FeCr					FeV	1		
Cal Sil	<del> </del>	4-8			Mo	ly Oxide					Vitrovan	,		
	L1	<u> </u>	<u></u>			Copper					FeS			
					Argon	Log					!			
Argon Flow	Car Ones	i1			7	T				Rinse Flov				
		ية محتمد	1	Tem	peratures	3502200	BC							
Time	1430	1436	1439 15			/ (p-)		11.0			<u>-</u>			
Temp. (*F)	199	2964		33 20	y //) (7)	41222	16:01	<u>16:08</u> 2839	<del> </del>	Final N <sub>2</sub> (j	_			
Oxygen (ppm)		<del></del>	<u> </u>		· 1 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	Z 2837	770	7077		Final Tom	_			
				Chamic	ry and Bi	llot Infor				Final O <sub>2</sub> (	opm):			
Practice:	9.1		Roll No:							·				
Element		1	<del></del>	244	<del>,</del>	Chemistr	y:					1/17		
<del></del>	C	Mn	Р	S	Si	Cu	Ni	Cr	M	o s	nli	AI		
Spec.	28_	57	750	35	12	_35	Ĵέ	1/5		7	<del> </del>			
Prelim.	4	1	_5	40	0	24	8	1 6	2 - 4					
Prelim	83	30	5	30	31	2.7	6	<b>├</b> ∵	— <del> </del>	=	0	<del></del>		
'Prelim	14	3/	3	3/	20	23	8	<del>                                     </del>	1 3		<del></del>	725		
Prelim	80	15.7	É	19	20	23	8	<del>- (, -</del>	12			005		
Prelini	91	52	6	1			<del></del>	1/_	3	-70	)	25/5		
Prelim	<del></del>	1	-	<del>                                     </del>	20	JH 3	4		2	_ /0	<u> </u>	25		
Final	1.01	.57	.007	.010	. 21	. 23	00			-				
Element	AI	V	No	1 .010   ri	' <del></del>	<u> </u>	.08	.0	8 .	02 .0	010			
Final	.004	.004		<del> </del>	Žr	6	Ca	Zn	DI	Grade Co	x10. 1	47		
L	GRADE		.026 1095 MOD	000	.000	.0000	.0003	.001	6	Sample 1)	/P6	555		
<u></u>														
1 	Heat	Νυ. χ	-1289	Produ	ict Cod	 					<del>-</del>			
1	Setu	t. <u>(</u> (, i)	. A Con-	llet Si.	e Leng	ith Con	nt Ton	e Sta.		_		•		
1	et Je	597	1 5. 0	. 00X7.00	) 2	1.0	JO 31.	7 11-3	en fb¢ ¦		n⊈ •0			
1	Ü		o O			0	0 0.	()		-	. 6			
Melter L	Ti .		<b>n</b>	1 -			0 0.0				. 0			
	Oberat	ni Fedieu	ian   Ladle ii.	o. Gete No.	Heats on L	adlo i leats	s on Plug	, Da	te l	Shift H	i Ü İqəf Ni	lumber		
1 / 3 1 / 1	_			~!~	<del></del>									
419	135	114			16		16		(, (, \)	7/2	- /-	1/0		
419	135 meni No: MS-	114			Revision Date	e; 04-19-1999	16	5-11	00	13 X	-13	269		

# EAF / LMF Combined Heat Sheet

ė ·	EAF Melti	ng Log (	a.		ME The				_		neat 3	
	Start					lmenkLo		■,	W	er & Sup	ply Cons	
Last Tap		060			Car Num t Heat - Trea	-	322				ļ———	nt Used
1st Chg.	_ Dails	070	6/40	)		alment Start	530	2	Power	Meler	At Furnace	
2nd Chg.	8-105	1	54,				-	_	Electro		22090	<u>2819</u>
3rd Chg.	0.07.0	<del></del>		Curre	Preparation Time  Current Heat - freatment Stop			2	Electro		┼──	<del> </del>
Tapping Tap Temp.	08.0	080		_	Total Time o		360) 637		Electro		17	
cap semp.	1000	Totals		_					Lance :	Sections	<del>                                     </del>	<del> </del>
	Total	ime of Flea	ol: 			turn to LMI		_	Roof D	ella	014	
LMF	Ledie Weigh	<u> </u>			t. Return Wg	l. Adde	d Scrap Wgl		Wall He	at	014	·
Steel	Tare Weight		49,000 #					ᅫ	Thermo	couples	3	
Weight	Steel Weight				<del></del>	<del></del>	<del></del>	_	Sample			
									Oxyger	Probes	<u> </u>	
				laaitions	To The F	urnace a	nd Ladie	9				
T		uxes Add					Alloys Ad	ded	(lbs.)		Wire	Added (ft)
Time Size Cond	Fumece	Ladie	LMF L	MF LM	F	Time	Furnace	La		LMF L	MF Sulfu	
Slag Cond Cal A!	· <del>·</del>	1000				Carbon					Carbo	in
Spar	<del></del>	$\vdash$				5% FeSI		10	0		Cal S	
Cal C	<del></del>	<del>  </del>				SiMn		Je	70		FeCt	3.13
Lime	4000	<del>                                     </del>			— <b>!</b> ——	C FeMn					Fe8	
DoloLime	1000		<del>-  </del> -	<del>-   -</del>		C FeMn			_		FeTi	
NI	ı				<b></b>	FeCr Ny Galde					FeV	
Cal SII		4-13		_		Copper	<del>  </del>				Nilrova	an
							<u>_</u>			<u></u>	FeS	<u> </u>
Argon Flov	W Carry	- 41		<del></del>	Argon	Log						
		1				<u> </u>				Rin:	se Flow: -	١,
· Thne				Tem	perature:	s and Tim	es				!	
	0730	246	6756		- <del>-</del> -			٠,		Fin	al N <sub>2</sub> (ppm).	<del></del>
Temp. (*F)	- JEAN 9 11	2998	3064		0				_		al Temp (°F	
Охудеп (ррп	")			l							al O <sub>2</sub> (ppm)	
	1.17			Chemis	ry and B	illet Infor	mation ·		,			
Practice:	: 141		Roll No:	o 4	ч	Chemistr	γ:					
Element	C	Mn	Р	s	Si	Cu	Ni	7	Cr	140		<del></del>
Spec.	मर	61	20	25	10	10	<del>~</del>	-		Mo	Sn <sup>∥</sup>	AI
Prelim,	19	15	6	54		1 93	10	+	15	ch	<del> </del>	
Prelim	34	38	<del></del>			126	8		12-	<u> </u>	10	
Prelim	77	50	<del> </del> -	35	<u></u>	<del>-</del>		-				
Prelim		<del></del>	<del> </del> -	<u> </u>	-14	<del> </del>	<del> </del>	$\downarrow$				
Prelim	<del>- </del> -	<del> </del>	<del> </del>		<b></b>	<del> </del>	ļ	1_				
Prelim		<del></del>				<u> </u>		$oldsymbol{ol}}}}}}}}}}}}}}}}}$				
Final	90	. 55	.008	.015	73			匚				
Element	AI	.JJ	<u> </u>		. 23	. 25	.07		. 1.4	.02	.010	
Finel	<del></del>		Nb	Ti	Zr	В	Ca	7.	r l	DI (	Grade Code:	147
	003 GRADE	.004	.025     1095 MOD	.000	.000	.0000	.0003		0014		ample Type:	555
	Selit	. bl13	1095 HOD 	heduct. Size	Code	216 Count		Lac		0 (	0000 0.0 0.0	555
Meller	LMF Operet	or Ladiern	Bit Ladle No.	Gale No	<del> </del>	ndia Hent		<u> </u>			1.0	<u></u> -
9,19		185				<del></del>	— <u> </u>		Date		ft Heat	Number
	coment No: MS-		, 1 0	<u> </u>	-52		8	5	11-	17	3 211-1	354
Remarks:	18	7	<del>,</del>		Revision Dat	c: 01-19-1999				Revi	tion Level; F	
	-141	1316	ut.	<u> </u>						<del></del>		<del></del>
				<del>-</del>							<del></del>	

### EAF / LMF Combined Heat Shee

	AF Melti	na Las	771777	<u> </u>				OII	ימה	nec	1 H	eat :	Sheet
					LMF Trea	tment Lo	g (time)	<b>.</b>	Po.	ver & :	Suppl	y Cons	umption
Last Tap	Slart	Sto		w	Car Number								int Used
1st Chg.	15-1	05/		<u></u>	ast Heat - Trea	lment Stop	07:1				/	\t Furnace	
2nd Chg.	0600		23 64	200 C	rrent ideal - Tre	alment Start	an 07:19		Powe	r Meter		19490	1
3rd Chg.	12400	<del>'</del>	-461	-	Preparation	Time	(e 3vi		Electr	ode#1		13.10	11773
Tapping	06:1	1- 106	<del></del>	Ci	irrent Heat - Tre	alment Ston	<del> </del>	<del></del>	Electr	ode #2			<del>                                     </del>
Tap Yemp.	75 2		<del></del>	——    <del>-</del>	Total Time o		6.77	의 .	Electr	ode #3			<del>                                     </del>
L	<del></del>	ime of He							Lance	Sections			<del></del>
				╼╌╜╠┻╩	Reason for Ro Est, Return Wg				Roof (	Jella		14	<del> </del>
LMF	Ladie Weigh	<u> </u>		]  -	Cat. Noturn 44g	L. Adde	d Scrap Wg	<u>.                                    </u>	Wali I	leat		14	
Steel	Tare Weight		49,000#	]	<del></del>		<del></del> -		Them	rocouples		2_	
Weight	Steel Weight			]  -					Sampl		_		
*****				<u> </u>		<del> </del>		الي	Охуде	n Probes	L		
				Addition	s To The F	urnace a	nd Ladi	e					
		ixes Add	ded (lbs)				Alloys Ac	ided (	(lbs.)			Wasa	André - Cotto
Time	Furnace	Ledie	LMF	LMF	LMF	Time	Fumece	Lad		LMF	LMF		Added (ft)
Slag Cond.	<u> </u>	4000				Carbon	1			00	LMF	Sulfu	
Cal At	<u> </u>	,			7!	5% FeSI	<del> </del>	10		15	<u> </u>	Carbo	
Spar	<del> </del>		L			SiMn	<del> </del> -	100 35		رد		Cal S	
Cal C	177				н	C FeMn	1	<u>  ~ 2</u>	<del>-</del>	100		FeCb FeB	100
Lime	4000				М	C FeMn			-			FeTi	┥━—╣
Dolat Ime Ni	ļ					FeCr			-			FeV	<del></del> -
Cal SII	<del> </del>				Мо	iy Oxide			$\neg \vdash$		<u> </u>	Nitrova	<u>,,                                   </u>
CBI SII	<u> </u>		<u> </u>	l		Copper		L				FeS	<del> </del>
					Argon	Log							
Argon Flow	2.42.41	a					T				2:		
					nnde-tur-		<u></u>	L		<u>-                                    </u>	Rinse F	low: *	
Time	01278	none		1.	riperature:	o ana Tin	les	4				:	1
Temp. (°F)	2941		in france.	<del></del>				٠.	$\Box \Gamma$		Final N	/ <sub>2</sub> (ppm):	
Oxygen (ppm)	\ <u>^</u> 771	3024	<u> </u>	<del></del>	0 -	<u> </u>	<u> </u>				Final T	emp (*F)	1:
1000	<u></u>					<u></u> ;		L			Final C	) <sub>2</sub> (ppm):	
				Chemi	stry and B	ilet Infor	mation						
Practice:	147	7	Roll No:	nul	4	Chemistr	у: -	Ł.					
Element	С	Mn	P	S	Si	Cu	Ni	<del>Ť</del>	Cr	AA-		Snl	
Spec.	95	<b>ケ</b> ワ	070	025	<del></del>	<del></del>	<del>: </del>	+	<del></del>	Mo			AI
Prelim,	1	10	1	49		35	20	12	<u> </u>	06	_	20	
Prelim	611	- (C	<del></del>		1 1/	23	1-7	4	9_	<u></u>		9	
Prelim	38		<u> </u>	3/4	1 0	<del> </del>	<del> </del>						
Prelim	100	57	<del>- </del>	18	177	<u> </u>		1.			1		
Prelim	<b> </b>		<u> </u>	<del> </del>									<del></del>
			<u> </u>	ļ						<del>                                     </del>	_		<del></del> -
Prelim								-		1			
Final	. 92	. 56	.006	.014	.22	. 22	.07	1	.11	1	02	.009	
Element	ΛΙ	V	Nb	Ti	Zr	В	Са	Zr	7	DI.			147
Final	.003	.003	. 030	.000	.000	.0000	.0007	l	013		<del>-</del>	e Code:	147 555
	GRADE			U	<del>'</del>			<u> </u>			Lampi	ra (AD#)	لــــــــــــــــــــــــــــــــــــــ
	 	 g. X-1		Frade	ct Code	775							· <b></b>
	Selit	w.o.	t Bil	let Siz	e reuari Geraas	laich h-Coimh	. Fores	SI a	<b>15 p</b> = 1	<b>.</b> ⊊	es Tar		1
i 	11	2803	4.7	15X8.00	200	4.2	44.4	1 !	•			ns ,0	!
	1:	0				) (	0.0			,	0 ÷	. 0	[
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Melter (	MF Operate	or Ladien	nan Ladia N	lo. Gale No	D. Heets on L					<del>·='</del>	<u> ^</u>		
911		<del></del> -			7		on Plug		Date		Shift	Heat I	Vumber
<u> </u>	ment No: A45-	123	<u> 下一10</u>		1 4		4	5-	11-	a V	1/7	X-1	1/8
		/1)		<del></del>	Revision Date	c: 06-19-1999	T				Revision	Level: F	- wo
Remarks:									=		===		
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<del></del>						<del></del> -	<del></del> -				<del>-</del>		

Ca 75% S HC MC MC Ca Argon	ment Stop Of ment Stop Of ment Stop Of Ment	Ladle	3-B3 00 3	#1 #2 #3 ctions	Al Fu	13	sed At LMF							
Last Heat - Treatment Current Heat - Treatment Preparation Time Current Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Total Time of Heat - Treatment Time of He	interest Start  me  interest Start  me  interest Start  interest Start  interest Start  interest Start  Added Scr  interest Start  Added Scr  interest Start  Allo  interest Start  interest S	Ladie  Ladie	Electrode Electrode Lance Se Roof Delf Wall Fleat Thermood Samplers Oxygen F	#12 #3 stilons suples trobes	0,0	Wire A. Sulfur Carbon Cel Sil FeCb	dded (ft)							
Current Heat - Treatm Preparation Tim Current Heat - Truatm Total Time of He Reason for Return Est. Return Wgt.  Additions To The Fu  Ca 759 S HC Moh Argon Temperatures	In to LWF / F  Added Scr  Added Scr  Added Scr  Allo  FeSI  SiMn  FeMn  FeCr  by Oxide  copper	Ladie	Electrode Electrode Lance Se Roof Delf Wall Fleat Thermood Samplers Oxygen F	#12 #3 stilons suples trobes	0,0	Wire All Sulfur Carbon Cel Sil	dded (ft)							
Preparation Time Current Heat - Trustm Total Time of He Reason for Return Est. Return Wgt.  Additions To The Fu  LMF	Inne () Inne (	Ladie  Ladie  Furnace	Electrode Electrode Lance Se Roof Delf Wall Heal Thermocc Samplers Oxygen I	#2 #3 stilons suples Probes	0,0	Wire All Sulfur Carbon Cel Sil	dded (ft)							
Current Heat - Truatm  Total Time of He  Reason for Return  Est. Return Wgt.  Additions To The Fu  QUE  LMF LMF To  S  HC  MC  MC  Argon  Temperatures	Into LMF / F Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr  Added Scr	urnaco rap Wgt.  Ladi'e  Oys Adde	Electrode Lance Se Roof Delf Wall Heal Thermock Samplers Oxygen I  d (Ibs.) Ledie L	#3 citions ruples robes		Wire Ad Sulfur Carbon Cal Sil								
Additions To The Full St. Return Wgt.  Additions To The Full St. Return Wgt.  LMF LMF To Ca 7557  S HC MC MC Full St. Return Mc Mc Mc Mc Mc Mc Mc Mc Mc Mc Mc Mc Mc	Added Scripton Added	Ladie	Lance Se Roof Delf Wall Heal Thermood Samplers Oxygen I  d (lbs.) Ledle L 300	etions  robes  robes		Wire Ad Sulfur Carbon Cal Sil								
Reason for Return Est. Return Wgt.  Est. Return Wgt.  Additions To The Furnamental Control of the Furn	Added Scripton Added	Ladie  Oys Adde	Lance Se Roof Delf Wall Heal Thermood Samplers Oxygen I  d (lbs.) Ledle L 300	etions  robes  robes		Wire Ad Sulfur Carbon Cal Sil								
Est. Return Wgt.  Additions To The Fu  Do Ca  75% S HC  Moh  Argon  Temperatures	Added Scri	Ladie  Oys Adde	Roof Delf Wall Float Thermood Samplers Oxygen F	robes		Wire Ad Sulfur Carbon Cal Sil								
Est. Return Wgt.  Additions To The Fu  Do Ca  75% S HC  Moh  Argon  Temperatures	Added Scri	Ladie  Oys Adde	Wall Heat Thermock Samplers Oxygen F  d (Ibs.) Ledle L  O O C	Probes		Wire Ad Sulfur Carbon Cal Sil								
CMF LMF TO Ca 75% S HC MC MC F Moly Co Argon	Allow Allow	Ladie bys Adde	Thermock Samplers Oxygen F Oxy	trobes		Wire Al Sulfur Carbon Cal Sil FeCb								
CMF LMF TO Ca 75% S HC MC MC F Moly Co Argon	Allocation Allocation	Survey Su	Samplers Oxygen F  d (Ibs.) Ledie L  3-00	MF OO O	LMF	Wire Ad Sulfur Carbon Cal Sil								
CMF LMF TO Ca 75% S HC MC MC F Moly Co Argon	Allocation Allocation	Survey Su	Oxygen I	MF 00	LMF	Wire Ad Sulfur Carbon Cal Sil								
CMF LMF TO Ca 75% S HC MC MC F Moly Co Argon	Allocation Allocation	Survey Su	d (lbs.) Ledie L 3-33 00 3	MF 00	LMF	Wire Ad Sulfur Carbon Cal Sil								
CMF LMF TO Ca 75% S HC MC MC F Moly Co Argon	Allocation Allocation	Survey Su	d (lbs.) Ledie   L 3 - (3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	MF 00	LMF	Wire Ad Sulfur Carbon Cal Sil								
CAF LMF TO CA 75% S S HC MC MC Argan	rime Farbon W. FeSI SiMn C. FeMn C. FeMn FeCr Ily Oxide Copper	Furnace S	3-B3 00 3	00	LMF	Sulfur Carbon Cal Sil FeCb								
CAF LMF TO CA 75% S S HC MC MC Argan	rime Farbon W. FeSI SiMn C. FeMn C. FeMn FeCr Ily Oxide Copper	Furnace S	3-B3 00 3	00	LMF	Sulfur Carbon Cal Sil FeCb								
Ca 75% S HC MC MC Argan Temperatures	Arbon W FeSI SiMn C FeMn C FeMn FeCr Iy Oxide Copper	5	3-B3 00 3	00		Carbon Cal Sil FeCb	3-0							
75% S HC MC MC Moh Argan	% FeSI SiMn FEMn C FeMn C FeMn FeCr Iy Oxide Copper		00 3 300	0		Cal Sil FeCb	3-6							
S S HIC MC MC F Moly Co	SiMn FeMn FeCr ly Oxide copper		300			FeCb	3-0							
Argon Temperatures	C FeMn C FeMn FeCr ly Oxide copper			50			ع- تن∔							
Argon Temperatures	FeMn FeCr ly Oxide copper		/_	50		Leg .	1							
Argon Temperatures	FeCr ly Oxide copper					FeTi	<del>-</del>							
Argan Temperatures	copper					FeV	<del></del>							
Argon Temperatures	Log		- 1				+							
Argon Temperatures	Log					Nitrovan								
Temperatures						FeS	<u></u>							
				1	Rinse F	low:	•.							
	- stord Times					,								
	s and Time					<u> </u>								
3233 (8770)														
t					Final To	emp (°F)	:							
·					Final O	<sub>2</sub> (ppm):								
Chemistry and B	illet Inform	ation			•	-								
	Chemistry													
0 9 9				T										
S Si	Cu	Ni	Cr	Мс	<u> </u>	Sn <sup>ll</sup>	AI							
025 17	35	20	1.5	100	6.	20								
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0 4	38		-/-	$-\alpha$		<b>U</b>								
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7 .010 .20	.20	.07	.14	7.	72	.009								
Ti Zr	B	Ca	Zn	Di		T	147							
	1.0000		.0013			00 CO08.	555							
1 ,000	1.0000		1		320	pie rype.								
	1.0	В	B Ca	B Ca Zn	B Ca Zn Di	B Ca Zn Di Gra	B Ca Zn D! Grade Code:							

∍ntucky	y Elect	ric S	teei	, Inc.			EAF	7 LN	WF Co	on	nb	inęd	He	at S	heet
EA	F Weltin	g Log	(tim	e)	Ù	LM	F Treatm	<del></del>			_				mption ·
[	Start	St	op	Scrap	w.		Car Number		1	Ē				Amount	
ast Tap		23	45		_]	Last H	est - Trealme	nt Slop	05129	,			At I	urnace	AI LMF
'st Chg.	03/3	049	<u>/3</u>	7/4	00	Current	Heai - Treair	nent Start	0512		Pow	Maler	21	900	8450
nd Chg. Ird Chg.	04:17			44,		P	reparation Ti	me	5011	4	Elect	rode #1			
Fapping	0505	0.60				Current	Heat - Treats	nent Stop	06:14	7	<u> </u>	rode #2			
ıp Temp.	0505 3055	- 1	D els:			Te	olal Time of I	fent	007. 7	7	<del>-</del>	rode #3			
	Total Ti			J		Reas	on for Retu	th to LME	F / Furnace	=		e Sections Delta		7	
LIME ! L							Return Wgt.		d Scrap Wgt,		<b> </b>	Heat	-17	<del>]</del>	
	edle Welghl				4	L					Ther	mocouples		<del></del>	3
	are Weight		49,	# 000	4						Sam	plers			9
Veight s	ileei Weight										Оху	gen Frohes			
					Add	itions T	o The Fu	rnace a	nd Ladle	Ē					
	· · · · Flu	ixes A	habb	(lhe)			177			_	///	<u></u>		1 111	4 1 1 1 1 1 1
Time	Fumace	Ladie		LMF	LMF	LMF	<del></del> /-	<u> Ofter</u>	Alloys Ad	_	(IDS.	) LMF	, , , , , ,	-	Added (ft)
ilag Cond.	<del></del>	<del> </del>		0/40		-		inpon	, umace			77-	LMF	Sulfu	
Cal Al		1,00		-B		+-		6 FeSi		1	3	70		Carbo	
Spar				- C		+		iMn	1		00	30		FeCb	
Cal C			_ra.			<del>                                     </del>		FeMn	┪╸	اسكر	טע.	120		FeB	
Lime	4000		1.3	00	,		. MC	FcMii				76.0		FeTi	-
Dolotime	7						F	eC1						FeV	
NI .	l ·	220	2				Moh	Oxide						Nitrova	1 3-R
Cal SII	<u></u>						Co	opper						FeS	
							Argon	Log							
rgon Flow	2 4 Kinson	-3.	丁	· ·		$\overline{\top}$	T	T .	T		=		Rinse f	low:	
						Tem	eratures	and Tie	nac						
Пто	0 00	100	<i>[2</i> ]	1,00	•	· I· · ·	100	T :: ::	11.56					i	
Temp. (*F)	195:38	1		. ,,,,	<u>.                                     </u>	+	•	<del> </del>		ļ.,				<sub>2</sub> (ppm).	
tygen (ppm)	3871	291	<del>2   -</del>			-	<del>  •</del>	<del></del>		_			-	emp (*F	
7	<u> </u>	1	l	1		(2000)	u ovet Di						Final	2 (ppm)	<u> </u>
							y and Bi								
ractice:			_	Roll No	): (	244		Chemist	try:						
Element	C	М	n	P	_ _	S	Si	Cu	Ni	_	Cr	M	0	Sn <sup>1</sup>	Al
Spec.	14	111	2	020		25	22	25	30		20	20	6	23	
Prelim	19	11	_	4		49	2	22	8		8	2		8	
Prelim	9	9	/			38	22		26	1	14	9			
Prelim	13					17									
Prelim															1
Prelim										$\top$		_	— <del> </del> -		
Prelim								<del> </del>		+					1
Final	.13	1.	02	. 00	8	.014	. 24	.24	.27	+	•	12	.02	. U.LU	†
Element	AI	T	/	Νb	Ť	Ti	Zr	₿	Ča	十	Žn	DI	7	10 C	413
Final	+.006	.0	50	.00	- 1	.000	.001	.0000	1	+	. 00.	_1	$\overline{}$	de Code: ple Type:	555
	GRADE			A572⊐	3R760	CA	L		<del></del>			<del></del>			
		:		<u>-</u>			. Code	224							
	Heat   Solit		). 1						t Tons	51	ack	1Scr	e to	ns	 
	• • • • • • • • • • • • • • • • • • • •	256	15		75X		503	4:	2 46.3	11			0 0	. Ģ	i
	β 1		0				0		0 0.0					.0 .0	1
. <u></u>	۱. ـــــــــا <sup>ا</sup> لــــــــــــــــــــــــــ	, -	<u>,                                     </u>				0		0.0		<b></b> -	<b></b> =	-	.0	
Moller	LMF Oper	etor L	dlem	en Ledi	e No.	Gate No.	Heats on	Ledle He	ets on Plug	Ĺ		ale	Shift	Heat	t Number
973	21	5-	170	1 2			1-1-	<del></del> i-	15	7	5-7	1-00	1/- 7	7 - V	11/7
no De	cument No: N	45-01)	<u> </u>	<u> </u>			Revision De	1e: 04-19-19	99	<u>.</u>		-00	<u> </u>	يك	144
Rotnorks:				<del></del>		<del>_</del>							REVISIO	m lzvel: F	
- I MERTING I JAME															

entuck	ky Elect	tric Ste	el, Inc.			EAF	/LI	VIF C	or	nb	ined	He	at S	heet
, · E	AF Meltir	ng Log (	lim		LMF	Treatmen								Imption :
<del></del>	Start	Slop	Scrap	M,	-	Car Number		2	=				Amoun	
ast Tap		02:2			st He	at - Treatment :	Stop	0413	7			ALI	Furnace	ALME
Ist Cha.	102:50	03.2	0 71,2	i		eat - Trealmeii			1	Pow	ar Meter		150	
2nd Chg.	12323	-	44,	-	- · ·	paration Time		01/6	님	Elect	rode 31		DO	3000
3rd Chg.	ļ <u> </u>	_	/	-				33/3	7	Elect	rode #2			
Tapping	0415	04:2	0			eal - Trealmen		05/2	2	<b>}</b>	rode #3			
ap Temp.	3453	Totals			Tota	I Time of Heat	_	İ		I <del></del>	e Sections			
	Total Ti	me of Fles	ıl:	R	easor	ı for Return (	to LIM	/ Furnace		I	Della		112	
LMF	Ladie Weight	<del></del>			st. Re	lum Wgl.	Adde	d Scrap Wgl		<b> </b>	Heat			
	Tare Weight		40.000.0							<u> </u>	mocouples	-10	17	
			49,000#	. 1					_	<u> </u>	plers			3
Weight	Steel Weight								-	Oxy	en Probes			<u> </u>
:	1		4	Addition	- F	The Furna	1800	المحالأ						
<u></u>	Flu	ixes Add	nd (lhs)				7 7					· ·	8	
Time	Fumace	Ladle		LMF (	MF	350		Alloys Ad			<del>)</del>		Wire	Added (ft)
Slag Cond.		<del>,  </del>	<del></del>		anr.	Tirrie		Fumace	1.0	die	LMF	LMF	Sulfur	
Cal Al	<del> </del>	1,000	20/40			Carbon		<u> </u>	<b> _,_</b>		30		Carbo	1
Spar	<del>  </del>		3-B			75% Fe	SI	<del> </del>		5			Cal Si	
Cal C	<del>  </del>		3-c	<del>-  -</del>	<u> </u>	SIMn		<del> </del>	<b>[</b> [3	00			FeCb	
Lime	4000		244			HC FeW		<del> </del>	<u> </u>		100		FeB	
DoloLkne	4,000	<del></del>	300			MC FeM	46	<del> </del>	<u> </u>				FeTi	
NI		220	<del></del>	70.4	·	řeCr		<del> </del>	 				FeV	
Cal Sil	<del></del>	<i>840</i>	/	B0 4		Maly Oxi		<del> </del>					Nitrova	" 3-B
	_li					Сорре	<u> </u>	⊥					FeS	
	<del></del>					ArgoniLog	7						i i	
Irgon Flow	149	-, 41					,				$\equiv \equiv$	Rinse F	low:	
				Te.	npei	alures an	a Tin	les		,				
Пта	04/37	04:51	05:09	1 1 11 1				<del></del>	,					<u></u>
Temp. (*F)	2875	27/6	2880							$\dashv$	<del></del> +	Final N		
xygen (ppm)		<i></i>	3, 20		-		<del></del>	<del>                                     </del>	ш.		<del></del>	Final Te		:
				Chemi	3/2/2	and Billet	Infar	1				Final O	(ppm):	
ractice:	4//=	3	Roll No:				mistr		-					<u>.</u> .
Element	Tc	Mn	P	04   s	<del>7</del>			<del>,</del>						
Spec.	1//	<del> </del>	<del> </del>			Si	Cu	Ni	1	Cr	Мо	)	Sn <sup>lt</sup>	Al
Prelim	1/2	1/0	020	025		22/2	3.5	30	$\perp$	20	06	,   -		ر
<u>-</u> -	<i>(e</i>	17	<b>├</b> /	70		2	8	8		8	2		2	
Prelim	10	196	<u> </u>	23	<u> </u>	24		18	1	سى ا	4		<i>~</i>	
Prelim	14	1.00		14		7.2		27	1,	ر بی ر				<del></del>
Prelim	<u> </u>				T			<del>  ^ </del>			-			
Prellm					+	<del></del>		ļ ·-	-					
Prelim					$\dashv$			<del> </del>	-		-	_		
Final	.15	1.05	.007	.010		.22	.28	.2.		1	0	.02	.014	
Element	Al	V	Nb	<u>;                                    </u>	=	Zr	B	Ča	上					<u></u>
Final	+.004	.054	.000	.000			0000	<del>0010</del>		Zn <del>: 001</del>	DI	Grade		413 555
	GRADE	.l <u></u> _	1-A572-GI	<del>ι∤60 .cv</del> -					<u>L</u>		ľ	Sample	Туре:	200
	वस्त उद्यो								<b>-</b>					
	Stit	B.O.		Produc d Sima	t C	nde 22K								, 7
		5982	4.75	X8.00	1 - 12	იონი <b>C</b> ი იონი <b>C</b> ი	96 <b>t</b> 45	100s (	ita	2 k 1				'!
	R C	9 0				0	0	11.0	L " ,	:	0.0	0.0		1
<b></b>	fic	ő				0	0	0.0			0	0.0		1
Moller	LMF Operat	or Ledian	100 / 5-7		<del></del>	<u> </u>	<del></del> -	<u> </u>	_=:	<u></u>	'	<u>_ 2 .o.</u>		1
CY 177	G Speral	Lachan	nan Ladia N	u. Gale (i	o.   He	on Ladie	Heet	s on Plug		Dat	e	Shift	Heat I	Vuniber
1/3	215	<u> </u>	218			<u>, 32</u>	13	7.3	5	-//	- 610	1-17	115-1	2450
	ument No: MS	01)			A	esition Date: Od.	19.1979	<u></u>	<del></del>		ביצביון	Revision I	Avel: F	1.1.1/
Remorks:	Link		oftie	~									<del></del>	<del></del>

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\$(150.00) \$(150.00)

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			·-			<u></u>	\	INIT C	or,	nb	inec	I H	eat S	heet
7	EAF Meltii	ng Log (	(time)		··L	MF Trea	lment L	og (time)		Po	8	SUpp	ly Cons	imption:
Last Yap	Start	Stop	_ 1	w.		Car Nurr	ber	1				Ī	Amour	
1st Chg.		el:		[	Last	Heat - Trea	lment Slop	03%	7			-	At Furnace	ALLME
2nd Chg.	-01:-12	102:2	0 /3	60	Currer	nt Heat - Tre	alment Sta			Pow	er Meler		2412	9775
3rd Chg.	02:22	<b>-</b>	-42,			Preparation		6.210		Elec	Irode #1		ANIVO.	011
Tapping	0317				Currer	nt Heat - Tre		4200	2-4	Elec	tro-le #2			_
Tap Temp,	03:10			}				04/13	211	Elec	trode #3	7		
The Temp.	305					Total Time o				Lanc	a Sections			<del></del>
	Lotal II	me of He	et;					MF / Furnac	е	Root	Delta		13-	
LMF	Ladie Weight			│ <b> </b> }	Est	. Return Wg	t. Ad	ded Scrap Wo	žt.	Wall	Heat	_	12	
Steel	Tare Weight		49,000 #	Ł						Ther	mocouples	-		2
Weight	Steel Weight				<u></u>					Sam	plers	<u> </u>		,
										Оху	gen Probes	-		
				Additi	ons.	To The I	Furnáce	and Lad	  a					····
	FIL	ixes Ado	ied (lbs)					Alloys A		///			:	
Time	Fumaca	Ladie	<del></del>	LMF	LMF		5 Of U	<del></del>	<del></del>			,		Added (ft)
Slag Cond.		1,000	60/40					Fumace	1.	dle	LMF	LMF	Suffer	
Cal Al	<del>  </del>	HUOO	3-8				Carbon		-	_,	40		Carbon	
Spar	<del>   </del>		4-0				5% FeSI		12		30		Cal Sil	150
Cal C	+		7-0		<del></del>		SiMn		130	20	·		FeCb	
Lime	4,000	-	·D + 3				IC FeMn		<del> </del>		125		FeB	
DoloLime		<del>-</del>	300				IC FeMn	_	↓				FeTi	
NI		220				┛	FeCr		<u> </u>				Fe∨	
Cal Sil	<del></del>	<u> </u>	·- <del>  </del>			<del></del>	oly Oxide	_	↓				Nitrova	313
				l			Copper		1			_	FeS	
4 5	<u></u>					Argor	Log							
Argon Flow	7 7 9 7 9 15	en.	<u> </u>						T			Rinse	Flow:	٠.
					[emj	erature	s and Ti	mes					,	
. 11me	03130	09:08	ra Sagar I	· · · ·		7	T	·   · · · ·	7,	Ŧ		51. 1		
Tamp. (°F)	2928	29/3				8			-	$\dashv$			N <sub>2</sub> (ppm):	
Oxygen (ppm	"					-		- <del> </del>	├	╌┼			Temp (°F):	
				Che	nist	v and E	illet lefe	rmation				F11781	O <sub>2</sub> (ppm):	<u></u> _
Practice:	4/1:	٦	Roll No:	4-										
Element	Tc	Mn	P	$\frac{O}{C}$	14		Chemis	<del></del>						
Spec.	<del> </del>	<del> </del>	<del></del>	S		· Si	Cu	Ni		Cr	Mo	2	Snil	AI
	14	110	020	02	2	22	23	30	.   _	20	00	/		
Prelim,	17	_//_	1.3_	4	$\leq$		121	9		9	7	_ -	9	
Prellm	- 9_	91		2	9	22		23	. 1,	7:	4	$\dashv$		<del></del>
Prelim		<u> </u>				<u> </u>			+~		<del>-</del>			
Prelim	j						<del>                                     </del>	<del></del>	-		<del>-</del>	-		
Prellm					_		<del> </del>		+	—-	<del></del>	-+		
Prellm	.14 1	01	.007	 			-					_		
Final	1	ļ	-	<u> </u>		21	21	- 29	10	<del>}</del>	-1.02	<del></del>	10	
Element	004 11+.0	75 V	. 000 Nb (	1 7			<u> </u>	<del> </del>	<del></del>		<u> </u>	<u>_T</u>		
Final FR		A57	//-GR/60 (	000 7	0	00 Zr 01	no <sup>8</sup> _	Ca 1010 +	0014	?n	DI	Gra	de cásts	
	-J	L	1	1	l		<u> </u>	<u> </u>			<u>.                                    </u>	Sam	ıple Type: 55	5
<u> </u>	*5*		_ <u>:</u>											
	lleat M Sriit	o. X-1 8.0.		ელიქ იქილიქ	iuct	Собе	22K							
	Δ	5700	4.77	et 5: 5X8.0	ze o	Lengti acc	т Соцы	Llons	Sta	cl.	_			
	<b>[</b> *	0	* * * .	224 E. F. 4 F.	V	209		9 42.7 0 0.6	fl⊸	.5			. 3 . 0	
	t' n	0.0				i,		0.0			, ,		.0	
Maller		<u></u>	<del></del> -	<del></del>	<del></del>			222	<u></u>	·			<u></u>	
(1 (2)		or Ladien	nan Ladie N	o. Gate	No.	Heats on	Ledle He	els on Plug	I	Dat	е	Shift	Heat N	lumber
7/3	<u> 215</u>	146	110	_		、ラ		₹	人。	//_	.00	11 12	l l	- / /
Doc	ument Nn: MS-	013				Revision Pa	le: N4.19.199	<del></del>	<u> </u>	4	المرك	<u> </u>	<u> 12-1.</u>	1. 4.4
Remarks:				· · · · · · · · · · · · · · · · · · ·			<u>-</u>	<del></del>	:		<del></del>	Kevirin	in Level: F	<del></del>
								· · · · · · · · · · · · · · · · · · ·						
	<del></del>	<del></del>												

EA	F.Meltin	g Log (t	me '		LMF	Treatme	ent Log	(time)			er & S	upply	Consu	mption
	Start	Stop	Scra	p Wt.		ar Number		9	֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓				Amoun	<u>*</u>
Last Tep		00:50	5 -	==1	<b></b>	ıl - Trealmer	nt Stop	12123	4			At F	urnece	ALLMF
1st Chg.	1:05	01:25		200	·	eal - Treatm			7	Power	Meler	2	2390	2000
2nd Chg.	1/130		45		! <del> </del>	paration Tim		02:33		Electro	de #1		-710	
3rd Chg.			7		}	eat - Treatm		47/47	4	Electro	de #2			
Tapping	12:20	02:20	5		l	i Time of He		23/18	4	Electro	de #3			
Tap Temp.	3055	Totals:					1			Lance	Sections			
1	Tolai Tin	ne of Heat	t:			for Retur				Roof		- 6	11	
LMF L	dle Weight			٦	ESI, RE	lum Wgt,	Added	Scrap Wgt.	-	Wall H		4	11	
Steel T	re Weight		49,000#	7	ļ		ــــــــــــــــــــــــــــــــــــــ		ᅫ	-	occuples			3
Weight S	el Weight			٦					_	Samp				-2_
									_]	Uxyge	n Probes			
	- 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	, -, i.		Ado	litions To	The Fu	nace an	d Ladle						
		xes Add	ed (lbs)			23	altinA	lloys Add	led	(lbs.)			7==	Added (ft)
Time	Fumace	Ladle	LMF	LMF	LMF		me	Fumace	_	dle	LMF	LMF	Sulfu	<del></del> -
Slag Cond.		1000	60/40			Cer	bon	<del></del>	_		110	30	Carbo	
Cal Al		,	2-B			75%	FeSI		う	50			Cal S	<del></del>
Spar			2-C			SI	Мя		1	50			FeCt	
Cal C						HC I	FeMn						FeB	
Lime	4,000		300			МС	FeMn			-			FeTi	
DoloLima						Fe	oCr.						FeV	
NI	1					Moly	Oxide						Nitrov	an
Cal SII		l		<u> </u>		Co	pper						FeS	
						Argon L	.og							
Argon Flow	7 g Wyen	40.7			<del></del>	T				T		Rinse F	low	
					Tame	177777	rdect Spire		_			7 (1136 )		
Time	-	40111	40/		rempt	ratures	ans im	es	_				<u> </u>	
	02,44					<del>                                     </del>			··			Final N		
Temp. (*F)		2963	2703	-		·		<u> </u>	_			Final T	emp (*F	7:
Oxygen (ppm)						<u> 1 </u>	<u> </u>	<u> </u>				Final C	) <sub>2</sub> (ppm)	):
					Chemistry	and Bil	let Infor	mation						7.
Practice:	12	0	Roll N	io:	044	C	hemistr	y:						
Element	С	Mn	P		S	Si	Си	Ni	T	Cr	M	o	Snll	AI
Spec.	34	.70	0	6	245	20	7.	7	+	+ 11	/   _	<del>-   .</del>		-
Prellm,	177	十分之	1/2	7-16	- 17	ار کر کر ست	35	70	<del>- -</del>	14	100	2	<u>ي ي ج</u>	
Prelim	22	1/3	<del></del>		7	اري و	20	<del></del>	+	1-/	-1-2	-	8_	<del> </del> -
Prelim		63		$\dashv$	19	28		ļ	- -			<u></u>  -		
Prelim	30	<del></del>			15					<u> </u>	_	-		<u>  </u>
Prelim			-	<del> </del> -				<u> </u>	_ _		_ _			
	-		<u> </u>								_			
Prelim Final	. 33	- 24		<del>,</del>	013	- 76		ļ	4					
	· <u>L</u>	.64			.012	. 29	. 20	.07		. 14	<u> </u>	02	.009	
Element	Al	V	N		Ti	Zr	8	Ca	Γ	Zn	DI	Gra	de Code:	120
Final	GRADE	.003			.000	.000	.0000	.0021		.001.			pla Typa:	555
	GIVADE		1035	ΔŲ										
	Heat	. Ho. l			Produc									
1	Sr1i	t B.	0. +	Bill	et Size	. Lens	եՒ Շօս	nt Ton	9	Star	k 18c	ran	Fores	
i	A B	597	7.6 0	4.7	5 KB . 00	23	38	34 40,	9	11-3		?	10.8	
t .	C		0				0	0 0.				9	$0.0 \\ 0.0$	
<u>.===</u> .	n		<u>^</u>				^	0	-			_ A	3 /3	
Moller	LMF Open	etor Ledle	emen Le	dle No.	Gale No.	Henis on L	ndle 11.	ls on Flug	Ē	Da	le	Shift	Hen	t Number
973	215	<del></del>	19	<u>D.</u>		30		2 2	<u> </u>	-11		11 17	7/22	1-1-
	ument No: N		-1-1-9	~	<u> </u>		e: 01-19-1999	30	<u>ب</u>	11	00	11-/	$\frac{1}{1}$	1351
Remarks:						00-1110 <b>0</b> 1/40			_			Revision	m Level;	F <del></del>
	-				<del></del>									
1														

; E	AF Weltin	g Log (ti	me)		LM	F Treatm	ent l	Οġ	(time)		Po	8.5	uppl	. Const	mption :
	Start	Stop	Scra	WI.		Car Number		7	. 1	٦				Amoun	====
ast Tap		23:20	<u></u> ر		Lastile	al - Trestme	nt Sto	,  -	0110	7			A	Furnace	ALLMF
Ist Cha.	23:43			100	<b></b>	inst - Trentm			01:20		Powe	er Meter		21710	31.25
nd Chg.	20:23		\$3		<b></b>	eparation Tin		-4	<u>01/2:</u>		I	rode #1		7//	<u>~".4.7</u> .
ard Chg.	<u> </u>	ļ			ļ	<del></del>			30118		Elect	rode #2			
Tapping	0/1/2	0/120			<del></del>	teat - Treatm		op /	22/3	2]	Elect	rode #3	_		
ар Тетр.	13035	Totals:			<u> </u>	lel Time of H				_	Lanc	e Sections			
	Total Tim	ne of Heat	:	]		n for Retu					Roof	Della		611	
LMF I	Ledle Weight	7		7	Est. R	olum Wgl.	^_	dded	Scrap Wgl.	71	Wall	Fleat		011	
Steel	Tare Weight		49,000 #	-						儿	Ther	mocouples			4
Veight	Steel Weight			-{	<b> </b>					_	-	plers	_		
					<u> </u>	<del>-</del>					Оху	gen Probes			<u></u>
***		Congrue		-Add	tions T	The Fu	nac	ë an	d Ladle	2	:	100			
·	Flux	xes Adde	d (lbs)			T		A	lloys Add	led	(lhe	1		W/re	Added (ft)
Time	Furnece	Ladle	LMF	LMF	LMF	T.	me	<del>-</del>	Fumace		dle	LMF	LMF		<del></del>
ilag Cond.	<del></del>	1,000	50/40		<del></del>	<del></del>	rban					100	30	Sulfu	
Cal Al	1	11000	2-13		+	-f	FeSI			7	50	JUA	3.4	Cal S	<del></del>
Spar	1		3.0		<del>                                     </del>		Mn			1/2	10	70	1.2.2	FeCt	<del></del>
Cal C	1			<del></del>	<del> </del>		FeMn			75	νυ.	220	<del> </del> -	FeB	
Lime	4.000		300		<del> </del>	MC	FeMn					SACU	<del>                                     </del>	FeTi	
DoloLime						Fe	•Cr						<del>                                     </del>	FeV	<del>                                     </del>
Ni	1					Moly	Oxida							Nitrova	ın
Cal SII						Cor	pper							FeS	
				-		Argon L	00								
rgon Flow	7 8 kg	· jacje	Ţ			T CAN		<del>-</del>		==			0		
							<u> </u>	1		_		<u> </u>	Rinse	Flow: •	٠.
=						eratureș	สทฃ	Tim	ęs	_			•	j	
Time	2915	01/47	02117	02.3	3				·	٠.			Final	N <sub>2</sub> (ppm)	
Temp. ("F)	2915	2925	1872	292	7	• _							Final	Temp (°F	):
xygen (ppm	<u> </u>				<u> </u>	<u> </u>	<u> </u>	l	<u></u> _l			<u> </u>	Final	O₂ (ppm)	:
				C	nemistr,	y and Bil	let In	forr	nation						
ractice:			Roll No	:_ <i>L</i>	44	′ c	hem	istry	<b>/</b> :						
Element	С	Mn	P		S	Si	С	u	Ni	T	Cr	M	lo	SnII	AI
Spec.	19	80	020	50	30	22	7.	T	20	+	20	00	<del>-</del> +	20	<del> </del>
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Prelim	<del></del>	<del> </del>	<del> </del> -						<del> </del>	- -					<del> </del>
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Final	+	60	00	<del>,  </del> -	013			70	.05	$\downarrow$		<del></del>	- <del>0+</del>	.008	
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Final	.003	.002	A 36	0	.000	.000	.00	00	.0014		.00.1	. 3		nple Type:	555 
_ ~ ~ = :	GRADE		A36					_		_					
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	A B	5977 0	4.	75X8	.00	219 0		16	47.4 (	1 () =	.5			, e , e)	
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134	ocument thi: M!	1 - 1 - 1 5-013	<u> </u>	<u> </u>		Revision Date	. 04 17	.1929		<u>:-</u>		UC	111		765
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asi Tap	-	Start	<u> </u>	op :	эстар	VVI.				<u> </u>	-			A1 E	urnace	AI LMF
st Chg.	-	:42	_	28	83.1			t - Treatment		20,21	-[ 1	Power Me	ler	<del></del>		1700
nd Chg,		3,35		10	33.			at - Trealme		1:15		Electrode		-1/2	410	1/2
d Chg.	- <del> </del>	ررير	-		221		Prep	paration Time	9	11/15	_	Electrode		+		-
apping	100	0:58	00	• / 6			Current He	eat - Treatme	nt Slop	) //a <u>"</u>	3	Electrode				4-
n Temp.		055		رين tals:			Tota	Time of He	af		٦	Lance Se		_		
	-1	otal Tim	٠		<u> </u>		Reason	for Retur	to LMF	Furnace	ň	Roof Delt			10	
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iteel	Tare \	Weight		49	,000 #						7	Samplers		<del></del>		2
eight	Steel	Weight									-	Oxygen f	robes		- <del>-</del> -	
·							70	Y 4	Living to	11-7						
	·					Ada	litions To	The Fur	naco an	d-Ladle					:	
		; Flu	xes A	ldded	(lbs)			250	Mara	lloys Add	led	(lbs.)			Wire /	Added (ft)
Time	F	umece	Ladi	•	LMF	LMF	LMF	Th		Fumece			MF	LMF	Sulfur	
ag Cond	.		1.01	00 6	0/40			Car	bon						Carbon	,
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Lime	4	000		-	300			MC F	FeMn		_				FeTi	
oloLime								Fe	Cr						FeV	
М	1							Moly	Oxide						Nitrova	ın
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gon Flow (1999) 40 Rinse Flow: 50 Temperatures and Times																
Temperatures and Times																
Temperatures and Times																
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ygen (p)	om)							. ·						Final (	) <sub>2</sub> (ppm)	):
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ractic	e:	92	1		Roll N	lo:	044	C	Chemisti	ry:						
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Prelln									<u> </u>		_]					
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Fine	1	.004		.003	,	000	.000	.000	.0000	.001	5	.0012			npla Type:	555
		GRADE			AJ6											
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ر	7 7		MAIDI	Cacile:		UIB NO	Gate No.	rients on	Cadle Ho	iais on Plu	g   _	Dat	e	Shil	Hea	at Numbe
7%	2	<u> </u>	5`	176		10		1_2		<u> </u>	<u>ل</u>	5- <i>]</i> /-	OC	1/-	710	-1350
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	Start	Slop	Scra	n Wr		Car Number	3115 500		1	· PO	= 6.0		y Consu		
ast Tap		2 100						d	-			<u> </u>	Amoun		
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nd Chg.	21.49	~	39	100	<del> </del>	leat - Treatm		12-37		-	ode #1	<del>-</del> -	7510	3150	
3rd Chg.	<del></del>				\ <del> </del>	eparation Thr		45:17		1	ode #2				
Tapping	2-120	2225	-	_	Current	leat - Trealm	ent Stop	33132		<u> </u>	ode #3	<del></del>			
ар Тетр.	3120	Totals:			You	lai Time of He	eal			Lance	Sections	-			
	Total Tim	e of Heat:					n to LM	F / Furnace		Roof 1	Delta		069		
LMF L	idle Weight			7	Est. R	elum Wgt.	Adde	d Scrap Wgl.	1	Wall ł	teat		009		
	are 'Velght		9,000 #		<u>                                     </u>				╢	Thein	nocouples			2	
	teel Weight			┥					_	Samp	lers			1	
758/11										Окуд	en Probes				
				Adı	litions T	o The Fu	nace a	nd Ladle			£.				
	Flu	xes Adde	d (lbs)			23.	25-	Alloys Add	led	(lbs.)			Wire	Added (ft)	
Time	Firmece	Ledle	LMF	LMF	LMF		ime	Fumace		dle	LMF	LM		<del></del>	
Sing Cond.		1006				Cer	rbon	4-17			20	-	Carbo		
Cal Al							FeSI	<del></del>	20	0	a v		Cal S	— <del>                                     </del>	
Spar			1-13		· ·	SI	lMn		1/6			<del>                                     </del>	FeCt		
Cal C			1.2			нс	reMn		1		150		FeB	-	
Lime	4000		irc)			MC	FeMn						FeT		
DoloLime						Fe	eCr						FeV		
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Irgon Flow	Tally or	a.			T.	T				1		Rins	e Flow;	<u>.</u>	
					Tomo	graturos	-Oad Til	Mac				1			
Time	200/200	13.6.7.5	n:8'1.	1-5-		GIEILE/ES	ana m	11145	_		<u></u>	1			
	Temperatures and Times  Time 22:15 23:16 23:18 Final N2 (ppm):  emp. (*F) 1822 2879 2827 2805 Final Temp (*F):														
	Time 22/15 78:06 22/57 23/18 Finel N. (ppm):														
72										i		Fina	I O <sub>2</sub> (ppm)	):	
					Chemistr	y and Bil	iet into	rmation							
ractice:		90	Roll N	o:	BII	C	Chemis	try:							
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Spec.	14	90	2	<b>(-</b>	15	22	7<	20	+	70	0	C	<del></del>	<del>  </del>	
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		ļ	MI		T!	Zr	- 0	Ca		Zn	DI		Grade Code:	490	
Finel	GRADE	.002		945 C	.000	.000	.0000	0100.		.00	1.7	s	ample Type:	,555	
	CIGIDB														
· <b>-</b> -			1 7 4 0							C 4			•	ï	
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	Heat S⊵li A		. 1	Bill 4.7	et Siz SX8.00	1.	77	54 50.		~	2	()	$\mathbf{e} \cdot \mathbf{o}$	•	
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	Seli A D C	t B.O 596	. 1 0 0	4.7	5X8.00	1;	77 0 0 0	0 0.	0 0		: - <u></u>	0	0.0	! !	
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7.	EAF Mel	Observa-					4F / L		O!	þ	ine	d ŀ	leat	Shee
	Start					MF Trea	tment Lo	g (time)						nsymptio
Last Tap			까   So	rap Wt.	<u> </u>	Car Nun		12	$\neg$					nount Used
1st Chg.	125		<del>-                                    </del>	1000		l Heal - Tres		14:5	18				At Furni	
2nd Chg.	135		~+2	1440	Crate		eatment Start	12.13	-	Powe	r Mater		2/80	
3rd Chg.	140	7	19			Preparation					ode#1		1	-10
Tapping	14:	36/4	411		Curre		alment Stop	15,3	7	<u> </u>	ode#2			
Tap Temp	-1077	Total	1			Total Time	of Heat	148.4			ode #3		1	
· · ·	Total	Time of He	eat:		Rea	son for R	eturn to LM	F / Furnac		Roof	Section	<u> </u>		
LMF	Ladle Weig	hi	<del></del>	7	E	L Return Wo		d Scrap Wo		Wall			<u> </u>	<u>_</u>
Steel	Tare Weigh	u	49,000 #		<u>                                     </u>					_	nocouple		3	
Weight	Steel Welg	ht				· <u></u>			_	Semp			&	<del>-  </del>
					<u></u>					Охуд	n Probe		<del>                                     </del>	
				Addi	tions	To The	urnace a	nd Ladi			٠٠٠٠			
- <u>-</u> -		luxes Ad	ded (lbs)			115		Alloys Ad			·			
Time	Fumace	Ladle	LMF	LMF	LM		Time	Furnace	Lac			<del>,</del>		ire Added (f
Slag Cond	<u> </u>	1500			T	<u> </u>	Carbon				LMF	_ <u>u</u>	MF SI	vifur
Cal Al		ļ					5% FoSi	<del> </del>	かる		20	13	—- Ⅱ —-	rbon
Spar Cet C	_	<del> </del>	9-15				SIMn	<del> </del>	66		7.5	20		1511 /50
Lime	4000	<del> </del>	4.6			Н	C FeMn	<del> </del>	DC		3-3	-1		Сь
DoloLime	4000	<del> </del> -	700	ļ		М	C FeMn	<del>                                     </del>			0	20		•B
NI		<del></del>			<del> </del> -		FeCr	1		-			—ı—	eTi ·
Cal Sti	<del> </del>	<del> </del>	<del> </del>		<b>├</b>	Mc	ly Oxide			_ -			<del></del>	ovan
			<u>_</u>		<u> </u>		Copper	<u> </u>					Fe	<del></del>
Argon Flov						Argon	Log							
7.19017701	V (१४%)(११	. 0.							1			Rins	e Flow: e	
					Tem	peralure:	s <i>and Tim</i>	ins.	<u> </u>		<u> </u>	7 (1)13	0 / 10W, 6	
· · · Time	1431	1924	14,40	15.1	1-17	2 2 3	, 15		<del></del>	-				
Temp. (*F)	100	2945	2861	19/4	73,	- 19 v	+	<del>                                     </del>	':				l N <sub>2</sub> (ppr	
Охудел (ррп	n)				1	<del>-  </del>	<del></del>	<del> </del>					l Temp (	
				Ch	emist	rv and B	illet Infor	nalia.				Fina	l O <sub>2</sub> (ppr	n):
Practice:	<u>'''</u> '' \'\(\)	7	Roll No		, पप						·		1	
Element	c	Mn	P	<del>-,-</del>	s		Chemistr		<del></del>				,	
Spec.	110	10		<del>-  </del> -		Si	Cu	Ni		Cr	Me	,	Snlt	AI
Prelim	100	8	<del>.  </del>			_22	1-35	20		15	v	6		+
Prelim	1-2	<del></del>	<del></del>		19	0	27	7		70	,	7	1,	<del></del>
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	Srlit A	l II.O. 5989		illet i.00X7	Size	: Lengt	h Cour	t Tons	St	ack	#SCT		luns	100
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Melter	LMF Opera	100   1 artis	<del></del> ~ ~ _	<del></del>				0.0				0	0.0	"/
aia	S	L.adler	nan Ladie	No. Ga	le No.	Heats on L	adle Heats	on Plug		<u></u> Dale	<del></del>	5hit		<u></u>
	233		<u>41 a</u>	$\mathcal{L}$		У	7 0	7				2/2 2/2	- Hea	t Numbe
	umeni No: MS	-013				Revision Date	t: 01-19-1999	<u> </u>	<u> </u>	3.	<u> 17.1</u>	<u>/ '</u>	<u> </u>	1321
Remerks:	sil.	<u> </u>	3 1	lest				<del></del> -	==		<del></del> -	Mevis	ius Level;	: =======
		-												

	AF Melt	na Loa	7. 5					-	· U	_ <u>`</u> :D	ine	a H	eat S	heet	
	Start	Sto		- 111	LIVI		ment Lo	g (time)		Po	wer &	Supp	ly Const	million	
Last Tap	-		1 D	ap WL		Car Numb			$\overline{}$		:	Ī	Amoun		
1st Chg.	17:37	2/8/		OUD		at - Treatr			ㅓ	٠.			At Furnece	AI LMF	
2nd Chg.	16/24	18		200	Current I	leat - Tree	Inert Start		$\neg$	Pow	er Meler		2(240)	- CHU	
3rd Chg.	18:4		12/15/	pera	Pr	eparation 1	Time	-	$\dashv$	Elec	trode #1		24 (2°) (2°)		
Tapping			10		Current I	toat - Trea	Imeni Slop		ᅱ	Elec	Irode #2				
Тар Тапр,	3040	Tota	<del></del> -		To	al Time of	Hoal		┥.	Elec	trode #3			<del></del>	
	Total T	lme of He	et:		Reaso	n for Ret	urn to LM	V Gurana	록,	<b>_</b>	Section		29		
LMF	adie Welch			<del></del>	Est R	elum Wgt.		d Screp Wg			Dette	[.	2		
	Tere Weight		40.000 #						╗	Wall	<u> </u>				
-	Steel Walch		49,000 #	-				,		_	mocoupie.	-	<u> </u>		
			<u> </u>	ا ل				<del></del>		Sam	en Probe	-+			
				Addi	ions To	The E	irnace a			Chy	en Probe	<u>•                                     </u>			
	·····Fi	uxes Add	ded (lbc)		0//3 / 0	THE P			_						
Time	Fumaça	Ladle	LWF					lioys Ad	ded	(lbs.)			Wire A	diled (ft)	
Slag Cond.	<del>                                     </del>	<del></del>		LMF	LMF	,	Time	Furnace	La	dle	LMF	LMF		1 :	
Cal Al	<del>                                     </del>	1000	<del>  </del>			C.	arbon		7 -	73		<del> </del>	Cerbon	<del> </del>	
Spar	<del> </del>		<del> </del> -		<del> </del>	751	X FeSI		_	0		<del> </del>	Cal Si	<del> </del>	
Cal C	<del> </del>		<del> </del>		<u> </u>		SiMn		90	V)		<del> </del>	FeCb	<del>-</del>	
Lime	1000		<del> </del>				FeMn					<del> </del>	FeB		
DoloLime	1000		<del> </del>		<b> </b>		FeMn					<b> </b>	FoTi	<del> </del>	
NI -	1 ·		-		<u> </u>	<del></del> -	eCr						FeV	<del> </del>	
Argon Log  Argon Flow Takker 1 and Times  Temperatures and Times														<del> </del>	
Copper Nitrova FeS  Argon Log  Argon Flow TeXman 1, and Rinse Flow:  Temperatures and Times														<del> </del>	
Armon Flow						Argon	Log								
AUGUST FIOW	. c. h. ;;	in'.	<u> </u>				<u> </u>					Pines	(Comme		
					Tempe	ratures	สักป Tim	es				110120	710W; S.	<del></del>	
Time	19:10	19:37	156 " ALTON			3.			=	-					
Temp. (°F)	Temperatures and Times  Final N <sub>2</sub> (ppm):														
Охудел (ррт)						-	╂━──			- 4			Temp (°F):		
				Chr	mietrie	20d Dil	let Inforr					Final (	O <sub>2</sub> (ppm):		
Practice:		10	Roll No												
Element	C	Mn	<del></del>		144		hemistr	<b>y:</b>							
Spec.		<del></del>	P		s	Si	Cu	Ni	$\top$	Cr	M	<u>. T</u>	Snl		
Prelim	<u> </u>	70	20	_	5_   .	22-	3.5	20	1		┥		<del></del>	Al	
·	14	19	6	_   $\bar{3}$	0		26	7	<del> -</del> 4	<del>/5-</del>	03				
Prelim	13	19	4	30			25	2		<u>//</u>	01				
Prelim		·							<del> </del>	0	01				
Prelim		$\mathbb{L}_{-}^{-}$		_				<del></del>	┵	<del></del>		_			
Prelim									<del>                                     </del>						
Prelim			1					<del></del>	-						
Final	00	00	.000	0.0	00 -	00	.00	700	<del> </del>						
Element	. Al	V	_ Nb	=	7			.00	<u> </u>	.00	·	00	.000		
Final	.000	.000	.000			Zr	В	Ca	Z	n	ĎI	T Guy	te Code; 1	10	
	GRADE		1018 S			000	.0000	.0000		pood		6.3	de Type:	898	
<u></u>			.•		· <del></del>					(	NO C	<del>189 - )</del>		.7	
!	teat No	. W13	<b>59</b>	froc	luot c					'	<del></del>	- <del>X</del> -	יד הי	tr	
1		н.д. 5991	# Hil	let Si	luct C	ode 3:	5M					.1.	. ١١٧٠	1	
•	E:	0	5.0	0.5XO	0	221	0 Ըսսո <b>ւ</b> է 2	Tons 5	tac	k #	Scr=~	<b>.</b>	<b>^</b>	, v ·	
	C . Tr.	0				0	0	0.0		•	0	Tori O.	, <b>r</b> .	In	
Meller L	MF Operate	<u>~ _ Δ .</u>		<del></del>		0	•				Ō	0.	•	ic.	
912		or Ladien	nen Ledie	No. Gat	o No. He	als on La	iaie i yeerz n	פיראייי.			0	0.0	o (/	<b>∤</b> 1[	
		46	1110			12			10	40,0	<del></del> -}-	-0.0	<u> </u>	50	
	need No: MS-0	11)			84	Viales Date:	04,19,1940	<u> </u>	<u>5^-</u>	12-	200	<u>3-7/</u>	14-4	369	
Ramarks:	1) 0	lon	Blec	+- 1								Revision	Lavel: F		
	,	. 6	<u> </u>	anov	400	1.26	17.	45				_		<del></del>	

	AE Mate		7/12											<u> </u>	TOOL C	neei
•	AF Melt	<del></del>		_			.MF Treat	mer	il Log	(time)		Po	wer &	Supp	aly Cons	umption
Last Tap	Start		lop	Scrap	Wt.	L_	Car Numb	per			$\neg$		_	Ī		nt Useri
1st Chg.	1/ 11-	<u> </u>	45	1		Las	t Heal - Treat	ment	Stop		╗			ı	At Furnace	At _MF
2nd Chg.	17:5:		2		שני	Curre	nt Heal - Tre	almen	t Start		$\neg$	Pow	er Moler		16260	
3rd Chg.	1////	<del>'</del>		12.7/4	110		Preparation	Tkme			$\dashv$	Elect	trode #1			
Tapping	19:00	19:	15	┼		Cutte	nt Heat - Tre	almen	l Stop		ᅱ	<u> </u>	lrode #2			
Tep Temp.	3055		lals:	<del> </del>			Total Time o	l Heel		<del></del>	$\dashv$	· <del> </del>	lrode #3		<del></del>	
		lme of t	leat;			Re	son for Re	turn	to LIME	/ Furnac		ı <del> </del>	Section Delta	15		
LMF	Ladle Weigh						t. Return Wgl			Scrap Wo		Wall			<u>-                                    </u>	
Steel	Tare Weight			***	1							<del> </del>	mocouple		<u> 19</u>	
Weight	Steel Weigh			,000 #	-							Sam	<del></del>			<del></del>
	· · · · · · · · · · · · · · · · · · ·	<u> </u>		<u> </u>	]						—	Охуд	en Probe	\$		
					Addi	tions	To The F	urn	ire at	nd Lad	2					
	FI	uxes A	lded	//hel				-								
Time	Fumace	Ladio	<del></del> -	MF T	LMF	LM	-			Moys Ac	_			,	Wire	Add id (ft)
Sing Cond.	<del> </del>	1000	4_	-+		ļ	<del></del> 1	Time		Furnace	ļ '	adle	LMF	LM	Sulfor	
Cal Al	<del>                                     </del>	1000	+-			├		arbor		4-13	ــ			<u> </u>	Carbo	1
Spar	<del>                                     </del>	<del>                                     </del>	╅	<del>-</del>				% Fe	<u> </u>	<del></del>		577		-	Cal Si	
Cat C	1		1-		·	<del>                                     </del>	·	C FeM	<u> </u>	<del> </del>	103	00		<del> </del>	FeCb	+
Lime	400		_			<del> </del>		C FeM		<del> </del>	╁╌			<del> </del>	FeB	<del>-</del>
DoloLime							<del></del>	FeCr			╂─-			<del> </del>	FeTi	<del></del>
NI .							Mo	ly Oxi	de		<del> </del> -			-	Nitrova	<del>.  </del>
Cal Sil	<u> </u>	<u> </u>					C	oppar			1			<del> </del>	FeS	<del>"</del>
							Argon	Loc								- <u> -</u>
Argon Flow	7 g S more	- 45				Ţ.					_			T = .		
						7000		<u> </u>		<u> </u>	L_	1	<del></del>	Rinse	Flow:	
Time	cia	. 47	a:			i em	peratures	==								
Temp. (*F)	18:19	18:35		" egrat"		-	10	<u> </u>		<u> </u>		•		Final	N (ppm):	
Охудел (ррт	1921	1721	┦			<del> </del> _		4_			<u>L</u>			Final	Tomp (°F)	:
- Jan (plan)	<u></u>	L	<u> </u>			<u>i</u>		_ե_	·.	<u></u>	L			Final	O <sub>2</sub> (ppm):	
					Chi	emisi	ry and Bi	llet	nforn	nation						
Practice:		10	R	oll No:	b	44	, (	Chei	nlstry	y:						
Element	С	Mn		Ρ'		s ·	Si		Cu	Ni.		Cr		<u> </u>	C-II	
Spec.	14	71	5	20	12	<b>₹</b> -	22	┼—					M		Sn <sup>ll</sup>	AI
Prelim	6	7	_	9		. 5			5	20	┿	72	4	٤		
Prelim	5	8	_	<del>/-</del>		<u>ユ</u> ン		1	22	-	+	9_	01			
Prelim		<del>                                     </del>			+			<u>ر                                     </u>	2	7	4_	5	0/			
Prelim	<del> </del>	<del> </del>	$ \mid$ $-$		+-		<del></del>	<del> </del>			<u> </u>		<del> </del>		7	
Prellm	<del> </del>	1	- -		┼		<del> </del>	<del> </del>		<u> </u>	1		<u> </u>			
Prelim	<del> </del>	<del> </del>			<del>-</del>						_ _			$_{-}$ T		
Final	15			000	+ -	22	26									
Element	A/	.6.	-	.008	<u>-l</u>	27	. 26	<u> </u>	23	.07		. 08		01	<del>- 600 -</del>	
	<b></b>	V	<u> </u>	Nb		Ti	Zr	E		Ca		Zn	DI		acie Code: 1	13
Final	GRADE	.000		.000 DI8 SQ		00	.000	.00	00	.0000	<del>                                     </del>	0012		_	nide Type:	555
	leat No Split A R	X12 F.O. 5991 O	 :63	 Fille	Prod	ze	Code 3 Length 221 0	Coc	Jrit 57 & 0	Toris S 51.1 D 0.0	tai		0	0.	. ) . 0	*****
Mella-	Ti ME Occupa	0			<del></del> _				Ω	0.0	- <b>-</b> -		ი ი	، 0 0 .		
Melter 1	MF Operat	or Ladi	eman	Ledie N	o. Ga	ie No.	Heets on L	adie	Heats	on Plug		Date		Shift		Lumba.
7/2		143	-9	.8			41			16	4-		2000	3- //	1	7.05
Docs	ment No: MS-	01)					Revision Date	: 04-1	9-1999	<u> </u>	<u>-/-</u>		-000	<u> </u>	1,X~/	<u> </u>
Remarks:		$\overline{\rho}$	ele	4 82	nos.	رير.					<del>-</del>			KENSI	in Level; F	

5

						/ 11	/ [	- C	· OI	H	11160	т пе	હાદ 5	neet
E	AF Melti	ng Log	(time)		LIVI	Treatin	ent La	(time)		Po	wer &	Supple	e Marial	mption
	Start	Stop	Scrat	Wt.		Car Number		7	=				Amoun	
Last Tap		1515	$ \mathcal{D}  =$		asi He	al - Treatme	ni Stop	17.3:	$\overline{}$			At	l'urnaca	At LMF
1st Chg.	16:14	<del> </del> -			nteuf H	ost - Treatm	nent Start	17.5	_	Pow	of Meter		:16	/7.7.
2nd Chg. 3rd Chg.	-  <del></del> -		<del> </del> -	-		paration Tir		7.7	$\dashv$	Elec	trode #1		1110	///:
Tepping	772	100		c		oal - Treatn		1000	-	Elec	rode #2			
Tap Temp.	12:15	///2 > Total				al Time of H		18.	_	Elec	rode #3			
Tup Tunp.	17672	me of He						79:3		Land	e Sections	<u> </u>		
				=		ı for Retu turn Wgl.		d Scrap Wg		Roo	Delta	ć	L8	
LMF	Ladie Welghi			]	7 /	10-1		u Scrap vvg		Wall	Heat		18	
	Tere Weight		49,000#	<u> </u>	<u> </u>	test	- 1			<del>-</del>	mocouples	5		
Weight	Steel Weight			<b>1</b>	DE	ia.	gate	v		1	bleta	_		
										Oxy	en Probe	<u> </u>		
				Addition	ıs To	The Fu	rnace a	nd Ladi	e					
	Flu	ixes Ada	led (lbs)				·	Alloys Ac	ided	(lbs	)		14700	
Time	Furnace	Ladie	LMF	LMF	LMF	Tit	me	Fumace	_	die .	LMF	LMF		dded (ft)
Siag Cond.		1000				Car	bon	1-15	-				Suttur	<del>                                      </del>
CalAl						75%	FeSI	<u> </u>	1	ρЬ	5)	<del> </del>	Carbon	<del>- ,</del> -
Spar	<u> </u>		1-13			Sil	Mn	1		00	<i>)</i>		Cat Sil	1511
Cal C			IK. C			HC F	eMn	† <del></del>	: <u>&lt;</u> _	-0			FeB	<del> </del>
Lime			100			MC f	еМп				8-0	<del></del>	FeTi	<del>                                     </del>
DoloLime						Fe	Cr		_				FeV	
Cal Sil						Moly	Oxide					i	Nitrovar	;
Carsi						Сор	per						FeS	<del> </del>
						Argon L	og `		:					
Argon Flow	7 x (n +2	· , si .		$\overline{}$	=			<del></del>					<u>:</u>	
				7	123110	raturen			<u> </u>			Rinse F	low: s.	<del></del>
Time	11/20	1X 07	19:15		111,112	alures e	mă Tiu	les ;-:						
Temp. (*F)								ļ. <u> </u>				Final II	<sub>2</sub> (ppm):	
Oxygen (ppm)	11.7.6	2275	2700	<del></del>		9		<u> </u>	_			Final T	emp (°F).	:
	1		<u> </u>			<u> </u>		<u></u>	<u> </u>			Final O	₂ (ppm):	
D					istry.	and Bill	et Infor	mation						
Practice:	1	16	Roll No.	114	4	CI	hemistr	y:						
Element	C	Mn	P	s	Ή	Si	Cu	Ni	$\top$		1 44		0 1 1	
Spec.	16	70	20	7	_			<del> </del>		Cr	М	<del>-</del>	Sn□	AI
Prelim,	1 (-	40		73	<del>'- -</del>	22	35 <u> </u>	20	4-4	15	0	2		
Prelim	16		14	-1-2. /-		2	<u> </u>	1 7		13				_
Prelim	17	419	15	1.29	-  '		26	1	_	14	_ /		4	
Prelim		65	14	3/3	- 1.5	23	26	<u> </u>	•	7				
Prelim	<del> </del>	<del> </del> -	<del></del>	_	_ _									
Prelim	<del> </del>	<del> </del> -	ļ				_		Τ					
		ļ	<del> </del>						1		_			
Final	.17	.65	.014	.017		. 20	. 25	.07	T	.14	<del>-  ,</del>	<del>)   -</del>	.UIU	
Element	AI		Nb	Ti	7	2r	В	Ce		Zn	DI			
Final	.004	.001	.000	.000		000 .	0000	.0011	┺_	0012	ļ		0000.	10 555
	GRADE		1018 30				<u>-</u>		ــــــــــــــــــــــــــــــــــــــ		<u> </u>	Sanipli	Type:	
	Heat No	. W13		Produc	<b></b> -									
	Srlit	F.O.	I Bill	et Size	e Le	osth (	ount Count	Torr	C+ -	o 1.	. – -			
	A B	5990 0	5.0	0X7.00			52	50.2 E	. E 1	LIK. H	461921 0			
	Ĉ	Ö				0	O	0.0	-		o			
<u></u>						ر. د	0	0.0			0	0.0	I	
Melter	LMF Operat	or Ledler	man Ladle	Vo. Gale I	<u></u>	eals on Lac					0	<u>0_</u> 0		
9/2	V30	- 45	<del></del>		_	- OII LBO	Heat		·	Dat	e	Shift	Heat I	lumbe
11	wmeni No: MS		1 2			<u> </u>		23	5-	12	30812	3-11	W-1	368
Remarks:	MS-	~13 <del>~~~</del> ~~			A	evision Date:	04-19-1999		==	===		Revision !		<del></del>
namarkz.					-				==					

				<del>-</del>			\ / L	IVIF C	,OI	เมท	med	ן נ	ieat S	heet
	EAF Melti	ng Log	(time)		L	MF Trea	ment Lo	g (time)		Po	wer &	Sup	oly Cons	umption:
<del></del>	Start	Stor		rap Wt.		Car Num	pet	T 7	=					nl Used
Last Tap	1015	144	1   -		Las	Hoat - Treat	ment Stop	16:5	7				Al Furnaça	ALLME
1st Chg.	14.5		8 20	1000	Curre	nt Heat - Tre	alment Start	16.		Pow	ar Meter		21530	ジックィ
2nd Chg. 3rd Chg.	15:4	<u> </u>	- 45	PU	-	Preparation		. (4)	∸{	Elec	lrode #1		21,1,70	21/1
					Curre	nt Heat - Tre		12.3		Elec	Irode #2		<del>                                     </del>	
Tapping Tap Temp	16:40					Total Time o	<u> </u>	11.3	9.1	Elect	rode #3			
Tap Temp	1202							47:1	<u>16</u>	Lanc	e Sections	5		
	Olal T	ime of He	al:	<u> </u>		ison for Re				Roof	Delta		28	
LMF	Ladie Weigh	ıt			-Es	. Relum Wgt	Add	ed Scrap Wo	)l.	Wall	Heat		28	
Steel	Tere Weight		49,000#	_	<u> </u>					Thei	mocouple	\$		
Weight	Steel Weigh	1	<u> </u>		<b>}</b>					Sam	plers			
					<u> </u>	<u> </u>			-	Охус	jen Probe	5		
				Add	itions	To The F	urnace :	and Lad	e					
	. FI	uxes Ado	led (lbs)			T		Alloys A		1/15-			· · · · · ·	
Time	Fumece	Ladle	LMF	LMF	LM.	<del>-  </del>	Time	Fumace	T -			1	<del></del>	Added (ft)
Slag Cons	1.	1000	<del>                                     </del>	<del>                                     </del>	+	<del>-   - ,</del>	Carbon	, united	1-	edie .	LMF	LA	H	
Cal Al		1		<del> </del>	+		% FeSI		+-		C(c	20	_#	
Spar			2-13		+	<del></del>	SiMn	<del>- </del>		50	100	<u>24</u>	CalSi	1/5-(
Cal C			1/- 2		+		C FeMn		70		<u> </u>	<del> </del>	FeCb	
Lime	4000		100	<del> </del>	<del> </del> -		C FeMn	<del></del>			900	<del> </del>	— FeB	
DoloLlme			_ `-		<del>                                     </del>		FeCr	+	├-			60	_	
Ni	ı					<del></del>	ly Oxide	<del>-  </del>	├			├—	FeV_	
Cal Sil					<del> </del>		opper	<del></del>	-			<del> </del>	Nitrova	n
								_ <u> </u>	<u>.                                    </u>			<u></u> _	FeS	_L`
Argon Flo					<del></del>	Argon	Log						: :	- 3
70901710	<b>ভ</b> ইচ্ছুদ্র	. 10	5.5	<u> </u>	<u>. L </u>		<u>: </u>					Rins	e Flow:	
		<u> </u>	للشكاع إغاز أحادث	وساستون	. Jem	peratures	and Tir	nes -	<del></del>		** :			
. · Time	16:25	10:32	1708	1718	3 172	4 173 1	1717	9	T-			Fine		
Temp. (*F			2420	2908			3930	-	-			_	IN <sub>2</sub> (ppm):	
Охудел (рр			4.:	7. 10. 0	12	U E 70	1 12 /40	<del></del>	┼				Temp (°F)	
				A	Jamie.	ry and B	llot late					rina	I O₂ (ppm):	
Practice			Doll M										9 1	
		10	Roll N	o. 	14 \$	4	Chemist	ry:						
Elemen	<u> </u>	Mn	P		S	Si	Cu	Ni	1	Cr	M	o	Sn∥	Al
Spec.	16	170	1 2	0 7	25	22	7/	20	$\top$	15	6	7,		
Prelim.	7	8	2		10		13/	12	+-	<u> </u>		;		
Prelim	1	2000			5	/ 5	21	-	+-	<u>/ ()</u>	-0,1			
Prelim	14	63	23		5					70			<u>:</u>	
Prelim	<del>-                                     </del>	15:-	127	- 0	<del></del>	20	3/	<del> </del>	4	·	_			<u> </u>
Prelim	<del></del>	<del> </del>	┨──			<u> </u>	<u> </u>						_	
Prelim		<del> </del>	┤──								1			<del></del>
Final	.16	- 66			01.0		ļ		⊥.					
		.66	.02	3 .	016	. 21	.22	. 06	T	.11		OI	.009	
Element	. Al	V	Nb		Ti	2r	В	Ca		Zn	DI	<del></del>		10
Final	.004	.004	.000	- 1	000	.000	.0000	.0009	+ -	0012			mple Type:	555
	GRADE -		1018 5	5Q		·		<del></del>	ــــــــــــــــــــــــــــــــــــــ		<u> </u>		mpia Typa:	
<b></b>	Heat	No. X-		<b>-</b> <del> </del>	rodui	ct Code	230							
!	Srlit	. B.O.	. # B			e Lengt		nt Tons	s S	tack	4Scr	46	lons	
! 	A	5989	7	5.00X	7.00	17	'5 d	60 50.9	E E			0	0.0	
I	16 C	(	() }				0	0 0.0				0	0.0	
l 	<u>_ [1</u> _	ے ۔ ۔ ۔ ۔					0	0 0.0				0	0.0	
Melter	LMF Opera	for Ladier	nen Ladi	9 No 1 C	ala Ma	Hects :						<u> </u>	<u></u>	
917	235				J.U 1VU.	Heats on L	eale Hee	is on Plug		Date	e	Shil	Heat I	lumber
11 2		46	<u>/</u>	10		1		_//	5	12:	2000	7-1	/ X-1	180
	Scument No: MS	-013				Revision Date	:: 04-19-1999				<u> </u>	Nevis	iun Level; F	210
Bemarks:					}									

E	AF Meltir	g Log	(time)		L	MF Treat	ment Lo	g (lime)		120	wer &	Sunn		(albert	mption
	Start	Stop		ap Wt.		Car Numb		7	=						
Lost Tap		132			Last	Heat - Treate	neni Sion	1300	-			}-		Amount	
1st Chg.	14:15	144	13 80	370	_	nt Heat - Trea		1500	$\pm$	Pow	er Meler		_	rnace	ALLMF
2nd Chg.	1447	_	-1.35			Preparation 1		179.0	4	<b> </b>	10de #1	-	$L_{\lambda}$	130	7.529
3rd Chg.	<del> </del>	<del>  ,</del>			Cutter	nt Heat - Trea		7:05		Elect	rode #2		-	<del></del> - -	
Tapping	15,45							15.15		Elect	rode #3	-			
Tap Temp.	3020					Total Time of		56.3		Lanc	a Section	ıs			
	I Olai Tu	ne of He	at: ———	,		son for Ret			_	Roof	Delta		à	7	
LMF	Ladie Weight			7	E31	Return Wgl.	Adde	d Scrap Wg		Wall	Heat		文	7	
Steel	Tere Weight		49,000#	7	<u> </u> -				الـــ	Thei	mocouple	-5		_	
Weight	Steel Weight			7						Sam	plers				
					<u></u>				]		gen Probe				
				Add	itions	To The F	urnace a	nd Ladi		- 2			E		
	Flu	xes Add	ed (lbs)			<del>- 1</del>		Alloys Ad	_				=-		
Time	Fumace	Ladie	LMF	LMF	LMF		Time	Fumace		adle	LMF	1	-,		dded (ft)
Stag Cond.		1000			<del> </del>		arbon	-	-			LMF	-1	Sulfur	<u> </u>
Cal Al					<del>-</del>		% FeSi		-	: .	60	10	0.	Carbon	1722
. Spar			· 13		1		SIMn	<del> </del> -		50	50	015	_ ļ.	CalSi	150
Cal C			;: <u>e</u>	<b></b>	<del>                                     </del>	<del></del>	FeMn	<del> </del>	L	10	تنس د و	┿	- -	FeCb	ļ
Lime	4000		::0		<del> </del>		FeMn	<del> </del>			125	1 0	-	FeB	<del> </del>
DoloLime							-eCr	<del> </del>				30		FeTi	<u> </u>
NI	ı					Mol	y Oxide	<del> </del>	-					FeV	<del> </del>
Cal SII					<del>                                     </del>		opper	<del> </del>	_			<del> </del>	- [-	Mitrovan	<del> </del>
						Argon	Lon	<u></u>	_			<u> </u>		FeS	<u> </u>
Argon Flow	Paymen	- 51			1	MIGRIT	Lug								
	1	. "			<u> </u>		<u> </u>		L_			Rinse	Flov	W. F.	
						peratures		nes							
· Time	15722	15.29	15:42	160	りんる	L 1550	7	T	٠,٠	.	<del></del>	Final	N'- (	nom!:	
Temp. (*F)	284/	294 L	<u>ط 295</u>	X559	2190	9 824	/	<del>                                     </del>	_					ιρ (°F):	
Oxygen (ppm)	<u> </u>					1. 7						Final			
				Cl	emist	ry and Bi	llet Info	mation	ļ	!		1	* 7 L	ppinj.	
Practice:	110		Roll N	o: 心 ኒ			Chemist				•		<b>.</b>		
Element	C	Mn	P	-17-	S	Si	T — — —	<del></del>	_			<del></del> -			
Spec.	1/2	70	+			31	Cu	Ni	_	Cr	^	10	S	in!	Al
Prelim	( (0	_70	1-04	` _	25	17	75	10		15		26		•	
Prelim	1/	45	4		39		28	2		12	- 0	7	•		
<del></del>	\\ \( \sigma_{\cutee{\cutee{\cute{\cute\}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	57	1 2		(D)	19	-24		7						
Prelim	1/2	. 6	18		0	19	25	ッ	┧.	11	,   ,				
Prelim			1					<del>                                     </del>	╁	-7			-	/	
Prelim					_		<del></del>	<del>                                     </del>	╁	<u> </u>		-			
Prelim			1	$\neg   \neg$			<del></del>	- <del> </del>	-					_	
Final	.17	. 68	.00	9 .	010	. 20 .	.28	07	╄	.15	<del></del>	- ,,-			
Element	Al	V	Nb		Ti	Zr	<u> </u>		<u></u>			.01		014	
Final	.004	. 002	.00	!	000		8	Ca	1	Zn	DI	Gra	de C	ode: 1.	10
\	GRADE	.002	T018	<sub>2</sub> Ω ——	000	.000	.0000	0009	<u> </u>	0012			ple 7		535
r-·	Heat No	- 5.5 %		_											<del></del>
	Srlit	H.O.		ተነው የተፈ	duct	Code 2	30	. – – – .							~
	A	5989		00X7.	00	Lensth 175	Count 55	Tons 9	cta	ck i			_		
	B C	0				0	0	46.7 E	E - ;	1		00. 00.			
	Li Li	0				0	ō	0.0				0 0. 0 <b>0</b> .			
Meller	<u> </u>					0	0-	0.0				ο ο.			
<u>-</u>	MF Operati	or Ladier			ale No.	Heats on L	adie Hea	ls on Plug		Dat		Shift	<del>-</del>		
1919	5/35	45	2	8		4	———	15				7/.1	- -	eat N	umbei
	men Na: MS-C	)1)		<del></del> -		<del></del>	: D4-19-1999	<u> </u>	<u>s</u> -	-/2-	00	2/14	ىلا	7-11	267
Remarks:	No h.	oc Ko	7	13:	00		<del></del>	<del></del>				Revisio	Ma Lev		
	<del>~~~~ (</del> //	الحلحة	<u> </u>	10	<u>~ 1</u> ~	ユンゆち	بت	سک بر مند	/ <	11		- د ،	_	19	2

iv. Nantusk	ky Elect	ric St	`, Inc.		EA	F/Li	MF C	O: -	bir	1ed	l He	at S	haat
	AF Meļtir	g Log (t	ime)	L	MF Treati								
	Start	Stop	Scrap W		Car Numb		s (unite)	۳, ۳	UW	er ce s	anabil T		imption ;
Last Tel		11:40	<del></del>	Last	Heat - Treatn	neni Stop	1.3-1	ਰੀ⊸			<u></u>	Amoun	AI LMF
2nd Cho	11:56	1233	PC30	Curren	ıl Heat - Trea	lment Start	13 में	싓듄	ower N	Aeler		c 910	1725
3rd Cho	1204	-	49_	_	Preparation	lime	25/13	F	lectrod	lo #1		<u> </u>	
Tapping	13.30	1378	<u></u>	Currer	nt Heat - Trea	lment Stop	niw	₹┤┞	lectrod				
Tap Tem :,	3148	Totals:	<del></del>	-	Total Time of	Heal	<u> </u>	E	lectrod				
	Total Tin	ne of Heat		Rea	son for Ret	urn to LM	/ Furnace	<del>≣</del> ı⊢	oof De	ections		26	<del></del>
LMF &	ndle Weight				Return Wgt.		d Scrap Wgl	<b></b>	all He			26	<del></del>
Steel	are Welght	—— ·—,	19,000 #	\ <u></u>				_   [-	heimo	couples		<u>-y</u>	
Weigh	Steel Weight				<del></del> -			_ s	ample	19			<del></del>
	-							└	xygen	Probes	<u>.                                    </u>		
	3			dditions	To The F	urnace a	nd Ladi	2)			;	. :	
<u></u>	1	xes Adde	d (lbs)			<u></u>	Alloys Ad	ded (IL	s.)			Wire	Added (ft)
Time -	Fumaçe	Ladie	LMF LI	AF LMI		Time	Fumace	Ladle	<del></del>	LMF	LMF	Sulfur	1.7
Slag Co et.	<del>├─</del> -┼	1000			c	arbon			1	ه ن	20	Carbon	,
Spai —	<del> </del> -		0.5	<del>-  </del>	— <u>}</u> -	% FeSI		250				Cal Sil	130
Cal (	<del> </del>	<del></del>	0			SiMn	ļ	leat				FeCb	
Lime	4cm		350	<del></del>		FeMn FeMn			<b>-</b>			FeB	
DoloLli 12			<del></del>		— <u></u>	FeCr	-	<del></del>	<del>- -</del>			FeTi	_
NI	1				<b>-</b>	y Oxide	<del>                                     </del>		╁			FeV Nilrova	.
Cal S4					С	oppe:			╅			FeS	<del>' </del>
	į				Argon	Log			<u> </u>				<u> </u>
Argon I low	. * - 1.	- 41							_		0:		
	:			Tem	peratures	rived Tie	100		<u> </u>		Rinse F	-low;∻	
Tim	178241				ociumares.	Ene TH	ies	•,					
Temp. 'F)	3148				0_		<del> </del> i	<u></u>	-	-		2 (ppm):	
Oxygen (rpm)	'				<del>- </del> -	<del></del> -			<del>  -</del>	_		emp (°F):	
		,482 m		Chemist	rv and El	let Info	mation	<del></del>	<u> </u>			) <sub>2</sub> (ppm):	
Practice:	110		Roll No:	CY		Chemisti		·····		· ·			
Elen ont		Mn	P	<u>c. 4</u>	Si	<del></del>	<del>-</del>	<del></del>		<del></del>	<del>,-</del>		
Sprn.	76	$\Omega O$	3-			Cu	Ni	<u> </u>		M	<del>-, - -</del>	Sn <sup>li</sup>	Al
Pret m	1-15	_(\( \)	-00	<u> 35</u>	22	35	70	<del></del>	5.	0	<u>6  </u>		
Pre' in	1./	(1)		1000	<u>_c</u>	27	1-9		3_		<u>a  </u>	9	
Pretin	<del>\                                   </del>	0 .(		1 124	21	<u> </u>	<del> </del> -	<del> </del>			_		
Preim	[				<del></del>		-						
Prebm			<del></del>				<del></del>	-		<u>.                                    </u>	_		]
Presim			<u> </u>			<u> </u>	<del> </del>	-			_		]
Final	. 16	.67	.009	.013	.22	.27	.10	<del> </del>	17	7	<del>,</del>	.010	
Elen ent	Δi	v	Nb	Ti	2r	B	Ce				<del></del>		
f-ir al	.004	.002	.000	.000	.000	.0000	.0012	. 00:		DI		e Code: 1.	
<del></del>	GRADE.		1018-80 <u>,</u>		<u> </u>			1			Samp	ів Туре.	555
;·	可可量可	कर जात	₹62===-	Ti Trode	ic t Coa	E 307					· <b>-</b>		
1	: 1 i (	L IC, II,	# R(1	let Si:	e Leng	th Cou	nt Ton	s St.	3 C I	1 S c	гал Т	005	1
i	Ţ:	5289 5289		1087.00 2087.00	, ,	,	38 356	7 E.E.1			0	0.0	, J
!	!	$\epsilon_0$	•		'	()	47 39. ().(		ı		0 0	0.0	1
Matter	ME O ====1	<u></u>	<del></del>	<u></u>		<u> </u>	0_0.0					0.0 0.0	
Mel er L	.mr Operate		En Ledle No.	Gale No.	Heets on L	adio Hea	ts on Plug		ale		Shift	Heat N	Vumber
HIT		185	<u> </u>	<u> </u>	<u> 38</u>		4	5-1	ブィ	OU	7/3	[N-	
<del></del>	ment He: MS-0	013 <del></del>			Revision Dat	r: N4-19-1999					===	Level: F	<u></u>
Remoks:		<del></del> -											
1													

	EAF Melti	na Loa (	time):		RAC Toronto			_					<u>jeer</u>
1	Start	Ston			MF Treati		(time)	<u> </u>	P	wer &	Supp	oly Consi	umption ;
l.ast Tap		10-34		─-	Car Numb			_				Amour	nt Used
1st Chg.	1/.0 -			<b>▶</b> □	Heat - Trestn	·	455		r=			At Furnace	ALLME
2nd Chg.			47	Curre	nt Heat - Trea	lment Start	17 2 8			or Meter		231.30	1975
3rd Chg.	- T	<u>'-</u>			Proparation 1	Ime	ا ، د ۱۹	Ī	I	trode #1		<del></del>	
Tapping	12:14	4 17.	41	Cune	nt Heat - Trea	lment Stop	1745		!	trode #2			
Top Temp		7 Totals			Total Time of	Heat		$\neg$	<u> </u>	frode #3			]
	Total T	lme of Hea	ıl;	Rea	son for Ret	urn to LM	/ Furnae	=	<del></del>	e Sections Delta	5	~	
LMF	Ladle Weigh			Est	. Return Wgt.		d Scrap Wg		<del>                                       </del>	Heat		26.	l
Steel	Tera Weight		49,000#					$\exists$	I—-	mocouple		0/6	
Weight	Steel Weight	1	49,000#					7	<u> </u>	plers	-	_3_	
V/ C/3///	older trong								⊢	gen Probe	5		<del> </del>
				Additions	To The E	Irnaco a	nd Lad						
	FI	uxes Add	ed (lhe)		TO TIME !			_					
Time	Furnace	Ladle					Alloys Ac	ded	(lbs.	<i>)</i>		Wire	Added (ft)
Slag Con	<del></del>	<del>]</del>		LMF LMI		Time	Furnace	Le	dle	LMF	LM	r Suffer	
Cri Ai	-	1000		$-\!$		arbon				30		Carbo	<del>.   </del>
Spar	<del></del>			<del>-   ·</del>		% FeSI	<u></u>	25	0	100		Cal Si	
Cal C	+		40	<del></del> -		SIMn	<u></u>	60	j			FeCb	
Lime	Jam					FeMn	<u> </u>	L_		3		FeB	
DolaLime	4000	<del>  </del>	250			FeMn						FeTi	╅──┤
NI	-				<del></del>	eCr						FeV	<del> </del>
Cal SII						y Oxide			]			Nilrova	
						opper	<u> </u>	<u> </u>				FeS	<del> </del>
	<u></u>			- · · · · · · · · · · · · · · · · · · ·	Argon	Log			-				
Argon Flo	w · · · · ·	-51				T .	T	<u> </u>			0'		
				Tom	peratures		<u> </u>	<u> </u>	1		Kinsi	e Flow:∘,	
Time	1228	1040	03.13	rem	Jei altires	ane i im	es					1	ÿ+
Temp ("F	<del></del>	2937	1243						[		Final	I N <sub>2</sub> (ppm):	
Oxygen (pp.		<u>~121</u>	3023			<u> </u>				_	Final	Temp (°F)	:
- 79-11 (64)	···/	<u></u> _			<u> </u>	<u> </u>						I O <sub>2</sub> (ppm):	
				Chemist	ry and Bil	let Infor	nation :	37"					
Practice	: 110	>	Roll No:	044	C	hemistr	v: /	0 7	1'	· · · ·		· · · · · · · ·	
Elemen	C	Mn	P	S	Si	Cu	<del></del>					<del></del>	
Spec.	16	70	5	<u></u>		Cu	, Ni		Cr	М		Sn*	_ AI
Prelim	18	9	20	25	22	<u> 35</u>	de	기_	16	d	6		
Prelim		<del>├──-</del> ├─	25	54	-0	24	8		14		2	11	
		- t	<u> </u>	33	⊃ 7 <sup>~</sup>							<del>/-</del>	
Prelim	15	art		۲۷	21			+-					
Prelim						<del></del>		+-		<del>-  </del> -	·		
Prelim	_							+					
Prelim					<del></del>		<del></del>		<del></del> -				
Final	. 17	. 69	020	017	. 25	. 25	.08	+-	.1	4	.02	- 009	
Element	Al	V	Nto	11	Žr		<u></u>	<u> </u>			V2	.009	ŕ
Final	.004	.002	.000	000	- 000	B	Са	<u></u>	n	DI	Gı	ade Code	110
<del></del>	GRADE	1	1018 80	000	. 000	.0000	.0013		001.	1	<del></del>	mpla Typa	555
		,			. <b></b>	<b>.</b>			_				
, 	neat S⊭lit	ио. У≕ Н.О.	7.2867 TH	Croduc	t Code	30X ==	- . <u>-</u>	_					
1	Ų.	ទី១មន		et Size 0x7.00	. tendi. 170	+ 60Um; } - 72	l Tons 551.9	Տ Է. թ.ո	ack t	IScr			,
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l	ji	0 6			0						Ů.	0.0	1
Meller	<del></del>		<del></del>		() 					<b>.</b>	0	0.0	1
	Cmr Operal	or Ledlem	an Ladle No	. Gale No.	Heels on Li	die Heets	on Plug		Dat	e T	Shift	Hook	Vumber
919		45	2/10		10			~			7/5	1	7 Os
	neument No: MS	013		*	Revision Date:	04-19-1990	<u> </u>	<u> 7</u> ) .	<u>-1 0</u>	100	111		(30)
Remarks:	Gram &	wv.	Sut n	D 7 iliú				===	<u> —                                   </u>		Revisi	on Level: F	
	<del>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</del>	****		· · illu	rwcy								

### EAF / LMF Cor 'pined Heat Sheet

- J	- Maltin	g Log (ti	ettel :			-	Allow Inc.					Comment.	The second
يم الم					Treatme	ins riog (	ume)		OWE	6.5	(PDI)	Consu	<u></u>
	Start	Stop	Scrap W	╼┤┝╼╼╼	Car Number		<del>,</del>	1			-	Amount	
ast Tap		0759	1	<del></del> ( [	al - Treatmen	1 Stop	$\Delta \sqrt{10}$	╛				Furnace	ALLME
si Chg.	<u>wil</u>	1036	10000	2 Current H	eat - Trealmo	nt Start	) 1)	]   <u>P</u>	ov.e. We	eler	_2	1820	<u> کې در د</u>
	25.5		5)	Pre	paration Tim	•	1/17-8	-   <u>  E</u>	lectrode	#1			
rd Chg.			,	Current H	eat - Treatme		255	-    <u>E</u> 1	lectrode	#2	_ _		
apping	11:38	119	2		al Time of He		<u>ر ر جہ ا</u>	E	lectrode	#3			
n Temp.	3021	Totals:						[	ence Se	ctions			
L	Total Tin	ne of Heat			n for Retur			A	oof Delt	a		25	
LMF Le	dle Weight			Est, Re	lum Wgl.	Added S	Scrap Wgl.	-     ^	Vall Heat	1		35	
	re Weight		19.000#	L				<b>⅃</b> ╽Ľ	hermoc	ouples		3	
_	eel Weight							_    <u>s</u>	amplers	5			
Veight St	eei vveignt								Oxygen F	Probes			
				dditions To	The Fur	nace an	d Ladle	-		•		· .	
	Flu	xes Adde			1		lloys Add	100 /1	ha l			1400-	A ad al a ad 46
Time	Fumece	Ladie	<del></del>	MF LMF	Tir		Fumece	Ledle		MF	LMF		Added (fi
								E80-8		-MI	LM	Sulfu	-
lag Cond.		1000			Carl			7	<del>_</del>			Carbo	<del></del>
CRIAI			- 62		75%			150		00	70	Cal Si	-
Spar			1-13		Sit HC F			1001	<u>r   3</u>	00	<u> </u>	FeCb	
Cal C	1								- -			FeB	
Lime	4000		3.0		MC F				-			FeTi	<del> </del>
DoloLime					Fe						<u> </u>	- FeV	
NI O-10"	<del>'  </del>				Moly						ļ	Nitrova	In
Cal SH						oper	l				L	FeS	
					Argon L	.og 🐪						1	
gon Flow	7 स्रेपूर्ण	n:		. 1.	T	· .			T.		Rinse	Flow:	
			1 00 2000	Temp	pratiums.	altel Tim	pe :						
77	11:0	11.42.7					1			-			
· Time	1127	1634	11:36		1:			٠.				N <sub>2</sub> (ppm)	
Тетр. (°F)	1137	29 19			0			·			Final	Temp ("F	):
			11:36		0			·.			Final		):
Temp. (*F) xygen (ppm)	3820	29 19	11:36 3021	Chemiștr	y and Bill	let Inforr	nation				Final	Temp ("F	):
Тетр. (°F)		29 19	11:36		y and Bill		nation	12			Final	Temp ("F	):
Temp. (*F) xygen (ppm)	3820	29 19	11:36 3021	Chemiștr	y and Bill	let Inforr	nation	12	- 0-0 C(		Final	Temp ("F	):
Temp. (*F)  xygen (ppm)  ractice:	) C	29 19	1(; 3k; 3c21 Roll No:	Chemistr OU/+	y and Bill C	let Inform hemistr	mation y:	12			Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice:	160 C	29 19	1(; 3k; 3c21 Roll No:	Chemistr OUA+ S	y and Bill	let Information	mation y: Ni 32	12	cr 15	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec.	110 C 16 12	2919 ) Mn 7C /7	1(; 3k; 3c21 Roll No:	Chemistr OUT S 25	y and Billi	let Inform hemistr	mation y:	12			Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim	2820 C 16 12	2919 ) Mn 70 17	1(; 3k; 3c21 Roll No:	Chemiștr OUA+ S 25 UB	y and Bill c si aa	let Information	mation y: Ni 32	12	cr 15	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim	110 C 16 12	2919 ) Mn 7C /7	1(; 3k; 3c21 Roll No:	Chemistr OUT S 25	y and Billi	let Information	mation y: Ni 32	12	cr 15	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim Prelim	2820 C 16 12	2919 ) Mn 70 17	1(; 3k; 3c21 Roll No:	Chemiștr OUA+ S 25 UB	y and Bill c si aa	let Information	mation y: Ni 32	12	cr 15	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim	2820 C 16 12	2919 ) Mn 70 17	1(; 3k; 3c21 Roll No:	Chemiștr OUA+ S 25 UB	y and Bill c si aa	let Information	mation y: Ni 32	12	cr 15	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim Prelim	2820 C 16 12	2919 ) Mn 70 17	1(; 3k; 3c21 Roll No:	Chemiștr OUA+ S 25 UB	y and Bill co	let Information Cu	mation y: Ni F	12	Cr 1:5 2-0	N Ž	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim Prelim Prelim	2820 C 16 12	2919 ) Mn 70 17	1(; 3k; 3c21 Roll No:	Chemiștr OUA+ S 25 UB	y and Bill c si aa	let Information	mation y: Ni 32	12	cr 15	M	Final Final	Temp (°F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Prelim Prelim	2820 C 16 12	) Mn 7C 17	Roll No:	Chemiștr OUA+ S 25 1/8 2 X 22	y and Bill co	let Information Cu	mation y: Ni F	12	Cr 1:5 2-0	M	Final Final	Sn <sup>ll</sup>	): :
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Prelim Frelim Frelim Prelim	2820 C 72 10 13	29 19 Mn 7C 17 52 70	Roll No:	Chemistr OUA+ S 25 118 24 22	y and Bill C Si AA AA 24	let Information Cu 2-9	nation y: Ni JZ  C	12	Cr /5 2-0	M	Final Final O O O O O O O O O O O O O O O O O O O	Temp ("F O <sub>2</sub> (ppm)	): :
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Element	2820 C 16 /2 10 116	29 19 Mn 70 70 70 71	Roll No:  P  25  18  .014  .000  1018 S0	Chemistr OUA+ S 25 1/8 25 .016 77 .000	y and Bill C Si AA AA A 2 7	let Information Cu 3.5 2-9	mation y: Ni G Ca	12	Cr /35 2 C	M	Final Final O O O O O O O O O O O O O O O O O O O	Sn <sup>11</sup> UU9	): :: Al
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Element	2820 C J J J J J J J J J J J J J J J J J J	29 19   Mn   7C   /7   32   70   .71   V   .001	Roll No:  P  25  18  1014  No  1018 S0	Chemistr OUA+ S 25 //8 2 × 2 × 2 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3	27 27 2000	et Information Cu 3.5 2-9	mation y: Ni G Ca	12	Cr /35 2 C	M	Final Final O O O O O O O O O O O O O O O O O O O	Sn <sup>11</sup> UU9	): :: Al
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Final Element	16 A/ .004 GRADE	29 19   Mn   7C   77   70   71   V   .001	Roll No:  P  25  18  .014  .014  .000  .000  .018 S0	Chemistr OUA+ S JS UB DX DA O16 TO 000	y and Bill Conde	Cu 3.5 2-9 .30	nation y: Ni	/\)	Cr /5 2-C +.20	M d	Final Final  10  20  02  02  03	Sn <sup>ll</sup> .UU9  .uugaraa	): :: Al
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Final Element	2820 C J J J J J J J J J J J J J J J J J J	29 19   Mn   7C   77   70   71   V   .001	Roll No:  P  25  1 8  .014  .014  .000  .000  .018 S0  .000	Chemistr OUA+ S 25 //8 2 × 2 × 2 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3	y and Bill Conde	let Information Cu 3.5 2-9 30 B .0000	nation y: Ni	/\rangle   2   2   3   5   5   5   5   5   5   5   5   5	Cr /5 2-0 +.20 20 20 14	M d	Final Final  For all  Graphs	Sn <sup>II</sup> Sn <sup>II</sup> Sn <sup>II</sup> Sn <sup>II</sup> Srade Code:	): :: Al
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Final Element	C C C C C C C C C C C C C C C C C C C	2919   Mn   7C   /7     70     70	Roll No:  P  27  1014  Nb  1018 S0  1 1611	Chemistr OUA+ S 25 1/8 25 1/8 25 006 77 0000	27 27 .000 Code tends	.30 B .0000	nation y: Ni	/\rangle 2 \\ \frac{1}{2} \\ 1	Cr / 5 / 5 / 2 C / 20 / 20 / 20 / 20 / 20 / 20 / 2	M d	Final Final  O  O  O  G  S  O  O  O  O  O  O  O  O  O  O  O  O	Sn <sup>ll</sup> .UU9  .uugaraa	): :: Al
ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Final Element	C C C C C C C C C C C C C C C C C C C	2919   Mn   7C   /7   .	Roll No:  P  27  1014  Nb  1018 S0  1 1611	Chemistr OULAT S AS US DX DA  .016 Ti .000  Freduct let Size	y and Bill Cosi AAA AAA AAAA AAAAAAAAAAAAAAAAAAAAAAA	.30 B .0000	mation y: Ni SZ Ca .0006	/\rangle 2 \\ \frac{1}{2} \\ 1	Cr / 5 / 5 / 2 C / 20 / 20 / 20 / 20 / 20 / 20 / 2	M d	Final Final  For all and a second sec	Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn <sup>ll</sup> Sn 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ractice: Element Spec. Prelim Prelim Prelim Prelim Final Element Final	JOSTO C C JJ JOSTO AV JOSTO GRADE Heat I:	2919 Mn 7C 77 70 .71 V .001 .71 V .001	Roll No:  P  27  18  1014  Nb  1018 S0  3.43	Chemistr OUA+ S JS UB DX DA  .016 TO .000  Freduct Let Size (0x7.60 00.7.00	27 27 .000 Code Length 127 170 6 0	Cu   3.5   2.9   .30   B   .0000   .30	. Tons 19-1 33.0 0.0 0.0	/\rangle   2   2   3   5   5   5   5   5   5   5   5   5	Cr /5 / 5 / 2 C / 5 / 2 C / 5 / 2 C / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 /	M & & & & & & & & & & & & & & & & & & &	Final Final  Final  O  O  O  O  O  O  O  O  O  O  O  O  O	Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> 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ractice: Element Spec. Prelim Prelim Prelim Prelim Prelim Element Final Element	JOSTO C C JJ JOSTO AV JOSTO GRADE Heat I:	2919 Mn 7C 77 70 .71 V .001 .71 V .001	Roll No:  P  22  3021  Roll No:  P  014  Nb  0000  1018 S0	Chemistr OUA+ S JS //8 DX DX DX DX DX DX DX DX DX DX DX DX DX	yand Bill CC Si A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2	.30 B .0000	.09 Ca .0006 .1 orrs 19:1 33:0 0.0 0.0 als on Plug	/\rangle   2   2   3   5   5   5   5   5   5   5   5   5	Cr / 5 / 5 / 2 C / 20 / 20 / 20 / 20 / 20 / 20 / 2	M & & & & & & & & & & & & & & & & & & &	Final Final Final OC Salar Shi	O1 S O O O O O O O O O O O O O O O O O O	110 555
Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim Prelim	JOSTO C C JJ JOSTO AV JOSTO GRADE Heat I:	2919 Mn 7C 77 70 .71 V .001 .71 V .001	Roll No:  P 252  1 000  1018 S0  1 16111  Social So	Chemistr OUA+ S JS //8 DX DX DX DX DX DX DX DX DX DX DX DX DX	27 27 .000 Code Length 127 170 6 0	.30 B .0000	. Tons 19-1 33.0 0.0 0.0	1) 2 2 2 3 5 ta 6 5 5 5 ta 6 5 5 5 ta 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Cr /5 / 5 / 2 C /	N A	Final Final Final OC OC Salas OC Shi	Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn <sup>tt</sup> Sn 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ractice: Element Spec. Prelim Prelim Prelim Prelim Final Element Final	JOSTO C C JJ JOSTO AV JOSTO GRADE Heat I:	29 19   Mn   7C   /7   50   70   70   70   70   70   70   7	Roll No:  P  22  3021  Roll No:  P  014  Nb  0000  1018 S0	Chemistr OUA+ S JS //8 DX DX DX DX DX DX DX DX DX DX DX DX DX	Zir .000	.30 B .0000	. Tons 19-1 33.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1) 2 2 2 3 5 ta 6 5 5 5 ta 6 5 5 5 ta 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Cr /5 / 5 / 2 C / 5 / 2 C / 5 / 2 C / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 /	N A	Final Final  Final  Solution  Soluti	O1 S O O O O O O O O O O O O O O O O O O	110 555

EAR Modifies   Log (Ulmo)											מה	inec	אנ	eat S	sheet
Continue			g Log (	time) ·		L	MF Treat	ment Lo	(time)		Po	wer &	Supp	ly Cons	umplion
		Slart			ap Wt.		Car Numb	er		╕			- [		
Color   Colo		-00/			<del></del>	Last	Heat - Treatr	nent Stop		$\neg$	•		ŀ		ı——
Second   Color   Col		1—————————————————————————————————————		1-2	21.81	Currer	il Heat - Tree	lment Start	<del></del>		Pow	er Meter			<u></u>
Troping   10.7 3-5   10.3-5     Totales     Totales	— <del></del>	1627.25	<del></del> -		1		Preparation	Time	455	$\overline{a}$	Elec	lrode #1		- <u>1-</u> 50	
Total Time of Heat   Total T	<del></del>	10: 24	11034	7		Curren	il Heal - Trea	lment Stop		_	Elec	trode #2	I		
Total Time of Heat	Тар Тетр.	I		<del></del>			Total Time of	Heal	1.5.4	<del>-</del>	Elec	trode #3			U
Seel Weight   Seel Weight   Seel Weight   Seel   Term Weight   Seel	<u> </u>					Rea	son for Ret	ura to I Mi	A STORAGE		$\vdash$				
Tree Weight	A BAIS II				<del>_</del>						<b>├</b> ─			25	
Semples   Semp					_									<u> 25                                    </u>	<u> </u>
Additions To The Furnace and Ladie	-			49,000#	ا ا			<del></del>			<b></b>			2	<b>-</b>
Final No.   Fina	neight .	side: Waigili			_}			<u>-</u>			<del> </del>		5	<del></del>	<del> </del>
Final No.   Fina				*	Addi	tions '	To The F	urnaca a	nd I ad			_			<u> </u>
Fine   Function   Fu		Flu	xes Add	ed (the)											
Sing Cond.   1000   Cubon	Time				i MF	1 145						)		Wire	Added (ft)
Cal A	Slay Cond.	<del>                                   </del>	1000					<del></del>	Furnace	1	ndle	LMF-	LM	F Sulfu	
Spar   Sim	Cal Al	<del>                                     </del>	1.000			<del> </del> -			<del> </del>	<del>  _</del>				8.	n
Cal C	Spar			ت ـــ					<del> </del>				50		
Doubling	Cal C		/	.	<del></del>	<del>                                     </del>	_!		<del> </del>	164	$\mathcal{Q}$	<u> </u>	<u> </u>	<del></del>	
Ni	l,ime	40Et		200			MO	FeMn	<del> </del>	┼─-			<del> </del> -	— —	<del>- </del> -
Cal St								eCr	<del>                                     </del>	╁		<del></del>	<del> </del>	<b>—</b>  ——	
Aryon Flow   Service   Aryon Log   Rinsa Flow:   Rinsa F	I	<del> -</del>					Mol	y Oxlde		<del>                                     </del>					
Argon Flow   1977   3	CalSil	<u>1</u>		,		<u> </u>	C	opper		-	$\neg \neg$		<del> </del>	<del></del>	<u>"</u>
Time   10   5   16   16					٠		Argon	Log							_[]
Time	Anion Flow	DeVen .	- S1 '	7	<del></del>			1 .	Γ	Ī	===		0		
Time   10   16   16   16   16   16   16   16	ì					Tem	netatures	alan Toe	00	<u></u>			Rinse	Flow:	
Final   Fina	. Time	1015	1/1/21			1		GITE TITE	68						
Chemistry and Billet Information   Final O <sub>2</sub> (ppm):	1 •mp. ("F)				·			<del> </del>	<del> </del> -				_		
Proctice:	Oxygen (ppm)					<del>  -</del>		<del> </del>	<del> </del>	├					
Figure					Ch	mist	v and Bi	let Infor	no nélene	<u></u> _			Final	O <sub>2</sub> (ppm):	
Final   C   Mn   P   S   Si   Cu   Ni   Cr   Mo   Snk   Al	Proctice:	110		Roll No						_		٠		!	
Spec.	Element	<del></del>	Mn	<del>,</del>	<u> </u>		<u> </u>				) Ps	1 7-1	-		
Prelim   Y   D   S   D   D   2   3   S   D   C   D   D	<del></del>	<del>├╼╍┰╶</del> ╤╌╼┦		<del>                                      </del>	<del></del>				Ni		Cr	М	0	Sn≌	Al
Prelim	<del> </del>							_35	20	) ;	20	01	-		<del></del>
Prelim   CQ   QS   30   30   30   30   30   30   30   3	├- <del></del> -	<del>-</del>	<del></del>				0	2.3			 S	2	$\neg \uparrow$		
Prelim				<del> </del> -			81	· ·					=- -	7	
Prelim		1/0	<u>ros</u>	<del> </del>	- 3	0	20			7		1-	$\dashv$		
Prelim   Final   .16   .69   .008   .026   .24   .23   .09   .07   .02   .809   .07   .02   .809   .07   .02   .809   .07   .02   .809   .07   .02   .809   .07	i			<del> </del> _						1		<del>-</del>	_		
Final   .16   .69   .008   .026   .24   .23   .09   .07   .02   .009   .000   .000   .000   .000   .000   .0013   .0014   .002   .000   .000   .000   .0000   .0013   .0014	-·	<del></del> -		ļ						1			-+		
Separate   Separate	<del></del>	16	69	000	2 - 7	372							$\neg +$		
Final .004 .002 .000 .000 .000 .000 .0013 .0014 .0014 .0016	<u> </u>			<u> </u>				. 23	.09		. 07	<u> </u>	02	.009	
GRADE JUIS SQ  Heat No. X-1279				<del></del>			1		Cn	1	2n	DI	7		10
Heat No. X-1275		_ 1	.002			000	. 000	.0000	0013		0014			DE CUOS.	
Split B.O.   Rillet Size Length Count Tons Stack   4Scrap Tone	r			,•							-				
1   1   1   1   1   1   1   1   1   1	i				Fro	duc t	Code 3	(0):						<del>-</del>	~
Meller   LMF Operator   Ledleman   Ledle No.   Gate No.   Heats on Ledle   Heats on Plug   Date   Shift   Heat Number	] 	Λ	5987		iet S 00X7.	17e 00	L@ngth 197	Count	Tons	Sta	ck:				
Meller   LMF Operator   Ledleman   Ledle No.   Gate No.   Heats on Ladle   Heats on Plug   Date   Shift   Heat Number	, ,			5.	(10.47.5)	00				t: I	J				i
Meller LMF Operator Ledleman Ledle No. Gate No. Hents on Ladle Neets on Plug Date Shift Heat Number  Document No: MS-013  Revision Date: 04-19-1999  Revision Date: 04-19-1999  Revision Date: 04-19-1999	 		-					_	0.0				0	. 0	1
Document No: MS-013  Revision Date: 04-19-1999  Revision Date: 04-19-1999  Revision Fault 5  Revision Fault 5  Revision Fault 5	Meller LI	MF Operator	Ledlem	an Ladie	No Get	e No I					<u> </u>			. 0	i
Document No: M5-013  Revision Date: 04-19-1999  Revision Date: 04-19-1999	710	<del></del> -	1181	~		3 , 40.	THE SHIP LE	- Heats	on Plug				Shift	Heat N	lumber
Revision Late: 04-19-1999 Revision Late: 04-19-1999	Docum	teni No: MS-01	<u>ц. ю.э</u>				8		F7	5-	<u>/ā</u> .	10	//3	X-7	279
	Romarks;	<del>\</del>	/				Revision Date:	04-19-1999				<del></del>	Revisio	n Level: F	

	AF Melti	to food								<u> </u>				neet
					LIVI	F Treatr	nent Log	(time)		Pov	ver & S	upply	Consu	mption
Last Tap	Start	Stop		p WI.		Car Numbe	ы		$\neg$				Amoun	Used
1st Chg.		013	<del></del>		Last H	aat - Treatm	ent Stop	1000	7			At F	nusce	ALLMF
2nd Chg.	0755	081		COL	Current I	leat - Treat	ment Start	1009		Power	Meler	77	420	2028
	68.3.2	V 85		408	Pi	eparation T	lme	4001		Electro	i# ebo			
3rd Chg.	0868	(	22		<u> </u>	leat - Treat				Electro	de #2			
Tapping	0959	_ <del> ~~~</del>	<del>- /  </del>		<u> </u>	<del></del>		110.5	_	Electro	de #3	_		
Tap Temp.	13FC	Totals			<u> </u>	tel Time of				Lance	Sections	-		
	Total Ti	me of Hea	et:				urn to LIMF	/ Furnace		Roof D	ella	2	4	
LMF	Ledie Weight			٦ - ا	Est. R	etum Wgt.	Added	Scrap Wgt		Wall H	eal	7	7	
Steel	Tere Weight		49,000#	-		· <u> </u>			\	Therm	ocouples		7	
	Steel Weight		70,000 #	-						Sampl	ers			
	·			_						Oxyge	n Probes			
				Addi	lions To	The Fr	irnaco a	nd Ladio	<u>_</u>					
	Flu	IVAC Add	ad (Ib = 1	-		, tille i t							!	<u></u>
Time	Fumace	Ladie			1	<b>-</b>		Alloys Ad	ded	(lbs.)			Wire A	dded (ft)
<del></del>	7 2177000		LMF	LMF	LMF	17	ime	Fumace	Le	dle	LMF	LMF	Sulfur	
Slag Cond.	<del>                                     </del>	1000			ļ		Brbon			T			Cerbon	
Cal Al					ļ	75	4 FeSI		20	50			Cet Sil	150
Spar	<del>                                     </del>				<u> </u>	-1	iMn		6				FeCb	
Cal C	<del> </del>				<u> </u>	HC	FeMn						FeB	1
Lime	14000		1000	<u> </u>	<u> </u>	MC	FeMn '						FeTi	<del>                                     </del>
DoloLime						F	eCr						FeV	1
- NI					ļ	Moly	Oxide						Nitrovan	
CalSI					<u> </u>	Co	opper	<u> </u>					FeS	<del>                                     </del>
	: }			بهیشت با د د		'Argòn'	Log .	_					1	7
Argon Flow	र शहुभ ५	-A .			<u> </u>	T -		1			<del></del>	Dinas Els		
		<del></del>	1				-Aug I	<u> </u>	L			Rinse Flo	JW: -	
Time	INCAN I	- G 2 F		1 1 11			an១ Tim	es						-
	C 2/ 2		0945						٠,		- 7	Final N <sub>2</sub>	(opm):	
Temp. ("F)	00100	3013	30110	<u> 9002</u>	2873	2901		<u> </u>				Final Tel	mp (°F):	
Oxygen (ppm)	<u> </u>				<u> </u>	<u> </u>	<u> </u>					Final O <sub>2</sub>	(ppm):	
1				Ch	emistry	and Bil	let Infor	mation						6-
Practice:	110		Rol! No	). <sub>C</sub>	ctr(	C	hemistr	y: 0	, /		^	<u> </u>		
Element	С	Mn	P	<del></del> -	s	Si	Cu	Ni	1		$\neg -$		- II I	
Spec.	177	1 3.	<del></del>					<del> </del>	4	Cr	Мо	<del></del>	Sn <sup>II</sup>	Al
Prelim	16	1.5	1 29	<u> </u>	25	72	35	70	_	15	1)	6		_
	1-14	1-14	2 5		40		$a_1$	6		12	1	1 8	-	-
Prelim	<del>  7</del>	1,00	·		<u> </u>	M								
Prelim	15	69		_  3	(B)	25					<b> </b>			
Prelim		<u> </u>		.					1		<del> </del>			
Prelim			1	_				<del> </del>	+-		<del> </del>		-+	
Prelim		<del> </del>	1	+			<del></del>				<del> </del>	_		
Final	.16	.71	.009	.0	22	. 24	. 20	.07	+-	.14	1 :0	<del>_   _</del>	008	
Element	AI	v	Nb		Ti [	2r	В	<u> </u>	<u> </u>		<u> </u>			
Final	.004	.002	.000			.000	.0000	. 0005	1	2n 2012	DI	Grade (	Code: 1.	0
	GRADE	1 .002	1018 S	1	-	. 000	.0000		٠.ر	,012		Sample	Тура:	555
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<b>\</b> !	- Heat 1 - Silit	ชื่อ. ฟ.⊶ วะก.			oduct	Code	320							
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	<del></del>			<u> :</u>		<u> ^</u>	<u> </u>		<u>-</u>	· <b>-</b>		<u> </u>		
	LMF Operat			!	ste No. F	leals or: L	adie Heat.	s on Plug		Date		Shift	Heat N	lumber
919		45	2-	(	[	37	77.	5	-5-	12-1		7/2	1) 1	3/1/
Doc	ement No; MS					Revision Date	04-19-1999	<u> </u>	<u></u>	100		2.14	11-1.	אטר
Remarks;					<del></del>	<del></del>			<del>-</del> =	-=-		Revision Le	vcl· F	
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	CKY Elec		`				E/	<b>\</b>	/ L	MF C	•	nt	oinec	H k	eat S	Sheet
	EAF Melt	ing Lou	ullii	e)			MF Trea									umption
	Start	1	op	Scrap	WI.	<b> </b>	Car Num				٣		3110.	1		
Last Tap		- 06	39	. —		Las	il Heal - Trea	lment	Ston	<del>  6</del>	$\dashv$			-		in! Used
1st Chg.	065	8 07	35	650	10		ent Heat - Tre			900		Pau	ver Meter		At Furnace	
2nd Chg.	_ to 73_	7	]	5						90		1	cliode #1		24820	2575
3rd Chg.							Preparation			5.50	(3		trode #2			<del> </del>
Tapping	<u> </u>	1 08	49			Curre	ent Heat - Tre	almen	t Slop	100	S	-				<u> </u>
Tap Temp	3008	Tof	els:	-	$\neg$	L	Total Time (	of Heat					lrode #3			<b> </b>
	Total T	lme of H	leat:			Re	ason for Ri	-turn	to LM	/ Furnac		_	ce Sections  Delta	<u> </u>		ļ
LMF	Ladie Weigh	1					l. Return Wg			d Scrap Wo		<b>-</b>	Heat		24	<u> </u>
Steel	Tere Weight						_						mocouples		24	<del> </del>
Weight	Steel Weigh		49,0	000#								1	nplers		4	<del> </del> -
VVEIgit.	Older Vibigit	<u> </u>										i	gen Probes		<del></del>	<del> </del>
					0 ddi	ione	To The		==				g-iii topbet			<u> </u>
	FI				- 111//		To The I	um	ice a	no Lad	e					
Time	Furnace	uxes Ac								Alloys A	dded	(lbs	)		Wire	Added (ft)
		Ladie	_ L/	MF	LMF	LM	IF .	Time		Fumace	L	die	LMF	LMF		
Slag Cond	<del></del>	1000	1					Cerbor			1	$\overline{\circ}$		<del> </del>	Carbo	
Cal Al	·	<del> </del> -	1.,			<u> </u>	7	5% Fa:	Si	T	+-	50	100	40	Cal S	
Spar		<u> </u>	4.	<u> </u>				SiMn			1	<del></del> -	380	<del>  ```</del>	FeCt	
Cal C		<del> </del>	-			<u> </u>	H	IC FeM	ln .		T		بحب	<u> </u>	FeB	
Lime Dolot ione	4ver	<del> </del>	<del> </del>				M	IC FeM	in_		$\vdash$		<del></del>		FeTi	
DoloLime			+					FeCr			$\vdash$			<del></del> -	FeV	
Cal Sil	<del>- '-</del>	<b> -</b>		_ _			M	oly Oxi	de		T				Nitrova	<del></del>
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							Argor	Los								
Argon Flov	V १ वस्तु स	n.	T-			Ī.				ī —	-					
			<u> </u>								<u> </u>		_ :	Rinse	Flow:	
Time	0875	0825				U. III	perature	s an	Um	es _	<u>;= *</u>	سند و	حمش في المام			
Temp. (*F)	3801	2835	10K	39 08	143						1.			Final	N₂ (ppm):	<del></del>
Oxygen (ppn	<del></del>	X1 37	.,46	99 3	108		f	_ _							Temp (°F)	
75(рр.	7		<u> </u>			<u> </u>				<u> </u>					O <sub>2</sub> (ppm):	
					Che	mist	ry and B	illet i	nfor	mation						
Practice:	عنت		Ro	ll No:	04				nistr			7	AFTa	<u></u>	<u>.</u>	<u> </u>
Element	С	Mn		P		<u></u> -	Si	<del></del>		<del></del>			131 (X	· ·		
Spec.	11	+			<u> </u>			<del>  '</del>	Cu	Ni		Cr	Mo	2	Sn≞	Al
Prelim	1/2	70		30	1	<u> </u>	12.20		<u> 35</u>	70	2	15	0			
Prelim	1-7	17		<u> </u>		75	D		오[	12	-	8		3	10	
	1	-M				<u> </u>	178						<u> </u>	-	$IV_{-}$	
Prelim	10	171	_ _		ح_	-[	23			T	1		_			
Prelim	<del> </del>	<u> </u>									+-		<del> </del>	-		
Prelim		$L_{-}$			<u> </u>						-		+			
Prelim			_ _		·		<del></del>	<del> </del>			<del> </del>			_		
Final	.15	. 70		.008	0	16	.24	-	21	.11	+	.10	<del>- </del>	<del>,  </del>	7377	
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Final	.004	.002		000	.00	!	.000		777	Ca	1	Zn	Di	Gra	de Code: 1	.10
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919		111		10			51							2/=	rieat /	Vumber
Do	nment No: MS-	013		<del></del>	==		Revision Date	e: 04-19	1999	<del>   </del>	4-1	12.	200	12	<u>K-/-</u>	178
Remarks:	<del>_</del> _			<del></del>							===			Revision	Level: F	
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EA	F Weitin	g Log (t	ime) .	•	LIME	Trealm	ent Log	(time)	.1	Po	wer &	Sup	pły (	Const	mption
[	Stert	Stop	Scri	p Wt.		ar Number			Ē				<u> </u>	Amount	
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tsl Chg.	0605	C+44		460	}	eat - Treatm			-	Powe	Meter		<del> </del>	}	
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	70.8. 711	ile or Treat	<del></del> -			turn Wgt,		d Scrap Wgt,	4	<u> </u>	Delta		ユニ	3	<del>-</del>
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Weight S	leel Welght			┥	\- <del></del>				_\	Sam	plers		<u> </u>		
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Cal C	<del> </del> _				1	HC I	FeMn	1			पळ			FeB	1
Lime	4000		Oo 101			MC	FeMn							FeTi	
DalaLime					<u> </u>	Fe	aCt .					1		FeV	1
Ni .	!					Moly	Oxide					1		Nitrova	п
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:	1			:		Argon L	100								
rgon Flow		1		<u> </u>	7			· · · · · ·		<u>:-</u>		$\overline{}$	_==	-	5.
7 <b>9</b> 011 1 1014		<u>in </u>		Ŀ		ــــــــــــــــــــــــــــــــــــــ	<u>l :</u>	1				Rit	ise Fl	ow:	
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			rus <sup>es</sup> pare	1:	Tempe		and Tir	nes	·.		`	~!—		(ppm):	
. Time	0733 212	3017	tus <sup>ta</sup> ligan		Tempe	±1	and Tir	nes	·.			Fir	al Te	nıp (°F)	:
· Time Temp. (*f <sup>-</sup> )			rus <sup>To</sup> pyro	· ·		5			<i>'</i> .		\	Fir	al Te		:
. Time Temp. ("F) Ixygen (ppm)				C	temistry	and Bil	let Info	rmation				Fir	al Te	nıp (°F)	:
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Time Temp. ("F) Exygen (ppm) Practice:				C	temistry	and Bil	let Info	rmation		Cr	FA	Fir	al Te	nıp (°F)	:
Time Temp. ("F) Exygen (ppm) Practice:	110 C	3017 Mn	Roll N	Ci lo: (	hemistry 0,44 s	and Bill	let Info	rmation ry:		Cr	Fis	Fir Fir Mo	al Te	іпір (°F) 2 (ррт):	:
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Time Temp. ("F) xygen (ppm) Practice: Element Spec. Pretim. Pretim	110 c 16 6 S	3 p 17  Mn  70  7  3 9	Roll N	G: C	nemistry 0,44 5 25	and Bill	let Info	rmation ry:		Cr /5	FI	Fir Fir Mo	nal O	(ppm): Snt	:
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Time Temp. ("F) xygen (ppm)  Practice: Element Spec. Prelim Prelim Prelim Prelim Prelim Prelim Frelim Frelim	1/0 C //0 S L7 (L0 A1 .004	3p17 Mn 70 7 39 70	Roll N P 0.20	Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci Ci C	10.44 5 25 81 25 25 25 25 25 25 25 25 25 25	si 22 5 13	let Info	mation ry: Ni 22		Cr /5	3	Fire Fire Fire Fire Fire Fire Fire Fire	ral Te	Sn <sup>k</sup> .UII	: AI
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	-,	<u> </u>	, mc	•			- / L.	VIII (	)[	np	inec	I He	eat S	heet
E		ng Log (i	lime)		Li	AF Treate	nent Lo	(tinte)		Po	wer & S	uppl	/ Cons	Imption :
	Start	Stop	Scrap	WI,		Car Numbe	or .		Ī					nt Used
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2nd Chg.	10/2	205153	5 6 6 H/X		Curren	Heat - Treat	ment Start	455	$\neg$	Powe	er Meter		9750	2071
3rd Chg.	00.155	<u> </u>	49			Preparation T	Ime	57.5	$\dashv$	Elect	rode #1		-·· <u>·</u>	7017
Tapping	16:24	F 06:3	<del>,</del>	}	Curren	Heat - Treat	ment Stop	1.75	┪	Elect	rode #2			<del></del> -
Tep Temp.	217	Totals:			<del></del>	olal Time of		<u> </u>	$\dashv$	Elect	rode #3			
тар төлгр.	Total Ti	Ime of Hea							ᆜ	Lanc	e Sections			
	Total II	ine of Hea	1:			on for Ret Return Wgt.			_	Roof	Delta		23	
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Weight	Steel Weight			]						Sam				
	**			J	<u> </u>				_]	Охуд	en Probes		·	
		<u> </u>		Addi	tions	o The Fo	irnace a	nd Ladi	е			٠.		
	Flo	uxes Adde	ed (lbs)			T	<del></del>	Alloys Ac	lded	(lhe			Lug	
Гіте	Fumace	Ladie	LMF	LMF	LMF	1 -	ime .	Fumace		die l			+	Added (ft)
Sing Cond.	1	1,000			<del></del>		erbon			-	LMF	LMF	Sulfu	
Cal At		7500		·	<del> </del>		% FeSI	<del></del>	5			<u> </u>	Carbo	<del></del>
Spar		<del></del>			1		SIMn	<del> </del>	2		<del></del>		Cols	
Cal C					<del>                                     </del>	-1	FeMn	<del> </del> -	100	20			FeCh	
'_lme	4,000					-i	FeMn	<del> </del>	-	-		<del></del>	- FeB	
Dr loLime	7					I	PCr	<del> </del>	-				FeTi	
NI .							/ Oxide	<del> </del>					- FeV	<b>-}</b>
Cal SII						C	opper /	<del></del>	-				Nitrova	
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Aigon Flow	1.77				_	Argun	LUU							
190.11.10.11	25/38	- , 41'			<u> </u>		1 .		<u> </u>			Rinse I	Flow:	٠. ا
					Temp	eratures	anel Tin	ies						
Time	P1030						-	T	1.			Einel A	l <sub>2</sub> (ppm):	
Temp. (*F)	29810			_		•	<del> </del>	<del>-</del>					emp (°F)	1
Oxygen (ppm)					1	1.	\ <del></del>	<del> </del>	-					
				Ch	emist	y and Bi	llet Info	mation	<u></u>				) <sub>2</sub> (ppm):	
Practice:	111		Roll No.		<u> </u>								1	3.5
Element	100	1			2 <i>44</i> ,		Chemisti	y:	<u> </u>	_				
	C	Mn	P		S	Si	Cu	. Ni		Cr	M	0	Sn!!	AI
Spec.	14	70	020	0:	25	22	35	20	$\top$	15	06		<del></del>	<del> </del>
Prelim	Lo	41			80			10.0	- -		-120	-		<del></del>
Prelim	C								-			-		<u>-</u> -
Prelim	15	Ţ			· /	<del></del> .	<del></del> -	-	-			_		
Prelim		<u> </u>	<del> </del> -	-		<del></del>	<del>-</del>	<del> </del>	- -		_			
Prelim		<del> </del>	<del> </del>	-				-	-		<u> </u>			
Prelim		<del> </del>	+	-		-	<del>-</del>	-  <del></del>	_ _					
Final	15	+.86	.010	<del>- </del>	026	1 71	- 1 Ar -		_					
Element	AI	<del></del>		<u> </u>	029	+.31	.18	.13		. 09	<u> </u>	03	.008	
	<del> </del>	V	Nb		Ti	Zr	В	Св	T	Zn	DI	Grad	le Code:	110
Final	GRADE	.003	1018 SC		000	.000	.0000	.0019		UUI4	<del> </del>	<del></del> -	de Type:	555
<b>.</b>		- n	.•	′		_					· <del></del>			
1	Heat W	o X-1		Fro	duct	fode :	317							<b> </b>
	SFlit A	፡ የ√በ. 4 5784	k kill	et S	ize 1	enath	Louis	Tons	Sta	ct l	#Scrap	- Ton	ë	!
	ŀ	5965		0%7. 0%7.	17.57	1 % t 1 6 6	.5.3	28.7 E	: f. · .	1	0	0.	0	i
1	ľ) Ti	0		• • •	-	0	вт. С	14.5 (	1; **	J	0			!
<u></u>		· <del></del>		<u></u>		<u></u>	^	Λ.Λ			0	0.		 
Meller I	MF Opera	for Ladlerr	nan Ladie i	Vo Ga	ele No.	Heats on L	adle Hae	s on Plug		Dat		CF:0	<del></del>	<u></u>
4/7		712		<u> </u>		2/		<del></del>	سير			SIIII	neat	Number
Doc	rmeni Na: MS					<u> </u>	; 04-19-1990		$2^{-}$	12	-00	1/-1/	<u>X-/</u> _	2 <i>22</i>
Remarks:		<del></del> -	<del></del>	<del></del>							·	Revision	Level 1	

				<u>.                                    </u>			\			MIIL	ımec	1 H6	eat S	nee
	EAF Melti	ng Log (	(time)		L.	MF Trea	lment L	og (lim	e)	P	ower &	Suppl	y Const	Imption
Last Tap	Start	Stop		p Wt.		Car Num	ber		1	i			Amour	
1st Chg.	4/1//	040			Last	Heat - Trea	lment Stop	, 02	54	1 ·			l Furnace	AI LMF
2nd Chg.	04:16		0 66	100	Currer	nt Heat - Tre	atment St			Pov	ver Meter	7	20910	. 1 Y
3rd Chg.	151)-		- <del> 47</del> (	·		Preparation	Time	<del></del>	<u>,(, 0</u>	Elec	cirode #1			<u></u>
Tapping	055	00515	-		Curren	l Heat - Tre	alment Sto	ې کې م		Elec	ctrode #2			
Tap Temp.	3156	Totals			-	Total Time o	fileat	+ 4	0	Elec	drode #3			
	Total Ti	me of He			Rea	son for Re	turn to I	ME / For	1200	n	ce Sections			
						Return Wol		ded Scrap		₹I b~~~	d Della	_	21	
LMF	Ladie Weight		<del></del> .	_						11 1-	l Heat		22	
Steel	Tere Weight		49,000 #	_		-				"I <del> </del>	rmocouples	<u> </u>		
Weight	Steel Weight			╛	iΛ	717	<del></del>			-I <del>I</del> -	gen Probes			
			5 Fee	20 61410	//	1.1		,			gen Flúos		1	
<del></del>				Addit	ions	To The F	urnace	and L	dle					
Time	Fumace	ixes Add						Alloys	Adde	d (lbs	.)		Wire	Added (ft)
		Ladie	LMF	LMF	I,MF		Time '	Furni	ice	Ledie	LMF	LMF	Sulfur	7
Slag Cond.	<del>  - : - :</del>	1,000					Carbon		$\Box$		80	50	Carbon	<del>                                     </del>
Cal Al	-}		77		<u> </u>	75	% FeSI			350	60	50	Cal Sil	+
Spar Cal C			3-75				SIMn		$ V_{o}$	00		7.5	FeCb	<del>†</del>
	1/2		8-6			. di	C FeMn		[_		800		FeB	<del> </del>
Lime Deletion	4,000		480			14	C FeMn						FeTi	<del>                                     </del>
DoloLime							FeCr						FeV	<del>                                     </del>
Cal Sil						Mo	ly Oxide						Nitrovar	<del></del>
CELSII	<u> </u>						Copper	Щ					FeS	<del>                                     </del>
						Argon	Log							
Argon Flow	/ Dages	· 40 ·			_				$\neg$			Rinse i	j Stava a	
					Temp	erature	s tînel T	imas				TUISE	70W, 15	<del></del>
Time	0600	0027	0644			1		m,c3 ,	<del></del>					
Temp. (*F)	2873	2889	79,5	·		0 ,				<u> </u>		Final N	l <sub>2</sub> (ppm):	
Охудел (ррп	47-41-	<u>~ 4.19</u>					<del></del>	<del>-  </del>					emp (*F):	
												Final C	) <sub>2</sub> (ppm):	
Practice:	110		Roll No		inisu 7.7	y and B	illet Int Chemis		n				1	
Element	710	Ma	<del>-,</del>	<u>, y</u> z	<del>2</del>		<del></del>	siry:						
	<del></del>	Mn	P	;	S	Si	Cu	^	j	Cr	Mo	<u> </u>	Snt	AI
Spec.	16	70	020	102	25	22	33	1 2	0	15	06		20	
Prelim,	6	$Z_{-}$	4	18	5	<u> </u>	20		7	8	3		9	
Prelim		40	7	70	) [	20				<u></u>	<del> </del>		-	
Prelim	1/2	68	7	14	0	20		_	<del>-  </del> -					
Prelim	14	·		3		<u></u>	† <del></del>	+-	$\dashv$		<del>-  </del>			
Prellm		I	· ·		<u>~</u>		<del> </del>				┥—			
Prelim	10	69	007	021		26		-			-			
Final	1-18-		1 11117	<del>- -W/L</del>		.26	.20	.16		.09	.03	<u> </u>	009	
Element		roo Y	.00%	1 7	<u> </u>	70	<u> </u>	1 6					11	
Final	OO4 GRADE		000 018 SO	<u>, ood</u>		00gr	0000	.0023	-   • 0	061'5	DI	Grad	e Code:	555
	Olomb	<u> </u>	. <b>PIO JQ</b>		1							Samp	la Type:	
	- Heat ∧ - S⊳lit	lo. W-1	1362	Fra	quet	Code	341							-/
	i i	5984	(4 HG1 5.	00X7.	00 00	Lengti 191	h Cou	rit Tor Sa ea	is S	tack				
	<u>F</u> t	0					0	64 50. 0 0.		- I			. () . ()	
	C	0			,	(	)	0 0.	0			_	.0	
	1450	<u> </u>	<u> </u>				<u>) </u>	0 0			· <b></b> -		. 6	
Meller	LMF Operat	or Ladien	nan Ladie	No. Gar	e No.	Heats on I	adie He	ats on Pi	ug	Da	te T	Shift	Hoat N	lumba
7/7	367	47	02			27	17	57		-/ 7		1.0	77 1 -	/ A
Do	cument No: MS-	013				Revision Dat	: 01·[9·10	99	$\sim$	12	<u>-wav</u>	<u> </u>	W13	62
Remarks:			7	<del></del>	<del></del> -			<del></del>	<del></del> -	<del></del>		Revision	Level F	<del>-</del>

	EAE BONDA								UI	IIL	ieu	пе	als	neet
	EAF Melti	ng Log	(time)		LIM	F Treat	ment Log	(time)		Pe	wer & S	upply	Consu	mplion ·
<del></del>	Slart	Sto		ap Wt,		Car Numb	er	2					Amoun	
Last Tap	29.00	20.3%		<u></u>	Last He	al - Treatn	nent Stop	05/0	5			\_\_\	Furnace	ALEME
1st Chg	03/23	<del> </del>	22 2	400	Current I	teat - Trea	lment Start	(151	,	Pow	er Mata:	-	1240	
2nd Chg.	04.64	7		4		operation 1			1	Elec	trode #1		1440	25 <u>25</u>
3rd Chg.		<del></del>					lment Stop	4190	-	Elec	Irode #2			
Tapping	_Q'Y' <u>\Z</u>		20		<u> </u>	lel Time of		Q22 Z	4	Elec	Irode #3			
Тар Тетр		Tola	<del></del>		<u></u>			<u> </u>		Land	e Sections		<del></del>	
	Total	ime of He	at:		Reaso	n for Ret	urn to LMF			Root	Della		77	
LMF	Ladle Weigh	ı		7 I	ESI. H	elum Wgt.	Added	d Scrap Wg		Wall	Heat	- 12	2.2	
Steel	Tare Weight		49,000#	7	بر سا	-61	ON			The	mocouples		<del></del> -	
Weight	Steel Weight			-1	-4-0	was	5/2	<u>- · </u>		Sam	plers			
			·	<u>-</u> [	Υ	716	/			Оху	gen Probes			
				Addi	ions To	The F	urnace a	nd Ladi	ė					
	. ; Fl	uxes Add	led (lbs)			1				-	<del></del>		<u> </u>	
Time	Fumece	Ledie	LMF	LMF	LMF	<del> </del>		Alloys Ad				<del></del>	Wire .	Added (ft)
Slag Cont	i.	1:000		<del></del>	<del> </del>	<del></del>	Time 	Fumace	1 4.0	dle	LMF	LMF	Sulfur	
Cal At		4/10C	<del>  </del>		<del></del>	<del></del>	erbon	<del> </del>	<u> </u>		100	40	Carbor	
Spar			3-6			<b>!</b> -	% FeSI	<del> </del> -	7	50	30	50	Cal Si	
Cal C			10-6	<del></del>	<del></del> -	<del></del>	SiMn . FeMn	<b> </b>	100	12			FeCh	
Lime	4000		300			1		<del> </del>	<b> </b>		<u>_300</u>		Fe8	
DoloLime	- HOLL		3,00		1	1——	FeMn	·	<u> </u>			<u> </u>	FeTi	
NI	1				<u> </u>	┩——	y Oxida	<del> </del>	ļ				FeV	
Cal SII						<del> </del>	Opper	<del> </del>	<del> </del>				Nitrova	n
			!—l		<u> </u>			<u> </u>					FeS	
Amor Flor						Argon	Log							1
Argon Flor	W 25 CH C	<u> </u>	<u> </u>		<u> </u>							Rinse F	Flow; •	
					Tempe	ratures	and Tim	es 🧠						
- Time	<u> </u>	0546	14.1		1000	15	T 19 46	1	4,			<i>FI</i> 10		
Temp. (°F)	2377	2893				0	<del> </del>	<del> </del> -	-				2 (ppm):	
Oxygen (ppr	n)					1.	<del></del>						emp (*F)	·
				Che	mlstru	and Ri	llet Infor		<u> </u>			Final C	) <sub>2</sub> (ppm):	
Practice.	. ///	:	Roll No							<u> </u>				(*)
Elemen	/_//_	T - 1.		). <u>O</u>	44		Chemistr	y:	_					
	( C	Mn	P	;	S	Si	Cu	Ni		Çr	Mo		Snll	Al
Spec.	16	70	10.20	0 03	25	22	35	20	$\top$	15	<del></del>			
Prelim,	- 5	7	13	6	3		21	77	- -		10,6	2	70	
Prelim		44	16	5	7	7		<del>                                     </del>	-	<u>e_</u>			7	
Prelim	7.5	75	8	56	<u> </u>	(-)		<del> </del>						
Prelim		<del> </del>	<del></del>	142			<del></del> -	<del> </del>	-			_		
Prelim								<del> </del>	4_				]	
Prelim	- - <del></del>	<del> </del>	<del> </del>						_ _					
Final	.18	+.76	.007	. 0.	22	. 24	.22	7.11	$\downarrow$	09		,,	-009	
Element	AI	l v	<del></del>					<u> </u>				,3	- 003	<del></del>
Final	.004		Nb		ri OA	Zr .	8	Ca	1	311	ומ	Grad	e Code;	.10
	GRADE	,005	000.		UU .	.000	.0000	0018		9015		<del></del>	le Type;	555
		. X-11 H.O. 1 S982 G	r Bir	Prod Let Si 10X7.0	re Lo		Count	1005 9 46.7 E 0.0	 Stac E-1	 :I- I	===== 9 0 0	0.0	)	
A4-11		<del></del>	<del></del> -	<u></u>	<u>-</u>	<u>^</u> _		<u> </u>		_	n	0.0		!
Meller	LMF Operal	<del></del>		No. Ga	le No. H	eals on L	edio Heats	on Plug		Dat	=			<u> </u>
917	<i>3</i> 6 /	45	3 17			Ø	7	7	5.		1		neat /	Vumber
Do	coment No. MS.	01)		<del></del>		evision Date:	: 04-19-1990		<u></u>		001	<u> 1-2</u>	$\Delta \angle i$	76
		_==		<del></del>								Revision	lavel; F	

				<u>.                                    </u>		- EA	<u> </u>	<u>                                      </u>	VIF C	OI	np	med	ח ג	eat s	neet
	AF Melti	ng Log (	time)		1	MF Treat	ment	Log	(time)		Pe	wer &	Supp	ly Cons	umption
	Start	Stop	_	rap WL		Car Numb	100		1	₹					nt Used
Last Tap		02:1	00 -		Last	Heat - Treat	ment S	Ιορ	04'	7				Al Furnace	ALLME
1st Chg. 2nd Chg	02:10	03:0		200	Curre	nt Heal - Trea	iment	Slart	D173	71	Pow	or Meter		20940	2500
3rd Chg.	102:1	4	40		<u> </u>	Preparation '	Time	-	5932	H	Elec	lrode #1		_1	
Tapping	10216	5 0110		<del></del> -	Currer	it Heat - Tres	ıtment .	Stop	05/0	-	Elec	liode #2			
Tap Temp.	2055	Q4:0			I	Total Time of			0110	┥.	Elec	lrode #3			
	Total Ti	me of Hea	<u> </u>		ا ا	son for Re		L AAL	#1 -m	붉	<b>—</b>	e Section:	•	<del>_</del>	
	<u> </u>			<del></del> _		Reium Wgt.		_	Scrap Wg	_	-	Dolta		21_	ļ
	sdle Weight			_			1			$\exists \parallel$	<u> </u>	Hoat		21	<del> </del>
	Tare Weight		49,000#								<b>—</b>	mocouple:			<del></del>
Weight	Steel Weight					5-13	P77	P				en Probes			<del>                                     </del>
								_							<u></u>
					แผบกร	To The F	urna	ce ar	nd Ladi	2					: 
	FIL		<u> </u>	<del>,</del>	· .	<u> </u>		-	Alloys Ac	ded	(lbs.	<del></del>		Wire	Added (ft)
Time	Fumace	Ladie	LMF	LMF	LMF		Time		Furnace	L	die	LMF	LM	F Sulfu	, T
Slag Cond.	· ·	4000				C	arbon					60		Carbo	n
Cal Al				<u> </u>		75	% FeS	<u> </u>		2	50			Cal S	1
Spar			<del></del>	ļ			SIMn				00.			FeCt	
Cal C	1.7.		<u>2-C</u>			HC	FeMn					250		FeB	
Lime	4,000		000		<b>_</b>	MC	FeMr	١						FeTi	
DoloLime					-		FeCr							FeV	
Cal Sil	<del>                                     </del>					Mo	ly Oxid	8	ļ	L.				Nitrova	an
CBI SII				<u> </u>		c	opper			L	{			FeS	
			· ·		•	Argon	Log								
Argon Flow	7 8 H 19	, ii		Ī	<u></u>		<u>. T</u>		<u> </u>	<u> </u>			Pins	e Flow; ↔	
					Tom	peratures						<u> </u>	1 (1713)	B T ICHY, C.	
Time	NIA	nico	4 1 1 1 1 1 1		1.	Jeralures V	ane	2011	es	_					
Temp. (*F)	1099	277	13 Table	·	<del></del>					Ŀ			Fina	IN₂ (ppm)	:
Oxygen (ppm)	2875	2845/		ļ. <u></u>	<b>_i_</b>	•			ļ <u>.                                    </u>				Fina	I Temp (F	):
Oxygen (ppm)	<u></u>	<u></u>		<u> </u>						L,			Fina	IO <sub>2</sub> (ppm)	:
	<u> </u>			C	hemist	ry and Bi	illet l	nfori	mation						
Practice:	110	,	Roll N	o:	n44	. (	Chen	nistr	γ:						
Element	C	Mn	P	(	S	Si		- Cu	Ni	_	<u> </u>	Т			<del></del>
Spec.	17%	171					╄		+	+	Cr	M		Sn <sup>li</sup>	AI
Prelim	1/0	17	02		25	22	3	_	20		45	0	6	20	
Prelim	0	16	10	<u> </u>	30	<del></del>	12	0	10		<u>フ</u>	12		7	<del>-</del>
	10	47	<u>Ce</u>		<u> </u>	25/				L		1			
Prelim	12	65	6		26	24				T					<del>                                     </del>
Prelim		ļ. <u> </u>					$\Gamma$			$\top$					<del> </del>
Prelim	ļ	<u> </u>								_				<del></del>	<del> </del>
Pretim							<del>                                     </del>		<del>                                     </del>	+-		<del></del> -			
Final	.16	.65	.00	7	026	. 24		<del>72 -</del>	.12	+-	. 12	-	03	.010	<del></del>
Element	AI	V	Nb	+	77	Zr	В	т	Ca	ᆛ_	70	<del>- L</del>			<u> </u>
Final	.006	.002	.00		001	.000	.00	- 1	.0002	1	Zn <del>0168</del>	DI	_	Journal Const.	110
·	GRADE		1018		<del></del>				. 5552	Т.	5100	1	Sa	mple Type:	555
<u></u>	75.75.7	7 :	-5							_					
1	Selit	ιο. W-) Ιε.Ο.	1351   F Fr	ا) الجند ( 1 )	10000	t Code	218	I							
i	A	5983	F 197	.00X	-512e 7.00	Leristi 169	n lic P	unt XX	. Tons . 54.1	St	ack.	<b>1</b> 5cr			
1	Įt.	G					:>	0		E. E.	1		0	0.0	
1	C fr	Ģ O				C		O					-	0.0	
Matta				<del></del>		<del></del>		0					Ö	6.6	<b>.</b>
Meller	LMF Operat	<del></del>	nan Lad	le No.	Gate No.	Huals o. I	Ladle	Heet	s on Plug		Da.	te	Shi	ft Heat	Numbe.
7//	<u> 567</u>	32	318	7		37			1	5	-/7	-00	71	7 7.1	1721
Doc	ument No: MS	013				Revision Da	c: D4-85	-1999	<u>~</u>		10	20	<u> </u>	(1W-)	1901
Remarks	5.7	A-B	-C	1/n	AF.		<del></del>	<del></del> -				<del></del>	Revi	tion Level: F	<del></del>
1 '	$\sim e^{\Lambda}$	1. 100		<u> </u>	_1										

	20202							··· /			<u> </u>	110	1116	uı	16	al S	neet
	AF Meltii	ng Log	(time	?)		L	MF Trea	tmen	t Los	(time)		Po	wer &	Sup	ply	Consu	mption
	Start	Sto	Р	Scrap V	٧١.		Car Nur	nber		2	╗				_	Amount	
£asi Tap	-	0150				1.ast	Heat - Tre	stment S	top	0325	$\vdash$				At F	urnace	At LMF
1st Chg.	01:33		18	834	00	Currer	it Heat - To	ealmen;	Sian	4-70-7	爿	Pow	or Motor		1-1	17/1	75C
2nd Chg	02:20	Ц		32,			Proparatio			032	+	Elect	lrode #1			140	4/12
3rd Chg.	ļ				_		nt Heat - Tr		£4	5825		Elec	lrode #2		-		
Tapping	03:00	0.3'	25		_	<b></b>			Stop	0424	_	Elect	lrode #3		<del> </del>	<del></del>	
Tap Temp.	3055	Tota			_		Total Tima				_}	Lanc	e Sectio	 ns	├	<del></del> }	
	Total Th	me of He	at;							/ Furnace		Roof	Delta		12		
LMF	adle Weight					Est	Return W	gl.	Adde	d Scrap Wgl		Walt	Heal		12	+	
Steel	Tare Weight	<del></del>	49,00	00.0		ļ						Thei	mocoup	<u></u>	1		
	Steel Weight	<del>-  -</del>				l		_ صه				Sam	plers		_		
						L X	5-7	$\mathcal{Y}^{TE}$	Z		_	Оху	gen Prob	es .	1		
					Addi	tions	To The	Furns	co a	nd Ladi							
<u> </u>	Flu	IVOS Ad	dod //				1				==						
Time	Fumaça		_	<del></del>		<del></del>	_{			Alloys Ad	ded	(lbs.	)			Wire A	Added (ft)
<del> </del>	/umace	Ladle	L.M.		LMF	LM		Time		Fumace	L	dle	LMF	1	WF	Sullur	7
Sieg Cond.		1,000						Carbon					80	19	0	Carbon	
CalAl	<del> </del> -			/				75% Fe	SI		2	571	100	5	<u>~</u>	Cal SI	1
Spar				0		ļ		SiMn			60	20		1		FeCb	
CalC	-/		6-	$\frac{C}{2}$	<u> </u>	ļ		HC FeM	n				3.50	7		Fø₿	+
Lime	4,0cx		300	21/	$\Omega$	<del> </del>		MC FeM	n					$\top$		Feli	<del>                                     </del>
DoloLime	<del>                                     </del>					<u> </u>	┛	FeCr						_		FeV	1
Cal Sil	<del>['</del> -	·				<u> </u>	^	foly Oxid	ie							Nilrover	,
CEISII	<u> </u>		<u> </u>					Copper								FeS	
							Argo	n Log									
Argon Flow	288900	. 41	T			Ţ.	7	7		T	_			Tay	-		
										<u> </u>	<u> </u>			Rin	se Fi	ow:	<u> </u>
Time	1.24/1	- 1	71	17 147	7 7 7	rem	peratur	es an	d Tin	1es						, ;	
<del></del>	(QQX/)	19610				4	1,5		, ** .//	;	1.			Fin	al N	(ppm):	
Temp. (*F)	2844	78 I	22	PG K	92G	'	• -									mp (°F).	<del></del>
Охудел (ррт)	1		<u> </u>													(ppm):	
					Ch	emist	ry and	3illet	nfor	mation						17-7-7-	
Practice:	110		Ro	II No:	-	300	/	Chei								•	
Element	C	Mn	7	P	<u> </u>	<u>≥7.7</u> S	Si			<del></del>	-				_	<del></del>	
Spec.	1/2	177	1		+		<del></del>	<del>-  </del> -	Cu	Ni		Cr	,	Мо		Sn <sup>ti</sup>	Al
Prelim	18	70		20	10	25	22		35	20	$\perp$	15	10	16	Γ,		
Prelim	1-/-	10	<del>-</del>	<u>5_</u>		55	0	12	0	12	-	9	19		C	7	
<del></del>	1-5-	42		<u> </u>	5	$\infty$	15				7	<b></b>	1		1-1		
Prelim	1/3	72	.   <	<u>}</u> _	13	5	19				1				┪-		
Prelim		'			1		4-/	_			+		- -		<del> </del>		
Prelim					1					<del>                                     </del>					<del>-</del>		
Prelim		1	<del>-</del>		+		<del></del>			<del></del>		——			<del> </del>		
Final	.18	+.76	,   -	:008	╁.	020	. 24		. 23	112	+	- 10		.03	<u> </u>	.010	
Element	. Al	T V	+-	Νb	<del> </del>	71								.05	L	.010	_
Final	.004	.003			<del> </del>	TĪ _	2,r	_1_	3	Ca	Π	Zn	DI		Grade	Code:	10
111111	GRADE	1 .003		.000 18 SQ	Ŀ	000	.000	.00	200	.0018	1	0011	6	_	ample		555
r				10 DQ											_		
!	Hear	t No.	X - 1	 994	~ -	·											
! !	Sr.];	it R	â.		110	1001 12 te	uct C	ode :	5 î.H								
i	A	55	81	5	.00	X7.0	o Se fe	170	Co	unt To	li S	Sta	ck 19	Scra	۱ ح	ons	
t .	Fr C		0			_		0		U~ J1,	. 1 . 0	NN-:	3		G	0.0	
! }			0					o		0 0.	0				o o	0.0	
Meller	LMF Opera	lor Ladia		Ladica	<u> </u>		<del></del>	<u> </u>	7	_					ሀ <u>ሰ</u> _	0.0	
9/17	367	770	7.4	- 4018 14	J. G	ala IVO.	nuels o	n ! · · ///	Heal	ls on Flug		Da	le	SI			Vumbei
1.1.		17	10	7			3.	5	=	3	5	-/3	2-01	111	기	X-1	
	ument No: MS	-013					Revision I	Date: 04-1	<del></del>		=	10	<u></u>	<u> </u>	41	avel: F	6/5
Remerks:								====		<del></del>					-11108 1	- vei; }	<del></del>

	EAF Me	ltina Lo	ot (time)				- / L		Col	mb	ine	d l	leat	t S	hee
	Star					AF Tre	atment L	og (tim	e)						mption
Lasi Tap			2/25	Scrap Wt.	<del> </del>	Car Nu			$\overline{7}$			<u> </u>			Used
1st Chg.	00:1		255	3300			elment Stop	02	24				At Furn		AI LMF
2nd Chg	رزام	19	4	2,			realment Star		26	Powe	Meter		2.14	2	5325
3rd Chg.	-					reparatio		50		ļ — —	ode #1				
Tapping Tap Temp	- 10/:5	502		]			eatment Stop	030	25	<b>—</b>	ode #2				
1-1-1-1-1-1		Time of I	olais:			otal Time				1	ode#3 Section		<u> </u>	_	
			Heat:		Reas	on for R	eturn to LIV			Roof (			2.10	-	
LMF	Ladle Welg				ESI. F	Return W(	gl. Add	ed Scrap	Wgl.	Wall F			3.0		
Steel	Tare Weigh		49,000	ø	<u> </u>					Them	ocouple	s	<u> x U</u>	-	
Weight	Steel Welg	ht			-17	60				Sampl	lers			┰┼	<del></del>
					172	$I^{l}K_{l}$				Охуде	n Probe	5		_	
		luvos A	dded (ibs	Addi	Hons To	The	Furnace'a	ind La	dle						
Time	Furnace	Ladie	LMF		· ·			Alloys	Added	(lbs.)			W	ra A	dded (ft)
Stag Cond.		<del>-}-,</del>		LMF	LMF	<b>!</b>	Time	Fumec			LMF	LAI		lfur Ifur	100a (tt)
Cal Al	<del> </del>	4000	<del>4</del> -	<del> </del> -	<del> </del> -		Carbon			<del>-   ,</del>	40	-		bon	
Spar		<del>                                     </del>	17-	┼	<del> </del> -		5% FeSI		25		7.0		Cal		
Cal C		† — —	4-e	<del> </del> -	<del> </del>	ļ	SIMn		60				Fe		
Lime	4000	<u> </u>	301	<del> </del>	<u> </u>		C FeMn	<del> </del>			500		Fe		
DotoLime	700			ļ		ł- —	C FeMn FeCr						Fe	Ti	-
- Ni	1					•	ly Oxide	<del>}</del>					Fe	v	
Cal Sil	<u> </u>	<u></u>					opper	<del> </del>	╁				Nitro	van	
						Argon	Log	<u> </u>					Fe	s	
Argon Flow	2 a Kina	*-("40"			<del></del>			,						:	
					Tomas	21007		<u></u>				Rinse	Flow; .		==
z Time	0234	024	6502	722	· · · · · ·	ettures	and Tim	es							
Temp. ("F)	12800	2853	2890	2020		•			*,			Final	N <sub>2</sub> (ppm	 ):	
Oxygen (ppm)		<u> </u>	1	-/2/		<del></del> -	<del> </del> ;		<del> </del>				Temp (*		
				Che	mietru	and Di	llet Inforn		<u> </u>			Final	0 <sub>2</sub> (ppm	):	
Practice:	110		Roll N	۸.									1		
Element	C	Mn	P	<u> </u>	44		Chemistry	': 							
Spec.	16	20	+		<u>'                                    </u>	Si	Cu	Ni		cr	Мо		Sn¥	T-	Al
Prelim	10		020			22	35	20	1/5	5	06	-+-		┼╾	<del>-"</del>
Prelim	10	47	1-9	_ 2.			22	70	9	-	2		20.	┼─	
Prelim	1	<del> /</del>	<del>                                     </del>	30		24/	]		1			-4	0	╂	
Prelim	<del>                                     </del>	68	<del></del>			2.5			1					├	
Prelim	<del> </del>	<del> </del> -	<del>- </del>			]								├	
Prelim	<del></del>		<del> </del>						1			- -		<del> </del>	
Final	.17	.72	.008	.010					<del> </del>					<del> </del>	
Element	AI	- , , <u>z</u>	<del> </del>			25	. 22	10-	<del>  -:</del>	11-	02	-	-012		
Final	.005	.003	Nυ	77		Zr	8	Св	Zn	<del></del>	ĎΙ	┍┷		1 110	
	GRADE	.003	.001 1018 S		0. (	01	.0000	.0014	.001	t <del>ul -</del>			e Code:		55
				·	<b>-</b>								1770.		
	Heat N S⊬lit	łο. ω	1360	Pro	duct (	ode	21H								·
	A A	8.0. 5981	a Bij ∗e	11et 5	ine L	មកនាដក	Count	Toris	Stac	·k 1	Sere	. To	1		į
	Б	Ú	ر.		υU	170	0.1	.,0,5	N W ~ 3		رى ا		145. • 7		1
· <u>-                                     </u>	C D	0				o	**	0.0				0 (	· ċ		1
Meller LI	MF Operato		nan Ladie	No. Gara	No III-	0	. 0	Λ Λ	<u></u> -		) 2	) <u> </u>	. Ü		1 1
177	767	45		- 3018	THE	s on La	die Heats d	n Plug	D	ale		hitt	Heat	Vum	hes
Docum	ent No: MS-01	" 1 / へ。	N. 1 %			<u> </u>	1/9		5-1	2-/	0011		<u> </u>		
marks:		<u> </u>			Revi	sion Date:	04-19-1999		- <u></u>		<u>~ ₩ /</u>		evel: F	<u>م د</u>	<u>~_</u>
_		·											<del>-</del>	==_	
		•													1

	EARAGE O		1001, 1110.				47 / L			mt	ome	H E	eat S	heet
	EAF Melt	ing Log	(time)			.MF Trea	alment Lo	og (time)		E	ower &	Suppl	v Consi	Imption
Lest Tr	Start	Sta		WI.		Car Nur	mber	7 2	=					I Used
1si Ch	<del>-</del>	- 22 <b>.</b>	5 77		Las	Heal - Tro	atment Stop	013	2 /			}_	I Furnace	ALLME
2nd Ch		5 00:0	25 7.2	200	Curre	nt Heat - T	ealmen! Star			Po	ver Meler		9910	2075
3rd Ch	- 2010	<del>2 </del>	-24			Preparatio	n Time	6/0	-	Ele	ctrode #1		11101	<u> </u>
Tappin	9 00.53	5011	00		Curre	nt Heat - Tr	ealment Stop	722		Ele	Clrode #2			
Tap Tem		5 Tota				Total Time		1/44	7	Ele	clrode #3		7	
	Total T	ime of He		$\dashv_{f}$	Re	son for A	eturn to LN	Ne de la	닠	Lan	ce Sections			
LMF	Ladie Weigh				Est	. Return W		od Scrap W		1	of Delta		2 U	
Steel	Tare Weight								<del>"</del>	_	ll Heat		20	
Weight			49,000#	1 1					╼╼┦		rimocouples			
	Steel Weight	<u>'</u>	<u> </u>	]	25	-4678	,(	·—.			gen Probes			
		•		Addit	ions	10 700	Furnace :			[O.,	Acu Liónes			
	Fli	uxes Add	dod (lbe)		0113	TO THE	rumace a							
Time		Ladie	LMF L	1115			·	Alloys A	dded	(Ibs	.)		Wire	Added (ft)
Slag Cor		<del> </del> -	LM	LMF	LMF		Time	Furnace	Le	die	LMF	LMF	Sulfur	7
Cal Ai	<del></del>	1,000				_	Carbon				140	60	Carbon	+
Spar			1-2				5% FeSI	ļ. <u>.</u>	1/4	1	100		Cal Si	<del> </del>
Cal C			U-C		<del></del>	<b></b>	SiMn	-	13	00			FeCb	
Llma	4,000		360				IC FeMn	<del> </del> -	<u> </u>		350		FeB	
DoloLim						- <u> </u>	IC FeMs FeCr	<del> </del>	<del> </del>				FeTi	
NI	. 1		-				oly Oxide	<del> </del>	-				Fe∨	
Cat SII						<del></del>	Copper	<del> </del>					Nitrovan	
									<u></u>				FeS	<u></u>
Argon Flo	ow Takyon	41				Argor	Log						:	
				i	·		<u> 1 :</u>	<u></u>				Rinse F	low: -	٠.
Time	- La 10 11				Temp	erature	s and Tin	nes						
Temp. (*F	<u> (2)/5/</u>		0207			3.7	***	· ·	1			Final M	<sub>2</sub> (ppm):	===
Oxygen (pp		2536	2914	1		e		1					<u>г (РРШ):</u> emp (°F);	
y gan ipp	3411/					<u>_</u>		,					₂ (ppm):	
				Che	mistr	y and B	illet Infor	malion			1		2 (pp.n.j.	
Practice	£ 9.30	ַ <u>`</u>	Roll No:	0	111		Chemisti						;	
Elemer	nt C	Mn	P	S	77	Si	<del>,</del>		<del></del>		<del>-,</del>			
Spec.	23	110	200	<del> </del> -			Cu	Ni	<u> </u>	Cr	Mo		Sn <sup>ll</sup>	Al
Prelim.	<del></del>	7	035	03		22	40	20		30	04	ź -		
Prelim		29	19	5	7 -	1/2	21_	8		7	2		7	
Prelim	-   //-	1/4	<del>                                     </del>	52	-	19	<u>-</u>	<u> </u>						<del></del>
Prelim	1/6_	11.7	<del>  //</del>	25		<u>23</u>	<u> </u>		1				<del></del>	
Prelim		<del></del>	<del> </del>				<u> </u>		7					<del></del>
Prelim				<b> </b>					1		<del></del> -			<del></del> -
Final	. 23	1.12	.011	1					+		+			
Element			<del></del>	.020		. 24	.22	<del>-:06</del> -	1	.09	02		010	<del></del>
		V	Nb	Ti	1	2r	В	Ca	Z	,	DI	<del>,                                    </del>	1930	<del></del>
Final	GRADE	.005	.000 A529 GR 5	.000		.000	<del>.0000  </del> -	<del>.0013 -</del>		12		Grade	Code:	555
			י. מאר בענא	-			· <u>-</u>	<del></del>	L		L	Sample	Тура:	
												<b></b>	<b></b>	
	Heat N Srlit					Code	-21H h-Coun <b>t</b>	Tarr	C 4	e. I.	46.000	. 1) a.u.		
	A	5980	5.00	0X7.0	00	180	) 47	41.0	הז ה -אא	ск. 3	150138 ()			
	B C	0					<b>5</b> 0	0.0			(	0.	0	
Mous-		. 0				(	-	_ 12 س _ 12 س 0.0			0			
Meller	LMF Operato	r Ladiem	an Ladie No	. Gafe	No.		eille Heets	on Plua		<u> </u>	<del></del>			
<u> 117</u>	L367	32	3/0	1			<del></del> -			Date		Shift	Heat No	ımber
	ocument No: MS-01	13		<del>'</del>		Revision Date			<u>5 -/</u>	2-	001	<i>l-2</i>	<u>λ-/2</u>	74
Remerks:	Set 1	3	elect	<del></del>								Herisian L	evel: F	
											_			

-	AF Meltir	in Lon-4	lmol .		AE T								
				===	AF Treatn		og (lime)		Powe	r & S	upply	Const	mption
last Tax	Start	Stop	Scrap V	vı	Car Numbe	ır						Amoun	l Used
Last Tap	224.6	132:12	()		toat - Treatm	ent Stop	001	9			Al	Furnace	AI LMF
1st Chg. 2nd Chg.	22:19		0 78,00	Current	Heat - Treat	ment Sta	1 002	T	Power N		_ 2	2820	2025
3rd Chg.	23:05	<del></del>	32,00		reparation T	kne	5/30		Electrod				
Tapping	24100	1010	<del></del>	Current	Heal - Treat	ment Sto		$\overline{}$	Electrod		_		
Tap Temp.	29:00		<del>-</del>		otal Time of	Heat	1015	4	Electrod				
Tap Tarrip.	70101 7	Totals:					7	<u>_</u>	Lance S		_ _		
	7 Dtai 11	nie or Hear	l:		on for Reti Return Wat.		ded Scrap W		Roof De			<u> </u>	
LMF	adie Weight			<del></del>	round trgt.	<del> -^</del> ~	oen actab es	91	Wati He		_ _	19_	
Steel	are Weight		49,000 #						Themo				
Weight	Steel Weight			77	$- \gamma \eta$	71-5	7		Sample			·	
	<del></del>				13 4	<u> </u>	<u> </u>		Oxygen	Propos	_1_		
				Additions	o The Fu	irnace	and Lac	lle				: * ;	
	: Flu	ixes Adde	ed (lbs)				Alloys A	ddec	i (lbs.)			Wire	Added (ft)
Time	Furnace	Ledie	LMF	LMF LMF	7	ime	Fumace	1	adia	LMF	LMF	Sulfui	<del></del>
Slag Cond.		1.000			C	arbon	4-12	,		70		Carbo	<del></del>
Cal Al		-			75	% FaSi	1-1-		0 1	· ~	•	Cal Si	<del></del>
Spar				<del>-  -</del>		ilMn	1		00			FeCb	+
Cal C					нс	FeMn		-1-21	2	50		FaB	<del></del>
Lime	4000				МС	FeMn	_	1-	<del></del>	7 ()		FeTi	<del>-</del>
DoloLime					F	eCr		1-				FeV	+
Ni	1				Mol	y Oxlde						Nitrova	<u></u>
Cal Sil	<u> </u>				C	opper		1				FeS	
					Argon	Lou							
Argon Flow	The Station	a t			1		<del></del>	<del>-</del>	=				
Argon riow	E C 16 77					<u>'L:-</u>					Rinse I	low:	
				Tem	eratures	and 1	imes						
Time	0030	C1155	<u> </u>		15			1			Final N	l <sub>2</sub> (ppni):	
Temp. (*F)	7776	1722	29/9		• ~						Final 1	emp (°F	):
Oxygen (ppm)		l			· ·						Final C	) <sub>2</sub> (ppm)	<del></del>
				Chemist	ry and Bi	llet Inf	ormation						
Practice:	930		Roll No:	044		Chemi			-	· _		<u>_</u> 1	
Element	C	Mn	T P	<u>099</u>	Si	Cu	<del></del>			<del></del>			<del></del>
<del></del>	+					77 .			Cr	M		Sn <sup>t</sup>	AI
Spec.	123	110	025	0.50	22	40	2	0	20	0	6		<u></u>
Prelim.	1/0	13	6	45		25	10		14	3	/	12.	
Prelim	13	84	<u> 8</u>	27	24	<u> </u>	_				7		
Prelim	121	105	12	122	27					T			
Prelim								+	<del></del>	1			<del> </del>
Prelim				1		<b>†</b>		$\dashv$		1			<del> </del>
Prelim	1	1		01.0	22		<del>_</del>	+	1.0	<del> </del>	<u></u>	011	<del> </del>
Final	- 21	1.02	010	018	.27	<del> </del>	3 .1	0	.16	<del>                                     </del>	03	.011	
Element	AI	l v	Nh	<u> </u>	7,	<u> </u>	<del>-  </del>	<u> </u>	7. 1	<u> </u>	<del></del>		930
Final		V05			<u>. 660</u>		0 .661	1	<del>7</del> 0012	DI	~   — —	de Code:	555
1.0181	I GRADE_	1	A529 GF	( IDU		L				<del></del>	Same	ple Type:	
r													<del></del>
	Heat No	o. W-13		froduct									
	SFlit	B.O. 4	l Bille	et Size						Scrap			
	A It	5980 0	5.00	0X7.00	180	5	7 49.8	ии-	-3	6			
	C	0			0		0 0.0 0 0.0			0	o.		
	<u> </u>				_ <u>_</u>		0_0_0		. <b></b>	<u>,                                    </u>	4.		
Meller				No. Gate No.	Heats on			ıg	Date				Numbe
917	367	47	0 8		<	7.	36	1			1/ 5	-	12/di
1	CUMENINO: M		<u>~ !- //-</u>	<del></del>	Revision Da	Y		<u> </u>	11	00	<u> </u>	1/1)-	<u> 1357</u>
Remarks:		=	<del></del>		U-C-A171(00 1)9	01-19-				<del>_</del>	Revisio	n Level: F	
1.38marks.					<u>.</u>								

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	Ky Elec		<u> </u>	Inc.		EA	AF/L	MF C	10	nb	ined	H	eat S	Shee
	EAF Melt	ing Log	(time)			LMF Trea	litient Lo	g (time)						umption
	Start	St		Scrap Wt.	] [	Car Nun		1 0						
Last Tap		- 21,			La	st Heat - Tree	lment Stop	232	ᆟ			-	Al Furnace	nt Used
1st Chg.	21:3	<u> </u>		8,000	Curr	ent Heat - Tro	alment Start	000	当	Powe	r Mater		17426	3373
2nd Chg. 3rd Chg.	22:/(	<u>/</u>	3	8000	<del></del> -	Preparation	<del></del>	1 / 5 5		1	rode #1		II_IEU	122/2
Tepping	71:2 (4	-			Cum	ent Hast - Tre		733	4	Elect	rode #2			<del></del>
Тар Тетр.		122						00/9		<del> </del>	rode #3		<del></del>	ļ <del></del>
Tep remp.	302					Total Time o		<u> </u>		-	Sections	<del>-  </del> -	·· <u> </u>	
	TOTAL I	lme of H	eat:			ason for Re				Roof	Delta		19	<del> </del> -
LMF	Ladie Weigt	nl I				st. Return Wg	l. Adde	d Scrap Wg		Wall	leat	_	19	<del> </del> -
Steel	Tare Weight	1	49,000	#	ļ					Their	nocouple	,		<del> </del>
Weight	Steel Weigh	u l			<u></u>	<del></del>	<del></del>			Samp	lers	_	···	<del></del>
					1 7	0-AS	TEX			Охуд	en Probe			<del> </del> -
				Ada	itions	To The F	urnace a	nd Lad						
	· · · FI	uxes Ad	ded (lb	s)										
Time	Furnace	Ladie	LMF	LMF	LN	45		Alloys Ad	ded	(lbs.)			Wire	Added (ft)
Slag Cond.	<del>                                     </del>	1020	<del> </del>				Time	Furnace	Le	die	LMF	LAV	Sulfu	· ·
Cal Al	<del></del>	1000	<del> </del>		+		Carbon	4-13			40		Carbo	<u>_                                    </u>
Spar		<u> </u>	1-1	<del>.  </del>		<del></del>	5% FeSI	ļ	29	0	100		Cal Si	,
Cal C	<del>- </del>	<del>                                     </del>	17-1	<del>'  </del>			SiMn		130	10			FeCb	
Lime	4000	<del> </del>	3-0	<u></u>		———	C FeMn	<del> </del>	<u> </u>		200		FeB	_
Dolot.lme	1000	<u> </u>	300	<del>- </del> -	+	— <del> </del> — —	C FeMn	ļ	<u> </u>				FeTi	<del>                                     </del>
Ni	1		<del>                                     </del>		+	<b></b>	FeCr	<del> </del> -	↓				FeV	4-1
Cal St			<del> </del>		<del></del> -		by Oxide	<del> </del>	<u> </u>	_			Nitrova	<del></del> -
				_ <u></u>			Copper	<u> </u>	<u> </u>				FeS	
Ames Stew						Argon	Log		٠.					
Argon Flow	The process	-, -t-,	<u>L</u>	<u>. L</u> _	<u> </u>			1	Τ			Rinse	Flow:	<del></del>
	e 14 41 m				Tem	peratures	and lin	es "						
- Time	22/31	2240	73ch	£ 235°	Nati	se?	T			_				- 1
Тетр. (*F)	2819	3008	2005	178.0%	Day	2 -	<del></del>	├	٠,			_	N <sub>z</sub> (ppm):	
Oxygen (ppm	)	ļ	The state of	7014	400	<del>-  </del>	<del></del>	<del> </del>		-			Temp (*F)	
				C	i dissile				<u></u>			Final	O <sub>2</sub> (ppm):	
Practice:		_			1311115	ry and B	ilet infor	mation					!	
	<del>- 9</del>	08	Roll	No:	64'	4	Chemistr	y:						
Element	С	Mn	_  /	D	S	Si	Cu	Ni	T-	Cr	144	_ 1	0.0	
Spec.	16	100	) 2	υ >	<		<del> </del>	<del> </del>	+-		↓ Mo		Sn <sup>u</sup>	AI
Prelim,	i	2	4		<u>-3</u>	22	35_	20		20_	06			
Prelim	8	82				-	22	_2_	<u> </u>	<u> </u>	6-	2		
Prelim	1/3	$\overline{}$		——— <u> </u>	\\ \langle \( \frac{\lambda}{\lambda} \)	14	ļ	<u> </u>				- 1		<del></del>
Prelim	<del>                                     </del>	99	$+\Sigma$		2_	25			┨.					
Prelim	<del></del>	┼				<b> </b>						_		
Prelim	<del>-</del>	<del> </del>		_							<del>                                     </del>			
Final							T		$\dagger$		<del> </del>	-		
	.16	1.02	0	09 .0	021	. 26	. 23	.09	+-	.10	٦.	<del>)2  </del> -	011	
Element	Al	V	Ň	υ	Ti	Zr	В	Ca	<u> </u>	n I	1			
Final	+.004	048	.0	00 .0	000	.000	.0000	.0017		" 7016	DI			08
	GRADE		A572	-GR/50		<u> </u>		.0017	L	7010		Same	ole Type:	555
			~ <del>`</del>											
	Selit	No. x-	-1273	<b>F</b> *1	roduc	t Code	214							
	A	R.O. 5979	• 1	Billet	Size	Lengt 17:	ի Count	t Terre	64					/
	H	(,,,,	)	00X7	.00			52.6	NN-	acl; - ₹	#Scra	7 T	Olis S	
 <b> </b> _	C <b>_1</b>	0					0 (	0.0				0 (	0.0	
Melter	LMF Operal			dia di =		·	, - 1 0						0.0 ).0	
9/2	77.1	<del> </del>	╌┼	DIB NO. G	ele No.	Heals on L	adle Heats	on Plug		Date		•	Hear n	
712	367	196	1	7_		341		2					- Carn	umber
	umeni No: MS					Revision Date			<u> </u>	11-20	20 3	<u>-17</u>	<u> 17-17</u>	73
Remarks:	Set 1	421	3-7	$CZ_{C,C}$	<u></u>	<u> </u>		<del></del>	==		<del>-</del>	Revision	Level F	
			<u> </u>	<u> </u>	4	_								

### ined Heat Sheet د EAF / LMF Con

	A C AA-CO											4 1 10	al J	meet
	AF Meltii	ng Log	liwe) -	e Kanana	LIME	reatm	ent Log	(time)-X	÷*	Po	wer &	Suppl	v Cohsi	Implion
	Start	Stop	Scra	p Wt.		1edmuN 1		7	=				Amoun	
Last Tep		1/8:3	5 =		asi Heat	- Treelme	ni Sino	051 (4.6	4			-		
1st Chg.	20:30	777	3 7.2.					22:16	_	Da			t Furnace	ALME
2nd Chg.	5/15	-	38			t - Treatm		23:19	2		r Moler	d	1490	5/30
3rd Chg.		1		<del> </del>		ration Tin		6124	- [		rode #1			<u> </u>
Tapping	21:05	2210	<u> </u>	Cu	rrent i loa	l - Trealm	ent Stop	23/9		!	rode #2	<del>-</del>		
Tap Temp.	3020				Total	Time of He	al		7		rode #3			
		ne of Hea	at:		eason f	or Retur	n to I ME	/ Furnace	=		Sections	<u>-</u>		
1.00=					Est. Rotu			Scrap Wol.	=	Roof			18	
LMF	Ladie Weight			_      _					╢	Wall			18	
Steel	Tare Weight	{	49,000#	1 1			ــــــــــــــــــــــــــــــــــــــ		-1	1	nocouples	· 	<u>·</u>	
_ Weight	Steel Weight			7 —						Samp		_		
				<u> </u>					_]	Охуд	an Proba	<u> </u>		
				Addition	s To T	he Fur	nace a	nd Ladie			4 -4			
	Flu	ixes Add	led (lbs)							<i>(</i> 1)				
Time	Furnace	Ladie	LMF	LMF	LMF .			Alloys Add		<del></del>		T	Wire .	Added (ft)
Slag Cond.	1		<del></del>			Tin		Fumace	Le	dle	LMF	LMF	Sulfur	
Cal Al	<del> </del>	1000	<b></b>			Cart		4-13					Carboi	,
			.,,	_		75%			20				Cal Si	
Spar			7-11			SIN			120				FeCb	
Cal C	/, ->		4-2			HC F	eMn						FeB	
Lime	4000	,	300			MC F	eMn						FeTi	·
DoloLime						Fac	Cr Cr						FeV	4-11
Ni .	1					Moly (	Oxida						Nitrova	n ,
Cal Sil		,	<u>L</u>			Сор	per						FeS	<del>                                     </del>
					Α	rgon L	0.01							
Argon Flow	. एक्ट्रिक्ट	ar'.						T	==					
,			<u></u>				<u> </u>	<u> </u>				Rinse	Flow:	
				Te	mpera	tures a	nd Tim	les					i	
Time	21.51	38:29	77.47	2251 12	3/4/	25			<i>i</i> ,	$\overline{}$		Final I	V₂ (ppm):	
Temp. (°F)	2929	98:12		292429	1/40			·				<del></del>	Temp (°F)	
Oxygen (µpm				<del>~ /* /*/</del> /	/-		· · · · ·							
			<u> </u>	Chow				<u> </u>		1		FINAL	O <sub>z</sub> (ppm):	
					suy a	nd Bille	et intor	mation						
Practice:	. 4	108	Roll No	): 	44	Cł	nemistr	у:				-		
Element	С	Mn	P	S	1	Si	Cu	Ni	T	Cr			0.1	
Spec.	21	44/ 8	<del>-  </del> -	<del>-  </del>	<del></del> -			<del></del>	+-		M	7	Sn <sup>®</sup>	AI
Prelim	125	100	1-24			2-	<u> 35 </u>	20		20	0			
<u> </u>	128	2/	1-7	40	2		<u> 20</u>	8	1	16	U	2		
Prelim	<del> </del>	<u>.</u>							1					
Prelim								1	1.					
Prelim								┼─	+		<del>  -</del>			
Prelim	1		1		+		— <del></del> -	<del> </del> -	+		<del></del>			
Prelim	<del> </del>	<del> </del>	+	_{				<del> </del>	4_			_		
Final	.18	. 98	:01	.009		28	. 20	10.	1_	19	1	02	009	
<u></u>	<u></u>	<u>L</u>						<u></u>	丄			\		
Element	Al	V	Nb	Ti		Zr	В	Ca	Ι-	Zn	DI	T	de Code;	408
Final	+.004	+.051	.000		<del></del>	<del>)00  -</del>	<del>. 0000  </del>	<del>,0011</del> -	-	001	<del> </del> -		ple Type;	555
	GRADE		<del>- 'A572-</del> (	<del>11(750</del>		h			<u>'</u>		<u></u>		г.с тура. Т	
r											<b></b>			
:	Heat No	. W-13	358	Fraduc										<del>/</del> ·
	Selit	B-0.		let Size										
	A	5979	5.0	00X7.00		172			N – .	3	2			
	₽ C	0				0	0	0.0			Ċ			
1	т.	^		<del></del>		Δ	۸	0 0						
Melter	LMF Operat	or Ladie.	man Ladie	No. Gale N	Vo. Hea	its on La	dio Heel	ts on Plug		Da	 le	Shift	Heat	Numbe
912	3/35	45	9 =	2_	_ _	14	_ -	74-1	<u>_</u>		2000	3-7/	-	10.56
Do	umeni No: MS				9	ision Date:	04.19.1000	<u> </u>		- //-	1000	2	LW	1357
Remarks:	<del></del>	<del></del>		<del></del> -		- and Calic:	V4-19-1999					Revisio	on Level; F	
1				134										

# Appendix D

**Emission Testing Field Data** 



eare, by: ldup in that

THAVERSE POINT LOCATION FOR REC	TANGULAR DUCTS	FE
Plant: Entury Electric Starl	192" B	_B
Date:5 //0/00	1	•
Sampling Location: Boylouse enlet		
Duct Width, inches:	-> ' (34"	
Inside of Far Wall to Outside of Nipple: 1/92"	40	
Inside of Near Wall to Outside of Nipple (Nipple Langth): 3"	bislave	
Duct Length, inches: /39"		<b>.</b>
Equivalent Diameter = $2 \times L \times W / (L + W) = 1/35.4$		
Distance Downstream from Flow Disturbance (Distance B):		
192 inches / Equivalent Diameter = 14 dd		
Distance Upstream from Flow Disturbance (Distance A):		
Distance Upstream from Flow Disturbance (Distance A): 122  /(5) inches / Equivalent Diameter =dd	Schematic of	
Calculated By: 26/76	Sampling Location	

Traverse Point Number	Fraction of Length	Length (inches)	Product of Columns 2 & 3* (To nearest 1/87)	Nipple Length (inches)	Traverse Point Location (Sum of Col. 4 & 5)
1	6062	139"	8.6	3"	11-4
し	0.188	1	7.6.13	1	29.13
7	0,312		43.747		86.37
4	0.438		10.08		63,88
_ 5	0,562		78.12		81.11
6	0,689		95.63		9863
7	0,812		1/2.87		115.87
હ	0.938	V	130,38		133,38
		<del>                                     </del>		1	

### If No Ports, Calculate Distances From Stack Walls For Port Locations

Number of Ports	Fraction of Width	Width (inches)	Port Location Product of Col. 2 & 3* (To Nearest 1/8")
		-	

<sup>\*</sup> All points or ports should be an equal distance from each other (D) and 1/2 of that distance from the stack walls (D/2), where D = Width / # of points or ports

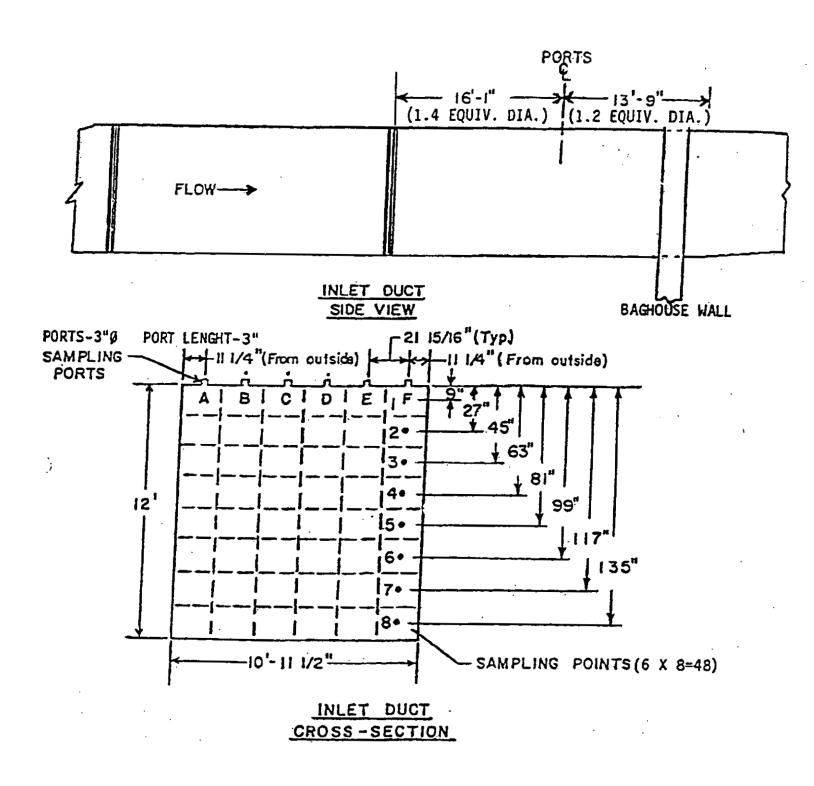


Figure 3-2. Inlet Velocity Measurement Location



### GAS VELOCITY AND VOLUMETRIC FLOW RATE

	and t	LLOOH I AN	ID AOCOMETIMO I FOAA IN VIC
Plant:	ENTICKE	I ELECTRU	STEEC Date: 5/10/00
Sampling Lo	ocation:	RACHOUS	E TNUET: Clock Time: 13.14
Run #:_ <i>P</i> @	ELIM		Operators: TG/RK/TW
Barometric	Pressure, in. I	Hg: 29.40	Static Pressure, in. H <sub>2</sub> 0: <u>+4.1</u> r wt., Dry: <u>28.94</u> Pitot Tube, Cp: <u>0-84</u>
Moisture, %	/	Molecula	r wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Stack Dimer	nsion, in. Dia	meter or Sid	e 1: /39 Side 2: /32
Wet Bulb, O	F:	Dry	Bulb, °F:
Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
Point Number	Head in. H_O	Temp.	$Md = (0.44 \times ) + (0.32 \times ) + (0.28 \times )$

Traverse Point	Velocity Head	Stack Temp.
Number	in. H <sub>2</sub> O	Temp.
1	1.1	219,1
2	1.1	214.2
3	1,6	215.3
4	1,8	2/7.9
2	1.9	2/4.9
6	1.9	195.6
7	2 /	168.6
<u></u>	2.1	144.2
1	1.3	150.0
_2	1.2	191.0
	7,5	211.3
4	1.7	2/7.3
5	/. (	<u>207.3</u>
6	1.9	192,5
.7	2.1	175.9
	2.1	160.1
	0.86	154.7
2	1.2.	A3. B
	1.6	206.7
4	1:0	194.2
5	1.7	172.2
<i>Q</i>	1.6	/62. Z
7 2.0	No. 20	14R.4
B	2.1	/3 /.7
L	=	- 1 1 2
	<u> </u>	To = 158
		1865

. 139	Side 2:	132	
o, o F:	Side 2:		
Md = (0.44 x %CX	O <sub>2</sub> ) + (0.32 x %O	<sub>2</sub> ) + (0.28 x %N <sub>2</sub> )	)
Md = (0.44 x	) + (0.32 x	) + (0.28 x	)
Md <del>=</del>			
% Ma = Md x (1 - —	1420 100 ) + 18 ( <del>%</del>	100 H <sup>5</sup> 0	
Ma = ( ) >	(1 - 100 ) +	18 ()	
Ma =			
<del>Te</del> =	F.= °	R ( <sup>o</sup> F + 460)	
$Ps = Pb + \frac{S.P.}{13.6}$	= ( · ) + -	13.6	
P8 =	In. Hg		
<u>√∆P</u> =			
Vs = 85.49 x Cp x	$ \sqrt{\overline{\Delta P}} \times \sqrt{\frac{T_0}{P_0}} $	•	
Va = 85.49 x (	<b>)</b> ×( ·	) × √	
Ve =	ft/s		
As =	ñ <sup>2</sup>		<b>Ģ</b> .
Qs = Va x As x 60	s/m		
Qs =	<b>x</b> .	x 60	·
Qe =	acfm		
Qs <sub>std</sub> = Qs x 17.6	47 x Ps x (1 -	% H <sub>2</sub> O 100	

decfm

- x (1 - 100



E

GAS VELOCITY AND VOLUMETRIO PLOW TATE				
Plant: KENT) CKIN ELECTRIC STEEL Date: 5/10/00 Sampling Location: BAGHOUSE INCET Clock Time: 12:/J				
Sampling Lo	ocation: 120	12 HallSE	INCET Clock Time: 12:/5	
Dun# 1/	761 cm		Operators: (KK / 76 / 76	
Barometric	Pressure, in.	Hg:	Static Pressure, in. H <sub>2</sub> O: +4. H	
Moisture, %	· ·	Molecular	wt., Dry: Pitot Tube, Cp:	
			e 1: Side 2:	
			Bulb, <sup>o</sup> F:	
			100 100 100 100 100 100 100 100 100 100	
Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$	
Point Number	Head in. H <sub>2</sub> O	Temp.	$Md = (0.44 \times) + (0.32 \times) + (0.28 \times)$	
144111001	1 . 1		Md = 28004	
1	1.	127.3		
2	1.6	/4 . 7	$Ma = Md \times (1 - \frac{\% H_2O}{100}) + 18 \left( \frac{\% H_2O}{100} \right)$	
1	1.5	159.5	Ma = ( ) $\times (1 - \frac{100}{100}) + 18(\frac{100}{100})$	
1-4-	1,4	15519		
<del></del>	1.0	1491.3	Ma = 29.73	
7	7.6	1401	To = (50 °F = (18 °F + 460)	
<del>  2</del> -	1	136.1		
<u> </u>	<del>  \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \</del>	130.2	$P_8 = P_b + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{13.6}$	
<u> </u>	<del>                                     </del>	1/8.3	Pa = 29,81 in Hg	
	1:10	1550		
2	1.6	126. 7		
4	1/-	127,0	$V_8 = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{\frac{Ts (^0R)}{Ps \times Ms}}$	
<del>-</del>	1 / 0	<del>                                     </del>		
6	<del>                                     </del>	127.8	Vs = 85.49 x ( ) x ( ) x 1	
19	1	128.0	A /	
8	2 2	12 / 15	Va = $Q_{O_{\epsilon}}$ ( $\ell \ell$ t/a	
		127.0	As = tt <sup>2</sup>	
	1, 0	11 = 1		
	<del>  /, 7</del>	110.4	Qa = Va x As x 60 s/m	
2	1.6	118 0	Qa= x . x60	
4	<del>  1.4</del>	110.7	//2021	
4 S	10	119.	$Q_8 = 6/282/\text{ actm}$	
6	7.0	1,00	$Q_{a_{std}} = Q_{a \times 17.647 \times \frac{P_{0}}{T_{0}} \times (1 - \frac{\% H_{2}O}{100})$	
7	2.0	119.7	19 100	
1024	<b>₽</b> - 1,3140	1 2 2	x 17.647 x	
1,34724		711= 170 22	<b>1</b> 🚫	
A	sp = 1.74	<b>?</b> 7	Qa <sub>std</sub> = 51 (6355dectm	

Qastd= 516355decfm



Plant: Kentucky Electric STEE Sampling Location: USAGHOUSE TALET	Date: <u>S//8/00</u>
Sampling Location: USAGHOUSE THLET	Clock Time: /, -: /, T
Run #: / lim = 2/3 Fams*	Operators: KK/TG/772) '
Barometric Pressure, in. Hg: 29-46  Moisture, %: Molecular wt., Dry:	Static Pressure, in. H <sub>2</sub> O: +2.3
Moisture, %:/ Molecular wt., Dry:	28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1:/3	
Wet Bulb, <sup>O</sup> F: Dry Bulb, <sup>O</sup> F:	

	Traverse Point	Velocity Head	Stack Temp.
	Number	in. H <sub>2</sub> O	o <sub>F</sub>
A	1	0.52	H5.9
,	2	0.42	157.2
	3	0.48	170.3
	4	0.70	178.8
	8	0.84	182.3
	6	0.72	183.5
	7	0.65	176.7
0	8	0.64	169.7
B	· <u> </u>	0,52	152.3
	2	0.49	15708
	3	0.50	161.10
	4	.0.70	169.60
		0.00	175.5
	4	0.88	176.7
	7. 6	0.77	125 1
	_ <u> </u>		Ho2.7
$C_{\cdot}$	1.	0.65	148 2
	2	0.59	102.3
	7	0.82	160.3
	<u> </u>		65.8
	6	0.92	171.3
	7	0.98	1711
	8 .	0.85	171.4
	0	0.16	166.3
l		<u></u>	Ta =
	Į	10r =	18 =

de 1:_	· 139 "	Side	<b>2</b> : / 32 "	
_	,°F:			
]	Md = (0.44 x %C	O <sub>2</sub> ) + (0.32 x 1	%O <sub>2</sub> ) + (0.28 x %N <sub>2</sub>	į)
	Md = (0.44 x .	) + (0.32 x	) + (0.28 x	)
	Md <del>=</del>			
	Ma = Md x (1	6 H <sub>2</sub> O 100 ) + 18 (	% H <sub>2</sub> O 100	
]	Me = ( )	x (1 - 100	) + 18 (	
1	Me =			
}	To =	F =	<sup>o</sup> R ( <sup>o</sup> F + 460)	
	$Pa = Pb + \frac{S.P.}{13.6}$	= ( · ) ·	13.6	
1	Ps =	In. Hg		
-	<u>√∑</u> P =			
	Vs = 85.49 x Cp :	× √ <u>⊼</u> P × √	Ts ( <sup>O</sup> R) Ps x Ms	
1	Vs = 85.49 x (	)×(	)×√	
167	Ve =	ft/s	, <b>1</b>	ř
	As =	ft <sup>2</sup>		वृं <sub>-</sub>
]	Qs = Vs x As x 6	0 s/m		
] .	Qs =	<b>x</b> .	x 60	
4	Q8 =	acfm	•	
1	Qe <sub>std</sub> = Qs x 17.	847 x <del>  Ps  </del> x (	1 - \frac{\% H_2O}{100} \}	•
1	Qs <sub>std</sub> =	x 17.647 x =	x(1	100

decfm

× 900 Fan Shut down during flow moasurement



1

E

Plant: Kennick UELECTRIC STECK Date: 5/10/00
Sampling Location: 1346 HAUSE TAKET Clock Time: 15:1
Pun #: $(10.6110)$ $(1/2/2)$ Operators: $(1/7/2)$
Barometric Pressure, in. Hg: 29.46 Static Pressure, in. H <sub>2</sub> O: +2.3 Moisture, %: Molecular wt., Dry: 28.84 Pitot Tube, Cp: 0.84
Moisture, %: Molecular wt., Dry: 28,84 Pitot Tube, Cp: 0,84
Stack Dimension, in. Diameter or Side 1: /39" Side 2: /32"
Wet Bulb, <sup>O</sup> F: Dry Bulb, <sup>O</sup> F:

Traverse	Velocity	Stack
Point	Head	Temp.
Number	in. H <sub>2</sub> O	°F
<del>- ,</del>	0.70	140.6
Ż	6.62	141.9
- 2	0.61	1117 8
3	0.114	144.0
	0.72	146.3
-5-6	40	148.8
	0.98	149,6
6	0.85	149,1
·	0.49	139.6
2	0.50	141.5
	0 18	143.4
4	0.56	144.1
	0.66	145.0
4	0.78	145,4
7	0.85	145.2
$\mathcal{E}$	10.77	144,4
1	0.35	139.0
2	0.43	140.C
	0.44	142.7
4	12.46e	A5.4
S	0.54	148,8
<u></u>	065.	149.4
7	0.66	150.6
8	0.82	150.8
	JAP - 0.8112	156

JIb,	°F:			
	$Md = (0.44 \times \%CO_2)$	+ (0.52 x %O	<sub>2</sub> ) + (0.28 × %N <sub>2</sub> )	
	Md = (0.44 x . )	+ (0.32 x	) + (0.28 x	)
	M = 28.84	:		
	$Ms = Md \times (1 - \frac{\% H}{10})$	2 <sup>0</sup> ) + 18 ( <del>-</del>	H <sub>2</sub> O 100	
	Ms = ( ) x (	1 - 100 ) +	18 ()	
	Ma = 28.7	3		
	To = /500 °F	= 616°	R ( <sup>O</sup> F + 460)	
	$P_8 = P_0 + \frac{S.P.}{13.6} =$	( )+-	13.6	
	Ps = 29,63	In. Hg		
	10 - 1, 8 (1	2		
	Vs = 85.49 x Cp x 4	ΔP × V-F	rs (°R)	
	Va = 85.49 x (	)×(	) × √	
	Vo = 49.55	ft/s		
	As ≃	ñ²		÷
	Qs = Ve x As x 60 t	s/m		
	Qs =	<b>x</b> .	x 60	
	· -378,839	actm		
	Qs <sub>std</sub> = Qs x 17.64	7 x Pe x (1 ·	%H <sub>2</sub> O 100	•
6	Qs etd =	x 17.647 x —	x (1	100
'nΔ	Constd=31834	3 <sub>dectm</sub>		
				•



Å.

B

GAS VELOCITY AND VOLUMETRIC FLOW RATE 5/2/06				
Plant: $KES$ Date: $1730$ )				
Sampling Location: BAGHOOSE WET Clock Time:				
Run#:	500 HP	Fan Off	Operators: 66/16/700	
Barometric	Pressure, in.	Ha: 21.45	Static Pressure, in. H <sub>2</sub> O: +4./	
			vt., Dry: 28.64 Pitot Tube, Cp: 0.84	
			1: /39 Side 2: /32	
Wet Bulb, O	F:	Dry Bu	ılb,°F:	
	· · · · · · · · · · · · · · · · · · ·			
Traverse Point	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$	
Number	Head In. H <sub>2</sub> O	Temp.	$Md = (0.44 \times ) + (0.32 \times ) + (0.28 \times )$	
/	0.78	135.2	md = 28.84	
2	0.91	146.7	$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 \left(\frac{\% H_2O}{100}\right)$	
3	0.08	153.1	Ms = Md x (1 - 100 ) + 18 ( 100 )	
4	0.82	186.7	$Ma = ( ) \times (1 - \frac{100}{100}) + 18(\frac{100}{100})$	
S	0.95	159.7	-	
6	1.4	162. le	Ma =	
7	1.5	164.6	Te = °F = °R (°F + 460)	
8	1. Le	166.6	$P_8 = P_b + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{13.6}$	
	0.87	167.0		
2	0.86	168.5	Ps = in. Hg	
3	0.84	169.1	<u>₩</u> -	
4	003	169.9	$V_8 = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{\frac{Ts (^{\circ}R)}{Ps \times Ms}}$	
->	0.99	170.0	Vs = 85.49 X CP X V Ps X Ms	
4	15	170.4	No. 25 (5) (1)	
	1.6	1710	Vs = 85.49 x ( ) x ( ) x \	
<u>B</u>	1.4	(71.3	Ve = ft/s	
	0.98	166.7	As = 11 <sup>2</sup>	
2	0.94	169.2	<b>As =</b>	
13	0.88	109.9	Qs = Ve x As x:60 s/m	
4	0.99	1/0.3		
<del></del>	1.0	10.6	Qs = x . x 60	
1 2	1.10		Qa = actm	
	1.7.	111.3	$Q_{a_{atd}} = Q_{a} \times 17.647 \times \frac{P_{a}}{T_{a}} \times (1 - \frac{\% H_{2}O}{100})$	
8	1.6	170 171	Te 100	
	155 ·	<u></u>	Ge <sub>std</sub> = x 17.647 x	
·	<u> </u>	Te -	**std 100 **	

Os<sub>etd</sub>=

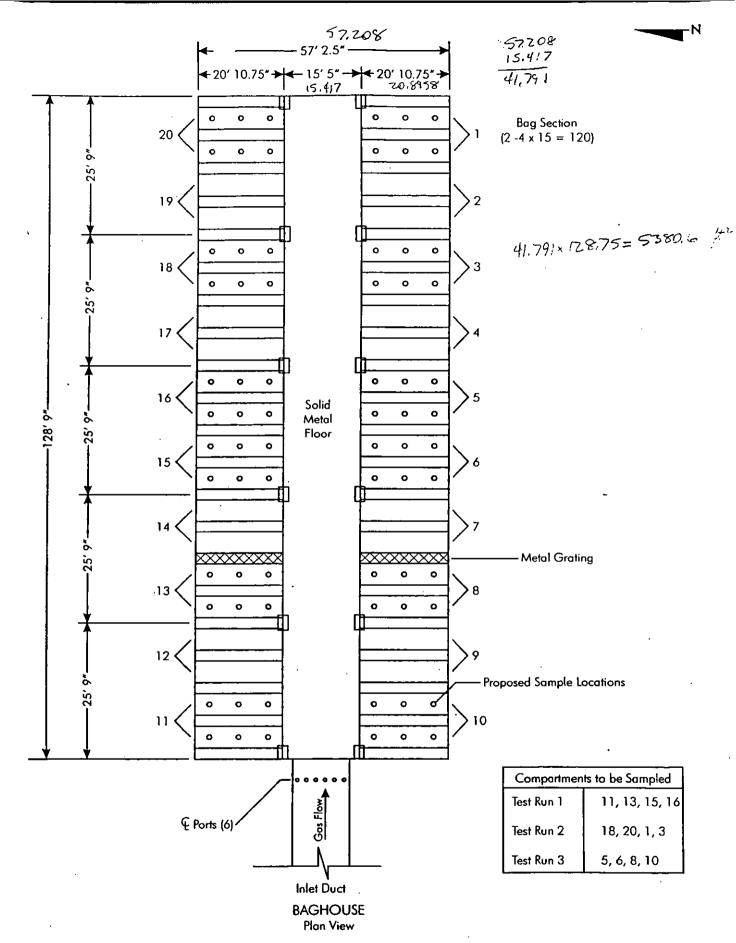
decfm



	GAS V	ELOCH Y ANI	D AOFOMETHIC LEGALINIE
Plant:	ES		Date: 5/12/00
Sampling Lo	cation: BA	CHOUSE	/NCET Clock Time: 17.30
D 4. S \	$\sim UD = \sim 1$	1 ~ ^ (	Operators: $(\pi(\sqrt{77})/(2))$
Barometric F	Pressure, in.	Ha:	Static Pressure, in. H <sub>2</sub> O: +4.
Moisture %:		Molecular	wt., Dry: Pitot Tube, Cp:
Stack Dimer	nsion, in. Dia	meter or Side	e 1: Side 2:
Wet Bulb, OF		Dry E	Bulb, °F:
	<del></del>		
Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
Point	Head In, H <sub>2</sub> O	Temp.	$Md = \{0.44 \times\} + (0.32 \times) + (0.28 \times)$
Number			Md =
	/. ()	17/7	•
2	1.0	172.6	$M_8 = M_0 \times (1 - \frac{\% H_2O}{100}) + 18(\frac{\% H_2O}{100})$
3	7.0	173.7	$M_8 = ($ ) $\times (1 - \frac{100}{100}) + 18(\frac{100}{100})$
4	7.75	1710	100 5 100
6	17	171 (-	Ms =
9	18	174.5	Te = °F = °R (°F + 460)
8	1,8	170.0	S.P. / \
. / .		175.8	$P_8 = P_b + \frac{S.P.}{13.6} = ( ) + {13.6}$
.   -	7.60	770.8	P∎= in.Hg
2	1.0	176.0	<u>Ā</u> ₽ -
4	1:5	176.0	1
5	105	176.2	$V_{e} = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{\frac{T_{e} (^{\circ}R)}{P_{e} \times Me}}$
6	1.8	176.2	
7	1.9	176.9	Ve = 85.49 × ( ) × ( ) × √ ————
B	1 B	177.2	Ve = ft/s
= 1	1	173.3	
2	0,90	172.8	As = 112
3	0.90	172.7	Q <sub>8</sub> = V <sub>8</sub> x A <sub>8</sub> x 60 s/m
4	1.4	173.7	CB = 48 X 70 X WIII
5	1.5	174.4	Qe x x 60
6	1. 60	178.1	Qs = acfm
7	/. (	184.5	<sub>Рв</sub> % ң о
B	1.4	1860.60	Os <sub>atd</sub> = Qs x 17.647 x T <sub>s</sub> x (1 - 100 )
			1,~
	NP = 1.1153	To - 170	x 17.647 x x (1 - 100

Csetd=

decim



Proposed KES, Inc. Outlet Sampling Points

Figure 3-3. Schematic of Baghouse Outlet

20 compatranti

TRA	VERSE PO	DINT LOCA	ATION FOR REC	CTANG	LAR DUCTS	<u> </u>
Duct Width, in Inside of Far I Inside of Near Duct Length, Equivalent Dia Distance Dow Distance Ups	wall to Outside Wall to Outside inches:  ameter = 2 x L instream from inches tream from Flo	of Nipple: de of Nipple (N x W / (L + W) Flow Disturbance / Equivalent C	lipple Length):  =dc  liameter =dc  liameter =dc	158,61	Schematic of Sampling Location	Sec.
Traverse	Fraction	Length	Product of	Nippie	Traverse Point	7
Point	of	(inches)	Columns 2 & 3*	Length	Location	<u> </u>
Number	Length	(,	(To nearest 1/87)	(inches)	(Sum of Col. 4 & 5)	A STORY COLD
-				<del> </del>		1 1600
						ا الم الم [
						- 53817

If No Ports, Calculate Distances From Stack Walls For Port Locations

Number of Ports	Fraction of Width	Width (inches)	Port Location Product of Col. 2 & 3* (To Nearest 1/8")

<sup>\*</sup> All points or ports should be an equal distance from each other (D) and 1/2 of "that distance from the stack walls (D/2), where D = Width / # of points or ports

NAME by Election Chief	TEST NO.
	RUN NO. 24
MODEL OR NAME	DATE OF TEST 5-12, 7000 9530
TEST PERFORMED BY	EQ/PES
DATA REQUIRED	RESULTS
T <sub>s</sub> , Stack temperature  P <sub>s</sub> , Stack pressure  T <sub>m</sub> . Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)	Vne, Volume of sample
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Isokinetic Ratio  gr/scf @ 12% CO <sub>2</sub>
ΔP, Velocity head <u>(19881)</u> in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. <u>0.84</u>	Lb/Hr Lb/mm BTU
min x 60	
0, Sampling time sec. An, area of nozzle D= $^{"}$ ft <sup>2</sup> D <sup>2</sup> x 0.005454	
Weight of collectedgm pollutant CO2, Waste only%	REQUESTED BY
A <sub>s</sub> , Area of stack $D = ft  D2  \pi   3 .50  ft$ $131.50  137.42$	RECOMMENDATION_
Boiler Heat Capacity mmBTU/Hr.	

was to take the state	NE VIEW
NAME LA Electric Stiel TEST	NO
SOURCE TYPE HOWELL FOR LOUIT REAL BOLLOW RUN	NO. 15T 213A
MODEL OR NAME DATE	OF TEST 5-12, 7000 1057
test performed by $\overline{\mathcal{EQ}}$	
DATA REQUIRED	RESULTS
T <sub>s</sub> , Stack temperature  P <sub>s</sub> , Stack pressure  T <sub>m</sub> . Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  VDGM, Volume of sample  (meter conditions)	V <sub>H20</sub> , Volume of water cf Bwo, Moisture of content (10 50000000000000000000000000000000000
CO <sub>2</sub>	Isokinetic Ratio gr/scf @ 12% CO <sub>2</sub>
I,3552  AP, Velocity head 1,85743 in.H <sub>2</sub> 0  (traverse points)  C <sub>p</sub> , Pitot tube coeff. 0.84	Lb/Hr Lb/mm BTU
min x 60  0, Sampling timesec.  An, area of nozzle D= ''ft <sup>2</sup>	
Weight of collectedgm pollutant CO2, Waste only%	REQUESTED BY
A <sub>S</sub> , Area of stack D= ft <u>D2</u> π 131.50 ft <sup>2</sup> 132 × 139 127.42	RECOMMENDATION_
Boiler Heat Capacity mmBTU/Hr.	<del></del>

NAME la Electric Still	TEST NO.
$\alpha = 0$	www. wo. 1.4
MODEL OR NAME	DATE OF TEST 5-11, 7000 0730
TEST PERFORMED BY	EQ/PES
DATA REQUIRED	RESULTS
T <sub>s</sub> , Stack temperature  P <sub>s</sub> , Stack pressure  T <sub>m</sub> , Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)	Vne, Volume of sample
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Isokinetic Ratio  gr/scf @ 12% CO <sub>2</sub>
ΔP, Velocity head 1.349.7 in. H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. 0.84	Lb/Hr Lb/mm BTU
min x 60  O, Sampling time sec.  A. area of nozzle D= "ft2"	
$A_D$ , area of nozzle D= "ft <sup>2</sup> D <sup>2</sup> x 0.005454	
Weight of collected gm pollutant CO <sub>2</sub> , Waste only%	REQUESTED BY
A <sub>S</sub> , Area of stack $D = \text{ ft } \frac{D2}{10! 15! \times 12!} \pi \qquad 131.50 \qquad \text{ft}$	DATERECOMMENDATION
127.42 Boiler Heat Capacity mmBTU/Hr.	

STACK TEST	
NAME les Electric Siel TEST	r NO.
NAME Ley Electric Stiel TEST SOURCE TYPE HOUSE RENDER LEGICIE RUN	NO. 13
	E OF TEST 5-11, 7000 07°5
TEST PERFORMED BY EG	
DATA REQUIRED	RESULTS
T <sub>S</sub> , Stack temperature  P <sub>S</sub> , Stack pressure  T <sub>m</sub> . Meter temperature  P <sub>m</sub> , Meter pressure  M <sub>w</sub> , Condensed water  V <sub>DGM</sub> , Volume of sample  (meter conditions)	VH20, Volume of water cf Bwo, Moisture of content 170 Marines Vne, Volume of sample at stack cond. cf Mdry, Molecular wt dry 75,84 Mwet, Molecular wt wet 28,73 Velocity 79,12 fps Qso 33,496 628 DSCF/w
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Isokinetic Ratio gr/scf @ 12% CO <sub>2</sub>
ΔP, Velocity head 1.33007 in.H <sub>2</sub> 0 (traverse points) C <sub>p</sub> , Pitot tube coeff. 0.84	Lb/mm BTU
min x 60  0, Sampling timesec. An, area of nozzle D= ''ft^2 D^2x 0.005454	
Weight of collectedgm pollutant CO2, Waste only%	REVIEWED BY
As, Area of stack  D= ft	RECOMMENDATION
Boiler Heat Capacity mmBTU/Hr.	

NAME Kentuky Ekstric Steel	TEST NO
SOURCE TYPE House ( Belling Prosence Combing)	RUN NO. P. I. SB
MODEL OR NAME	DATE OF TEST S-12-OF 15
TEST PERFORMED BY	egles
DATA REQUIRED	RESULTS
$T_{S}$ , Stack temperature $P_{S}$ , Stack pressure $T_{m}$ , Meter temperature $P_{m}$ , Meter pressure $M_{W}$ , Condensed water $V_{DGM}$ , Volume of sample (meter conditions)	Vne, Volume of sample
CO <sub>2</sub>	Isokinetic Ratio  gr/scf @ 12% CO <sub>2</sub>
ΔP, Velocity head \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Lb/mm BTU
min x 60  0, Sampling time sec.  A <sub>n</sub> , area of nozzle D= ft <sup>2</sup> $D^2x 0.005454$	
Weight of collectedgm pollutant CO2, Waste only%	REQUESTED BY
A <sub>s</sub> , Area of stack  D= ft $\frac{D2}{\sqrt[3]{11.50}}$ $\pi$   31.50 ft    32"x   139"   127.42	DATERECOMMENDATION
132'x 139" 127.47 Boiler Heat Capacity mmBTU/Hr.	



 $\mathcal{B}$ 

### GAS VELOCITY AND VOLUMETRIC FLOW RATE

	GAS (	VELOCIT AN	ND VOLUMETRIC FLOW RATE	
Plant: KEN	TUCKY EC	ECTRIC S	STEFC Date: $\frac{5/11/\infty}{}$	•
Sampling L	ocation: BAC	HOUSE IN	NCET Clock Time: 0730	
			Operators: (G/TG/Tu)	
Barometric	Pressure, in.	Hg: 29.60	Static Pressure, in. H <sub>2</sub> O: <u>+5./</u>	•
Moisture, %	6:	Molecular	r wt., Dry: ೩೮.૩५ Pitot Tube, Cp: 🕖 🖇	
Stack Dime	ension, in. Dia	ameter or Side	le 1: Side 2:	
Wet Bulb, <sup>o</sup>	°F:	Dry E	Bulb, OF:	
Tenuana	Velocity 1	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$	
Traverse Point	Head	Temp.		
Number	in. H <sub>2</sub> O	° <sub>F</sub>	Md = (0.44 x . ) + (0.32 x ) + (0.28 x )	
	1.4	153.0	ма = 28,004	
2	1.4	251.4	$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$	
3	1.0	259.1	]. 100	
4	1 / 9	261.4	Me = ( ) x (1 - 100 ) + 18 ( -100 )	
S	1.7.8	242.4	- Ma≂	
6	1. /. 4	12/5./	Ta = °F = °R (°F + 460)	
7	12/	1./83.0		
<u> </u>	2./	- /5/.5	Pa = Pb + S.P. = ( · ) +	
2	<del>  / / / -</del>	102	Ps = In. Hg	
3		205.5	<u>√∆</u> P -	
4	r	210.8	1	•
5	1.7	199.0	$V_{B} = 85.49 \times Cp \times \sqrt{\frac{Ts (^{\circ}R)}{Ps \times Ms}}$	
6	1.9	175.8	,	
7	1 2. 2	157.0	Vs = 85.49 x ( ) x ( ) x √	
8	2.1	134.0	Va = ft/s	12.5
	h /. (	138.5	+	82.
2	7 /- 5	156.1	As= tt <sup>2</sup>	
3	1:9	1/69.1	Qs = Vs x As x 60 s/m	
4	1.7	1715		. 173
5	2.0	172.8	Ga= x x €0	631116
6	1 2.1	142.7	Ce = actrn	631,123 610,40
/	1 2.2	1 /3/.7	P <sub>8</sub> %H <sub>2</sub> O	•
8	1 2. C	121.2	Ts 100	
<u></u>	- 10c	- 10:1	Qa <sub>std</sub> = x 17.647 x	
	IDP = 1.33	T= = /X/		

Os<sub>std</sub>=

decfm



E

### GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KENTIXK	MELECTRIC STEE	Date: 5/11/00
Sampling Location:	PRACHAISE INCET	Clock Time: <u>0720</u>
Run #: # 6	RUN IA	Operators: GG/79/700
• -	in. Hg:	Static Pressure, in. H2O: +5. (
Moisture, %:	Molecular wt., Dry:	Pitot Tube, Cp:
	Diameter or Side 1:	•
Wet Bulb. <sup>O</sup> F:	Dry Bulb. OF:	

Ay of= 1.8604

65. 2535  $Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$  $Md = (0.44 \times ...) + (0.32 \times ...)$  $) + (0.28 \times$ 28.84  $Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 \left(\frac{\% H_2O}{100}\right)$  $M_8 = ( ) \times (1 - \frac{100}{100}) + 18(\frac{100}{100})$   $M_8 = 28.7( 2k)$ °F = 402 °R (°F + 460) Ps = 29.87 In. Hg 1 = 1.359Y  $V_0 = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{}$ Vs = 85.49 x ( )×( va= 81.62 Qs = Va x Aa x 60 s/m  $Q_{a} = Q_{a} \times 17.647 \times \frac{p_{a}}{T_{a}} \times (1 - \frac{\% H_{2}O}{100})$ 

Castd=542784 decfm



for 1 gr

Plant: //www.by Electric Steel	Date: 5/11/00
Sampling Location: Bugherer inler	Clock Time: 1700
Run #:/B	Operators: <u>R4/T6/66</u>
Barometric Pressure, in. Hg: 29.60	Static Pressure, in. H <sub>2</sub> O: +
Moisture, %: Molecular wt., Dry:	28,89 Pitot Tube, Cp: 089
Stack Dimension, in. Diameter or Side 1:	
Wet Bulb, OF: Dry Bulb, OF:	

Traverse	Velocity	Stack
Point	Head	Temp.
Number	In. H <sub>2</sub> O	° <sub>F</sub>
4	7.41.1	146
<b>Z</b> ***	1.2	155
3	1,45	159
·Y 5	1.75	159
5	1.9	152
6	21	141
7 &	2.1	./3/
8	1.9	1.27
7	1.3 1.0 1.6 1.7	141
2	1.3 1.0 1.6	149
3	1.6e	135
1 2 3 4 5 6 7	1.7	156
5	1.8	147
4	1.9	140
7.	1.9	/47 /40 /30 /25
E	2.0	125
1	1.0	134
	1.1	143
3	1.6	149
4	/. 8 /. 8 /. 9	
5	1.8	139
6	1.9	132
2 3 4 5 6 7	/, 8 /, 9 2.2	125
' U	2.1	120
D	<u> </u>	, - <u>v</u>
-	<u> </u>	To = .

ID, 9 F:		_	
Md = (0.44 x %CC	) <sub>2</sub> ) + (0.32 x %	O <sub>2</sub> ) + (0.28×%	N <sub>2</sub> )
Md = (0.44 x .	) + (0.32 x	) + (0.28 x	)
Md <del>-</del>			
% Me ≃ Md x (1 - —	H <sub>2</sub> O 100 ) + 18 ( -	100 )	
Ms = ( ) x	(1 - 100 )	+ 18 (	)
Ma =			
Te = 0	F <u>.=</u>	°R (°F+460)	
$Pe = Pb + \frac{S.P.}{13.6}$	= ( ·)+	13.6	
Pa =	In. Hg		
<u>₩</u> =			
Vs = 85.49 x Cp x	$\sqrt{\overline{\Delta^p}} \times \sqrt{-}$	Ts (°R)	
Va = 85,49 x (	)×(*	)×√-	
Vs =	ft/s		
Aa =	ħ <sup>2</sup>		
Qa = Va x Aa x 60	) s/m		
Qa =	<b>x</b> .	x 60	` ,
Qa =	actm		
Qs <sub>atd</sub> ≂ Qs x 17.6	947 x <u>Pa</u> x (1	- <del>% H<sub>2</sub>0</del> )	
Qs etd =	x 17.647 x —	х	(1)

E

Plant:	Krutucky	Electric St	iel	Date: 5/1/00
Sampling I	Location: /3-	from dut	er	Clock Time: 0705
			Operator	s: RX/16/66
			Static Pre	essure, in. H <sub>2</sub> O: <u>+ 4.5</u>
				_ Pitot Tube, Cp: <u>&amp; 84</u> _
		neter or Side 1:		
	_	Dry Bulb		

Traverse	Velocity Head	Stack
Point Number	in. H <sub>2</sub> O	Temp.
	<del></del>	122
<u>/</u>	1.8	1210
1	1.8	126e
<del>/</del>	1.0	130
<u> </u>	1.7	120
<u> </u>	1.7	128
<del>-</del>	7. %	125
7	2.0	121
8	2.1	118
<u>i</u>	1,9	1/5_
2	1.7	1/4
3 4 5 7 8 1 2 3 4 4	1.5	117
4	1./8	1/8
5	1,9	118
<u>(</u>	1,9	1117
7 .		116
<del>0</del>	2.2	115
ĺ	118	113
6 b ( 2	1.5	114
3	1.60	114
4	1.6	1/4
ζ	2.7	114
<u>/</u>	20	1/2
3 4 5 4 7 8	2.2	1/3
<del>/</del>	Q.1	1/12
0	«·/	<del>  112</del>

1771	ડાવેલ	2. <u> </u>	
o,°F:		<del></del>	
Md = (0.44 x	%CO <sub>2</sub> ) + (0.32 x	%0 <sub>2</sub> ) + (0.28 x %N	۶)
Md = (0.44 x	) + (0.32 ×	) + (0.28 x	)
Md = 28	. <b></b> &4	•	
Ma ⊨ Md x (1	- % H <sub>2</sub> O 100 ) + 18	( <del>% H<sub>2</sub>O</del> )	
Ms = (	) x (1 - 100	-) + 18 ( <del>- 100</del> )	
Ma = 200	<del>.73</del> 28	171 RK	
Te =	°F =	°R (°F + 460)	
$Pa = Pb + \frac{c}{1}$	3.6 = ( · · )	13.6	
Po=24.7	18 In. Hg 4305		
Vs = 85,49 x	Cp× √ × √	Ts ( <sup>C</sup> R) Ps x Ms	
Va = 85.49 )	c( )×(	)×√_	
Vs = ->	9.339 No		
As =	ħ <sup>2</sup>		· •
Qa = Va x A	a x 60 s/m		
Qa =	x	x 60	•
Q0 = 60	6547 actm		
	x17.647 x Ps	× (1 - <sup>%</sup> H <sub>2</sub> O )	•



 $\triangle$ 

B

### GAS VELOCITY AND VOLUMETRIC FLOW RATE

Run #: <u>&amp;</u> Barometric f Moisture, %: Stack Dimer	Pressure, in.	Hg: 21.9 Molecular	Date: $\frac{5/2}{00}$ Clock Time: $\frac{0630}{00}$ Operators: $\frac{GG}{7G}/7U$ Static Pressure, in. $H_2O$ : $\frac{15.2}{10}$ Wt., Dry: $\frac{28.84}{00}$ Pitot Tube, Cp: $\frac{0.84}{00}$ Bulb, $OF$ : $\frac{139}{00}$
Traverse Point Number	Velocity Head In. H <sub>2</sub> O	Stack Temp. °F	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$ $Md = (0.44 \times ) + (0.32 \times ) + (0.28 \times )$
/	1.6	254.B	Md =
3	1. /	260.1	$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 \left( \frac{\% H_2O}{100} \right)$
4	1.9	258.6	Ms = ( ) x (1 - $\frac{100}{100}$ ) + 18 ( $\frac{100}{100}$ )
	2.0	246.5	- Ma ==
6	1.9.	227.8	Te = °F = °R (°F + 460)
8	2.1	205.7	,
. 1	11	185.7	$P_8 = P_b + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{13.6}$
2	1.1	927	Pa = In. Hg
3	1.6	204.7	<u>√</u> -
4	1.7	207.0	
_5	1.8	201.9	$V_8 = 65.49 \times Cp \times \sqrt{\frac{Ts (^2R)}{Ps \times Ms}}$
6	2.0	191.7	
7	J. 1	176.7	Vs = 85.49 x ( ) x ( ) × √
В	2.1	164,4	Vs = 1√s .
	1./.	156.8	Aa = 1t <sup>2</sup>
	1.2	178.3	As = tt <sup>2</sup>
-3	1 -7	198.5	Qa = Va x Aa x 60 s/m
4	1	186 1	Ca= x x 80
<del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> -	1/.0	1/6.7	1
<del>                                     </del>	1 / · 7	Mala Y	Qe = acfm
<u> </u>	2.0	1/5/1-2	P <sub>8</sub> %H <sub>2</sub> O

Ċ

< Qs<sub>etd</sub>=

x (1- 100

Caetd=

decim



E

## GAS VELOCITY AND VOLUMETRIC FLOW RATE

Plant: KES	Date 5/12/00
Sampling Location: BAGHOUSE, VALCET	Clock Time: 0630
Run #: 2A	Operators: Ga/Ta/Ta)
Barometric Pressure, in. Hg: 29.45  Moisture, %: Molecular wt., Dry:	Static Pressure, in. H <sub>2</sub> O: +5. Z
Moisture, %: Molecular wt., Dry:	28.84 Pitot Tube, Cp: 0.84
Stack Dimension, in. Diameter or Side 1:	and the second of the second o
Wet Bulb, <sup>o</sup> F: Dry Bulb, <sup>o</sup> F:_	

Os<sub>etd</sub>=

•		
Traverse	Velocity	Stack
Point Number	Head	Temp.
Number	In. H <sub>2</sub> O	
/	1. 9	150.6
2	1.8	160.0
3	1.6	1100.1
4	1.7	166.3
<u></u>	1.7	(60.0
6	1.8	148.9
7	2.1	143.3
8	2.1	137.7
	2.0	130.5
2	1.7	131.3
3	1,6	131.2
+	/ 5	131.4
S	2.0	131.2
Cp	2. /	130.9
7	2.3	129.3
8	2.2	127.6
	19	12,0
2	/5-	125.B
3	1.60	126.1
4	1.7	126.5
5	1.9	126.7
-1.	2.1	126.6
7	2.1	126.3
B	1.9	125,9
A.		<del>                                     </del>
No.	<u>₩</u> =	Te =

b, <sup>o</sup> F:	<del></del>		
Md = (0.44 x %0	O <sub>2</sub> ) + (0.32 x %O	1 <sub>2</sub> ) + (0.28 x %N <sub>2</sub>	<u>;</u> )
Md = (0.44 x .	) + (0.32 x	) + (0.28 x	)
Md = 28.84	•		
% Ms = Md x (1 +	H <sub>2</sub> O 100 ) + 18 ( <del></del>	H <sub>2</sub> O 100 )	
Ma = ( )	x (1 100 ) +	18 ( )	
Ma = /		-	
Ts = 0	F <sub>.</sub> =	R ( <sup>O</sup> F + 460)	
$Ps = Pb + \frac{S.P.}{13.6}$	= ( · ) + ·	13.6	
Po = 29.83	in. Hg		
√ <u>NP</u> = 1.3377	ـــ		
Ve = 85.49 x Cp :	x √∆P × √ F	rs (OR)	
Va = 85.49 x (	)×(	)×√	
Va =	ft/s		
As =	ft <sup>2</sup>	•	\$.
Qa = Va x Aa x 6	O s/m		
Qe =	<b>x</b> .	x 60	,
Qs =	actm		
Qs <sub>std</sub> ≃ Qs x 17.	647 x <del>  Ps  </del> x (1 -	· <del>% H<sub>2</sub>O</del> )	
Ce <sub>etd</sub> =	x 17.647 x	x(	1 - 100

decfm



Plant:	ES		Date: 5/12/00
		=3 PACH	LOUSE LACET Clock Time: 1050
	BI- 28	34	Operators: 74 / 66 / 720
Barometric F	Pressure, in. H	la: 29.45	Static Pressure, in. H <sub>2</sub> O:
Moisture, %:		Molecular	wt., Dry: 28,84 Pitot Tube, Cp: 0.84
Stack Dimer	nsion, in. Diar	neter or Side	1: 139" Side 2: 132"
			Bulb, °F:
Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
Point	Head	Temp.	•
Number	in. H <sub>2</sub> O	°F	$Md = (0.44 \times ) + (0.32 \times ) + (0.28 \times )$
(	1,0	47.4	Md =
2	1.2	147.9	$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 \left( \frac{\% H_2O}{100} \right)$
3	1.4	148.2	ms 4 md X (1 - 100 ) + 10 ( 100 )
4	1.7	H7.(0	Me = ( ) x (1 - 100 ) + 18 ( 100 )
	1,9	146.7	Ma ≅
6	2.0	145.7	
	2,1	143,4	Te = °F = °R (°F + 460)
8_	2.1	190,4	$P_8 = P_b + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{13.6}$
·	1,2	155.2	
. 2	1.1	159.3	Pe = in. Hg
3	1.	166.7	<u>~</u>
4	18	168./	Ts ( <sup>O</sup> R)
5	1.8	1105.2	$V_6 = 85.49 \times Cp \times \sqrt{\frac{Ts (^0R)}{Ps \times Ms}}$
6	1.5	7.50.2	· · · · · · · · · · · · · · · · · · ·
7	2.1	150.3	Vs = 85.49 x ( ) x ( ) x \(
<u> </u>	2.1	143.6	V= 1/0
	1.7	1426	
3	1.4.	161.4	As = R <sup>2</sup>
3	1.0	170.9	Qa = Va x Aa x 60 s/m
4	1.6	171.6	
5	1.7	165:5	— Qa= х, х60
6	7.0	157.0	Qs = scfm
Ž	2.2	7.00.5	р <sub>я</sub> % H <sub>4</sub> 0
8	+4723	147.3	Qe std = Qe x 17.647 x Ts x (1 - 2 )
			,
	JĀP =	Te =	Qs <sub>std</sub> = x 17.647 x



Plant: KES	Date: <u>5/12/00</u>
Sampling Location: BABHOUSE MICET	Clock Time: <u>/05</u> 0
Pun # (5T - 85/34) Oper	rators: 6.6 / 76 / 77 \
Barometric Pressure, in. Hg: 27.45 Station Moisture, %: Molecular wt., Dry: 28.	c Pressure, in. H50: +4.5
Moisture, %: Molecular wt., Dry: 28.	84_ Pitot Tube, Cp: <u> ይ 84</u>
Stack Dimension, in. Diameter or Side 1: /3	7 Side 2: /32
Wet Bulb, OF: Dry Bulb, OF:	
	0076

Traverse Point Number	Velocity Head In. H <sub>2</sub> O	Stack Temp.
1	2.0	147.0
2	17	/_2.7
3	1.7	153.7
4	1.60	153.7
5	1.8	K19.B
9	1.8	146.0
7	2.2	143.3
8	2.3	138.0
· /	1.8	134.2
2	1.9	13 5.0
3	1.5	135.1
4	1:6	135.7
1	1,7	136.9
9	3./	136.4
7	0 9	134.7
<u> </u>	23	/37. (
	1.6	130 2
3	1.5	130.2
3	1.0	/30.3
1	2.0	/30.7
}	23	130.5
<u>e</u>	124	138.4
1/	2.8	130.0
<u>e</u>	2.3	129.9
	<del> </del>	
	IF - 1.3556	1 To - 146e

	<u> </u>	- · <u> </u>	
b, <sup>o</sup> F:		_	
Md = (0.44 x 5	кСО <sub>2</sub> ) + (0.32 x %	60 <sub>3</sub> ) + (0.28 x %1	600.76
Md = (0.44 x)	. ) + (0.32 x	) + (0.28 x	) ô,
Md ≠			
Me = Md x (1	• <del>% H<sub>2</sub>O</del> ) + 18 (	% H <sub>2</sub> O )	1.66 55
Ma ≖ (	) x (1	) + 18 (	- a l
Ms =		-	6.8391
Ts =	°F =	°F + 460)	
Pa = Pb + S.	<del>P.</del> = ( · ) -		
Pa = 29,	In. Hg		0763
<u>√Δ</u> P -			0.000763
Va = 85.49 x	cp× √√P × √	Ta (°R)	
Ve = 85.49 x	)×(	)×√_	
va= 6(	92 1/10		· ·
Aa =	ñ <sup>2</sup>		ų.
Qs = Vs x As	x 60 s/m		
<b>Qs =</b>	<b>x</b> .	x 60	
co = (e2(	3 Lactro	w 11 0	
Qa <sub>std</sub> = Qa>	(17.647 x Ps Ts x	(1 - \frac{70 \text{700}}{100})	
Qs <sub>etd</sub> =	x 17.847 x	x	(1-100)
Costd= 52	7128 decfm		



	Plant:/			Date: 5//2/00
	Sampling L	ocation: Bo	HOUSE /	VET Clock Time: 16/9
•	Run #:	BZ-3B		Operators: GG/76/76) Static Pressure, in. H <sub>2</sub> O: + 4.6
	Barometric	Pressure, in.	Hg: 29.45	Static Pressure, in. Ho: + 4.6
	Moisture, %	÷	Molecular v	vt., Dry: 20.84 Pitot Tube, Cp: 0.84
	Stack Dime	nsion, in. Dia	ameter or Side	1: /39 Side 2: /32
	Wet Bulb, O	F:	Dry Bu	ılb,°F:
		<del>_</del>		
	Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
	Point Number	Head In. H <sub>2</sub> O	Temp.	Md = (0.44 x ) + (0.32 x ) + (0.28 x )
4	7	1.3	233.4	Md =
+	2	0.98	232.7	•
	3	1.0	232.6	$Ms = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$
	4	17.55	232.6	$Ma = ($ ) $\times (1 - \frac{100}{100}) + 18(\frac{100}{100})$
	<u>4</u> 5	1.5	228.7	100 100
	Q	1.8	217.0	Ma =
	フ	2,1	203.3	$\overline{\text{Te}} = {}^{\circ}\text{F} = {}^{\circ}\text{R} ({}^{\circ}\text{F} + 460)$
	စ	2.0	193,1	$Ps = Pb + \frac{S.P.}{13.6} = ( ) + \frac{13.6}{}$
B	. (	1././	214.5	13.6
	2	1. 1	219.9	Ps = in. Hg .
	3	1.6	224.3	<u>₩</u> -
- 1	4	1.6	223.0	— ↑ Te (°R)
	<u> </u>	1.7	211.0	$V_8 = 85.49 \times Cp \times \sqrt{\frac{Ts (^CR)}{Ps \times Ms}}$
	Q	(7	197.9	
		2.2	1859	Vs = 85.49 x ( ) x ( ) x √
	8	2.0	177.8	Vs = ft/s
	<del></del>	/ 3	219.8	
,	2	1.3	BS. &	As = ft <sup>2</sup>
	3	15	2403	Qa = Va x Aa x 60 a/m
	<u>4</u>	1.4	233./	
	<u>S</u>	1.5	218.9	Qa = x x €0
	$\varphi$	1./	200.2	Qa = acfm
	7	20	194.	$Q_{a_{etd}} = Q_{e} \times 17.647 \times \frac{P_{e}}{T_{e}} \times (1 - \frac{\% H_{2}O}{100})$
	₽	7.0	188.4	$Qs_{etd} = Qe \times 17.647 \times \frac{r_0}{T_0} \times (1 - \frac{10.72}{100})$
	•	= 10415		On = v17.847 v
	•	NP = 1.2115	To - [9]	Qa <sub>std</sub> = x 17.647 x − x (1 · − − − − x (1 · − − − − − − − − − − − − − − − − − −
			12	Os <sub>atd</sub> = decfm



E

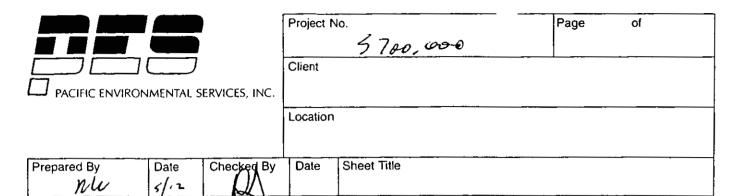
### GAS VELOCITY AND VOLUMETRIC FLOW RATE

		GAS V	ELOCITY AN	ND VOLUMETHIC FLOW HATE
	Plant: KE	5	· _	Date: 5/12/00  HOUSE WET Clock Time: 4 1619
	Sampling Lo	cation: KE	S BAG	HOUSE WET Clock Time: 7 /6/8
	Run #: <i>B</i>	I-3-B		Operators: GG / 7G / 7G
	Barometric F	ressure, in.	Hg: 29.	Operators: GG / 76 / 76)  Static Pressure, in. H <sub>2</sub> O: +4. 4
	Moisture, %:		Molecular	r wt., Dry: كورون والمرابع Wt., Dry: كورون المرابع ال
	Stack Dimen	sion, in. Dia	meter or Sid	le 1: /39 Side 2: /32"
	Wet Bulb, <sup>O</sup> F	:	Dry	Bulb, OF:
ſ	Traverse	Velocity	Stack	$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times \%N_2)$
	Point Number	Head in. H <sub>e</sub> O	Temp.	Md = (0.44 x . ) + (0.32 x ) + (0.28 x )
	/			Md =
	7	1,9	189,3	<u> </u>
ł		<del>/, s</del>	<del>                                     </del>	$Ma = Md \times (1 - \frac{\% H_2O}{100}) + 18 (\frac{\% H_2O}{100})$
	4	1.4	188.4	$M_{B} = ( ) \times (1 - \frac{100}{100}) + 18 \left( \frac{100}{100} \right)$
	5	1/0	10-2	100 / 100
	6	1.6	185.2	- Ma =
	7	-2.0	175.2	
	R	2.1	120.0	Pa = Pb + S.P. = ( · ) + - 13.6
	. /	18	168.7	13.6
. !	2_	1,5	166.3	Ps = in. Hg
	3	1.4	167.5	
	4	1.4	167,9	Ts (°R)
	\S	1.9	167.4	$V_8 = 85.49 \times Cp \times \sqrt{\overline{\Delta P}} \times \sqrt{\frac{Ts (^{\circ}R)}{Ps \times Ms}}$
	9	2.0	165.4	<u> </u>
	7	2.1	162.6	Va = 85.49 x ( ) x ( ) x \
•	8	2.1	1610	
-	1	1.6	155.4	-
•	5	1,2	1.55.1	As = ft <sup>2</sup>
	3	1.4	154.8	Qa = Va x Aa x 60 a/m .
	4	1.5	154.5	
	3 4 5	1.9	154.60	Qa = x x 60
	6.	2.0	154.5	- Ge = actm
	<u> </u>	2.2	154.1	Р <sub>в</sub> % н, о
	8	1.9	153.6	$Qs_{atd} = Qs \times 17.647 \times \frac{P_8}{T_8} \times (1 - \frac{\% H_2O}{100})$
		<u> </u>	Te =	Qs <sub>std</sub> = x 17.647 x

dectm

Qsatd=

	Project No.	Page of
	5700.000	
	Client	
PACIFIC ENVIRONMENTAL SERVICES, INC.	KES/EOM	
	Location	
	Ashland, Kentroly	
Prepared By Date Chegked By	Date Sheet Title	
Male 5/10/20 1	Nozzk Calulatin	
Pu	lim 5/10/00	
Total Bayhouse met, ac	fm = 612,821 actu	i ,
612,821 acfm = 5381 ft x 60	1.898 feet/second	, ' t
538/ft x 60		
1898 For = 8549 X 84	× \DP \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
more in solit 120	28.73 × 29.81	1
1 / 290 1 \2	$(0.031113)^2 = 0.000968$	
12010	(0.031113) = 0.000768	3 = 27
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
M. Box Dit =	6/21	
	3. 1. 1. 1. 2. X	
1.100 " North (use	1.050")	
160° F stack		
5/4/00		<del></del>
Total Baghouse inlet	acfui = 623,962 acfu	
623912 . F	27,100 22,100	
623 962 who = 1.93	3 tys	
7761 H 2000		
1032 6 100 11	602	
1.933 Fp = 85.49 x. 64 x	VAP V28.73 x 29.97	
(1933 Ens )2	11 1 2 1 <b>2</b>	
(1.933 Fps = (	6.03219) = 0.00/036 1	PI.
\185,49 x; 84 × 8.3367		
		<b>!</b> *
•		
		İ



My hun Inler action = Coolo, 547

[e06547 - 1.879 fys
5381, 60

1.879 = 85.49 x, 84 x [DP [ 28.73 x 29.78]

0,8304

(1,879) = (0,0315097) = 0,000993 XP

for down it 2000 with with a replacement

# FIELD DATA SHEET

	Plant	V	ES		Sampl	Sample Type: 🖊	Int. Oper	Operator: 16	146	Nozzle ID:	`	" OCO Thermocouple #	couple #:	
	Samp	Sampling Location	tion 1/4	shave ather	4/ Pbar:	29.60	Ps:	٠ ( ه		Assumed Bws:	Bws: /	Filter #:	300 304	7
	Run N	Run Number: 130 -	Bo-(	Date: 5/11/2	,200 CO2:	. 0	02:	17	•	Meter Box #:	#: 2	Y v. 28	Y:0.98 0H@: /	14
	Pretes	t Leak R	ate: 0,20	Pretest Leak Rate: 0,202 cfm @ 12 in	in. Hg. Probé	Probé Length/Type:	3. 2 Ch	Pitot #		Post-Test Leak Rate	Leak Rai		cfm @	in. Hg.
	Pretes	t Leak C	Pretest Leak Check: Pitot:	ا,	Stack Diameter	Diameter:		.se		Post-Test Leak Check: Pitot:	Leak Che	ck: Pitot:	Orsat:	
	Traverse	Treverse Sampling	Clock Time	Gas Meter		Orifice Pressu	Orifice Pressure Differential	Stack	Temp	Temperature	Impinger	Dry Gas M	Dry Gas Meter Temp.	Ритр
	Port	The	(24-hour	Reading	(d∇) peel	(HD)	(∆H) in H2O	Тетр.	- 1	O.F.	Temp.	1	Order	Vacuum
	Number	(uju)	clock)	(Vm) #3 (/,	in H2O	Desired	Actual	(Ts)	Probe	Filter	<b>oF</b> (4)	(Tm in <sup>O</sup> F)	(Im out <sup>O</sup> F)	я. <del>Т</del>
ingress.	7 Q	0	- 5581	82974										
4.70	~	5.2	1605	•	0.000968	400-18	6,00	12)	256	257	62	85	28	1.8
<i>t</i>	4	15.0	1400.	599 Knzi	0.00/036	0.98	0,95	٤2/	256	253	65	83	84	8/
the storyd.	ہ ہ	32.5	The second	1335 XXX	0.001086	0.98	7.00	127	250	230	713	90	28	7
	ァ	30,0	1504	1376308	0,00,036	0.97	0.97	737	258	252	23	20	£	4
Shartenery	5	37.5	/图/	1420 164	120000	0.96	0.96	40	20 20 20 20 20 20 20 20 20 20 20 20 20 2	253	74	92	89	7
A. Siak	ہو	45,0	1522	146.41	20,00.0	0 877	0.97	139	257	25/	73	44	0.0	
	7	575	15.30	16.05/	0.00/036	0.97	7.6.0	30	257	255	1	25	16	1
5	8	0,00	1537.	155.22	0.00/08	0.07	0.97	136	0.57	253	77	25	9/	
John John Co	9-1	2.701	1545	159.77	0.001036	0.960	0:96	1451	258	253	75	360		
Date Programme	2	0.511	1551	163.88	0.00/03	0.95	0.95	153	258	254	27	9.7	92	1
~ 15m7/	Ì	12.5	18601	48.34	0.00/03/0	0.94	0.94	156	25T	252	18	96	92	
£ 06	'	0.08:/	1001	172.69	0.001036	0.93	0.93	409	257	253	76	22	93	
750	٧,	137.5	1015	1.6.91	0,001036	0.83	66 U	11.9	257	254	76	92	96	
スケンジ	9	145.0	1622	181.34	0.00109	0.63	0.93	16,4	258	253	78.	ъ, 89	93	
10000 T	7	152.5	1630	184.107	6.00/036	0.96	0.60	05%	258	252	22		94	\ \ \
55.5	80	200.0	11087	190.0cm	0.00/05/0	0.00	0.98	138	25B	255	22	98	94	
	7.	200 \$	11045	194.49	10.001036	0.00	0.90	135	257	250	7	98	74	
る。ころ	1/	215.0	11.52	66.961,		0.93	0.93	167	250	254	7	١٦	48	
なったと	1	27.5	2001	263.23	1001	0.93	0.63	165	256	254	78	2	44	
Par Sol	4	230.0	17/18	207.55	1.00/03/0	0.92	6.92	174	257	253	90 20	97	94.	
Day of the control of	2	237.5	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	211.88	1.001036	0.93	0.92	1109	256	25.5	84	97	24	
600	-	24.0 14.0	193		0:00/03/6	136.0	0.95	2	258	254	72	1 %	9.3	7
>	7	25.5	1980	220, 58	0.001036	0.93	56'0	13	152	\$52	73	hb	96	l.
	S	7300.0	7.97	224.62	%01∞.0	6,94	0.94	159	757	254	72	97	ф	
7	24	307.5	745	229.44	0.00 1036	0.99	007	12	258	252	22	67	00	
Jane /			) -	•								-	-	
رمحر			_mV∆		Mp03219	AH-	<b>-</b>		:		ij <u>≃</u>	<u> </u>	1	
)	Bu	アン・シー	<b>7</b> .	3	Au DI - 0.00636	ક્							.• .:	

Mp-.03219 A

# FIELD DATA SHEET

Sample Type: PART. Operator: DS/AB Nozzle ID: 1000 Thermocouple #: Plant: XSS

Patr. 44. U Ps C. CO2: CO2: CO2: CO2: CO2: CO2: CO3: CO3: CO3: CO3: CO3: CO3: CO3: CO3	Plant:			ı	yamp A		- 1	; `		NOZZIE ID. ZZOO				7
Check: Plate: \$\int \text{Plate: } \text{   Date: \$\int \text{  Date: } \int   Date:	Ē	ing Loca	150n (3/4)	- 1	ri Pbar:	49.6	۱	2		Assumed	is in			<u> </u>
K Place: D. D. C. C. Chang.   Z. in. Hg. Probe Length Type:	Z	umber:	- 1	1		٥	02: 27		·	Meter Box	1	元 つ : ×	ZVH@: 7	74
Check Phot: Vonat:   Shack Diameter:   As:   Post Test Leak Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check: Phot:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Check:   Orsal Cast Name   Orsal Cast Name   Check:   Orsal Cast Name   Orsal C	stes	Leak R	ate: 0. 00	2 cfm @ 12 in.		ength/Type		Pitot #:		Post-Test	Leak Rat	e: 0.02 i	cfm @ <u>20</u>	in. Hg.
Cathour   Passing   Pass	etes	Leak C	heck: Pitot	t: V Orsat:		Diameter:	<b>\</b>	;;	_	Post-Test	Leak Che	ck: Pitot:	Orsa	
Continued   Processing   Proc	2	Sempling	Clock Time	Gas Meter	Velocity	Orifice Pressur	re Differential	Stack	Tempe	rature	Impinger	Dry Gas M	eter Temp.	Pump
1950   1950   1960	Ē	The	(24-hour	Reading	Head (∆p)	4 (H∆)	1420	Temp.	0	L.	Temp.		Outland	Vacuum
\$\frac{1\text{16.0}}{1800} \frac{2.53}{1900} \frac{67}{190} \frac{1}{190	ž	(E)	good)	(Vm) #3	одни	Desired	Actual	(Ts)	Probe	Filter	J.	_	(Imout <sup>o</sup> F)	Ē. Ē
1800 238		315	1787											
1800   238   15   0.00 034   0.98   0.38   135   256   252   74   98   98   1800   234   44   0.00 034   0.99   0.99   128   256   252   77   98   98   256   252   77   98   98   256   252   77   98   98   256   252   78   256   252   78   256   252		1-4	->	Ι.		3.99	1 *	12 7	257	253	72	00	4	
1907   144, 142   0.00/034   0.99   12 B 256   252   77 98   99   182   256   256   77 98   99   182   256   256   77 98   99   182   256   256   256   77 98   99   99   182   256   255   256   255   25	ightharpoonup	5736	0081	1 .		0.98	0	٠.	255	S	44	30	45	
	1	2020	1907	( ا	0.00/026	0.99		128	256	252	77	98	44	
1822   351.51   0.00/8%   0.97   0.97   140   257   354   31   36   35   35   35   35   35   35   35		820	18/8/	A	1501000	29.0	0.99	129	258	256	77	98	- 6	
1820   356.50   500/036   0.95   0.95   552   253   72   356   253   72   356   253   72   356   253   72   356   253   255	1	240	1822	28.8	1.00/08/	0,97	0.97	(40	25 7	254	$\widetilde{\omega}$	96	424	
1937   200.162   0.001036   0.945   151   252   152   152   153   154   154   155		2.926	0281	256.50	980/001	Sb.0	0.98	150	258	253	18	96	3	
State   State   O. O. O. O. O. O. O. O. O. O. O. O. O.	6	0 K	_	1 7	0.00/02	0.45	0.98	12.1	257	252	8	23	25	
\$\\ \text{10} \\ \	1	ANT C		ن ال	0,00/00/0	0.8.0	0.96	121	256	283	90	90	94	,
\$\limins_{\qqq} \frac{4\pi_{\qqq}}{2\pi_{\qqq}} \frac{2\pi_{\qqq}}{2\pi_{\qqq}} \frac{2\pi_{\qqqq}}{2\pi_{\qqqq}} \frac{2\pi_{\qqqq}}{2\pi_{\qqqq}} \frac{2\pi_{\qqqq}}{2\pi_{\qqqq}} 2\	L	ロンス		Cr	0.00/036	160	10.97	45	827	256	80	0,0	6	
1012 202 0.00034 0.99 0.99 130 2.58 253 79 99 0.00 1012 202 5.2 0.00034 0.96 0.96 158 258 258 258 258 258 258 258 258 258 2	T	200	†	272 (22	0.000	46.0	١٠.	87	255	253	79	8	35	
5 (011, 282 52 0.00/036 0.96 0.96 136 251 254 80 96 0.0 10 10 10 10 10 10 10 10 10 10 10 10 10	Т	4900	200	-	0.00/036		9			253	79	0	5	
1945 296. 49 0.00126 0.95 156 47 258 353 75 95 0.00126 0.96 0.56 140 259 253 78 95 95 0.00126 0.96 0.96 140 259 253 78 95 95 0.00126 0.96 0.96 140 259 253 78 95 95 0.00126 0.96 195 195 195 195 195 195 195 195 195 195	Т	7777	0.12		0,00/036	0.98	0.38	951	257	254	<i>6</i>	98	25	/
1945 295 810 0.00(26, 0.96, 0.56, 47 258 255 75 95 0.00 1945 295 295 295 295 295 295 295 295 295 29		14 10 10 10 10 10 10 10 10 10 10 10 10 10	026	∤ ∙	0,001000	0.95	0.95	925	246	98	14	97	4	
0 1945 295 810 0.00 1076 0.16 140 259 253 78 94 9 0 1945 295 810 0.00 1076 0.16 0.16 140 259 253 78 94 9		87.6		١.	0.00/86	196.0	0.50	47	258	253	12/	98	8.3	
avm (72,31) (Δp= 6.03219 DH= Ti= /4(e)	1	8	1	] ,	0,00 6056	10,46	0,26	740	259	253	18	94	63	.–
2 - 4 (4 (2) - 1/3. 3 (1) - 1/4 (2)	1	2		ł									$\left  \frac{1}{2} \right $	
0.987. Ti- /46.														
0.48P. 173.311 Jap = 6.03219 2H- Ti- 146.	<del>                                     </del>				·			,						
0.9(8)2. Ti- 14(e)	П										1			
0.9487							ŀ							
0.9487 = 146.							-							
0.9487 Tin- 9														
0.9(8)- 173.3(1) NAP- 6.032(4) AH- B.C. To- 14(2)														
0.9487 Tin- 9								·						
ονη- (13.31) «Δρ- 6.03219 ΔΗ- <del>Β. 6.</del> π- /46.	П													
0.946- 173.319 NAP- 10.03219 SH- 10.46.														
	8		۵۷م	173.317	8	PH4		_	N		<b>II</b> −	9	<del>,</del>	
	-	<u> </u>				Ó	ج ا							<b>,</b> :

Comp 3

(Jan 2 )

17.96.71/

### SAMPLE RECOVERY DATA

PLANT KENT. EL STEL	Run No. <u>BO-1</u>
DATE 5/11/00 Sample Box No. N-4	Job No. 5700.000
SAMPLE LOCATION BAG HOUSE OUTLET	_ Filter No. <u>300304</u>
TRAIN PREPARER AN	
SAMPLE RECOVERY PERSON	
COMMENTS Very 1: glat 1	onling
FRONT HALF Acetone Liquid Container No. Level Marked	Sealed
Filter Container No.	Sealed
Description of Filter	
Samples Stored and Locked	
BACK HALF/MOISTURE Container No.	
Liquid Level Marked	Sealed

	00175175	INITIAL VOL		WEIGHT (grams)	
IMP. NO.	CONTENTS	(ml)	INITIAL	FINAL	NET
1	DIWATER	100	697.4	699,1	.7
2	DI WATER	/60	714.5	730.4	5.9
3			615.2	618.4	3, 2
4	Silica Gel	250	752.7	796.4	3 3.7
5					
6					
-1	TOTAL		2779.8	28733	4.3.5

# FIELD DATA SHEET

Sampling Location fractions of the Pbs Run Number: 122-2 Date: 5/12/00 CO Pretest Leak Rate: 0.002 cfm @ 15 in. Hg. Pro Pretest Leak Check: Pitot: M Orsat: 201 State

Nozzle iD: d. 24の Thermocouple #: トルトル Assumed Bws: ハ Filter #: ミュッチョン Meter Box #: 2 Y: 43 女 AH@: ハルトル Post-Test Leak Rate: cfm @ in. Hg. Post-Test Leak Check: Pitot: ハハ Orsat: ルル

								2		rost-Tes	Leak C	rost-Test Leak Check; Pitot:	: Ny Orsat:	<u>च</u>
	Traverse	Iraverse Sampling	v	Gas Meter	Velocity	Orifice Press	Orifice Pressure Differential	Stack	Тепр	Temperature	Impinger	L.	Dry Gas Meter Terno.	Pumo
	<u> </u>		(24-hour	Reading	Head (∆p)	(PD)	(∆H) in H2O	Temp.		٥۴	Temp.	<u>L.</u>	Outlet	Vacuum
(	Tell Market	(mgu)		(Vm) #3	h H2O	Desired	Actual	<u>ئ</u>	Probe	File	٠ پ	(Tm In <sup>o</sup> P)	Ē	ĵ.
Jan Samo	O.	0	STIS	296.400									+ /	
	-	7.5	8	303 604	0.000 593	7.6	2.1	1+6	20	CVC	20/20/20/20/20/20/20/20/20/20/20/20/20/2	138	200	(C)
,	4		07.70	G G	0.000993	9.1	1.6	147	200	1-X	(SC)	2	79	9
	4	22.5	0.15	315.88	0.000993	رو دو	2.3	143	256	282	80	λ γ	2	) (Y
	3	30,7	0.145	323.0	6.2000	1.6	13.1	40	25%	723	50	20	) -	Q
	^	_	0.757	398 13	0.00973	7.6	٦.	ヤい	256	253	000	1.	CQ	14
	76	햣	2000	324 26	3	7	3.1	155	255	252	80	12 J		₩
	,	Т	7.0a0	340.36	5 6500 0	23		财	7570	25	65	81	82.63	m
	20		51 00	ストラング	2 65000 0	7		1523	256	ZŠ	80	99	84	7
このまつ			22.20	551.94	• • •	1,00	ره	E	256	Sec	78	8	क	M
્ સ	7	1.75 et 1		358 37		4	ا . تو	158	256	252	49	90	84	~
Stop	14		723.7	2804 55	0.000992	9.	2.1	151	256	35.	00	90	RC	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
10149		30 80	12/20	1511.30	0.00093	<i>c.</i> g	- ·	1107	256	25	8	6	6/2	<b>\</b> \
الدرساس المؤساسات	J.	7 27.78	2000 1000 1000 1000 1000 1000 1000 1000	1/10.14	7,55020,0	100	7	25	25	1381	l v	2	200	100
	<b>大</b>	0000 20 000	2000	182.34	٠,	J.	7	15%	257	250	00	90	860	J~
	- 5	י ר	1000			3	7	156	256	253	82	16	715	, (1)
0000	T	<u> </u>	ンとなって	1 1 8 7	2000:00 2000:00	7	1	1100	256	252	179	92	あび	)×(
1 2 5	\ \	4 '	X 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	13.17	0.00015	<i>y</i> (		102	256	252	D C	92	9	(r)
*	7	י וד	270	12 27	2-62-6	1,	7	1,7,7	a'STT	25/	0.C	93	88	
201883	1	$\perp$	1 1 2 2	10.10	2 × × × ×	٠	000	193	256	1750	Ø	3	87	) }
まれてい		0.87.6	4000	1.	4575°		<u>رم</u> آر	200	922	252	90	93	80	<u>Γ</u>
100 Jan 100	9	<u>``</u>	1000	10.00	0.000.7	ر ا ا	9	193	257	desa	967	93	88	100
NT WEE	7	1, TO C	1010	700	100000	X.	1	8	257	225	3	63	80	
LAS TAST	B	٦.	1,000		}   {	ر ا ا	A .	2/2	456	200	126	45	90	
\	1	۳		4278	17.00.12 17.00.12	7	ا _ ا ا	12	752	87	88	95	90	~
<u></u> i						-		+				,		
									•					

# FIELD DATA SHEET

Sample Sampling Location CACK HOUSE OUTLE! Phar.

Run Number: CO2 Date: S/12/CC> CO2:

Pretest Leak Rate: 6.40 C cfm @ IS in. Hg. Probe I Pretest Leak Check: Pitot: MA: Orsat: NA Stack I

Sample Type: (2827. Operator: RK/7)2.)
Pbar: 29. 45 Ps: -0. (
CO2: 02: 2-(
Probe Length/Type: 2 '(2/45) Pitot #: 3 M
Stack Diameter: 33 & ft As:

Time   (24-hour   Passing   Had (Up)   (LM) in HEO   Tamp   Open		Traverse	Sampling	Traverse Sampling Clock Time	Gas Meter	Velocity	Orifice Pressure Differential	re Differential	Stack	Тетр	Temperature	Impinger	Dry Gas M	Dry Gas Meter Temp.	Pump
Child   Chil		퉏	Ĕ	(24-hour	Reading	Head (∆p)	# (\DH) #	1 H20	Temp.	• 		Temp.	F e	Order	Vacuum
3:0:39 (0.27 443.98, 1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/		Number	!	dock)	(Vm) #3	h H2O	Desired	Actual	Ê	Probe	Filter	4	(Tm in <sup>o</sup> F)	(Tm out <sup>o</sup> F)	(in. Hg)
3:0:39 1027 449.04 0.000923 3.1 3.1 170 357 3:10:00 1035 455.54 0.00093 3.1 3.1 164 256 3:22:31042 466.4 0.00093 3.1 3.1 164 257 3:32:00 1050 466.4 0.000993 3.1 3.1 147 257 3:35:00 105 466.91 0.000993 2.2 3.2 147 257 3:35:00 105 466.71 0.000993 2.2 3.2 157 357 3:35:00 105 466.71 0.000993 2.2 3.2 157 356 3:55:00 105 466.71 0.000993 2.1 3.1 162 356					443.98										
3.1509 1035 455.54 0.00993 3.1 2.1 104 356 3.2.31042. 406.54 0.00993 3.1 2.1 10.2 357 3.313 1057 41445 0.00993 3.2 2.3 147 257 3.45.00 105 400.71 0.00993 3.2 2.2 157 257 4.00.00 125 407.71 0.00993 2.2 2.1 162 250		- 1	3:0:3	- 7	449.04		7.6	م. /		257	258	90	24	90	(C)
3.2. × 1042 4(e1.59 0.0093 3.1 3.1 3.1 165 357 3.3. × 1057 444 0.00093 3.2 3.2 147 257 3.53. × 1057 474 0.00993 3.2 3.2 147 257 3.53. × 110 467 37 0.00993 3.2 3.2 157 357 4.0. × 120 405749 0.00993 2.2 3.1 163 350		2	3.15:00	,1035	Ŋ	•	ن /	7.6	1104	256	254	8	K	91	100
3.3.3 1057 468, 4 0000823 3.2 3.3 147 257 35.2 3.3 147 157 357 35.2 3.3 147 157 357 35.2 3.3 14.5 1680999 3.2 3.3 14.5 157 357 357 357 357 357 357 357 357 357 3			3:22:2	Ţ	461.59	O. 00093	1.6	٦./	5 9/	128	253	7	40	92	100
2.53.3 1057 474 45 2.800993 3 2 2 2 (47 2.57 2.30) 2.45.0 (05 400.9) 2 2 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2 2 2 2 (47 2.57 2.30) 2.		d	3:33:00	osa/	468,4	0,000003	4.9	3	12	257	223	47	1/8	91	7
3.45.00 105 406.91 6.00.993 3.3 3.2 185 352 3.52.30 11.0 4015.149 0.00.993 3.1 3.1 163 356.3 4:00.00 100 4015.149 0.00.993 3.1 3.1 163 356.3		V	2.37.38	$\neg$	474.45	0.900993	;	1.	147	157	253	72	45	92	M
3:523 112 467.37 9.00992 3.3 2.6 157 357 357 356.			3.45.00	7	480.91	\$ 000093		2	1	252	523	77	26	2	160
4:0:00 40/5:149 5.000992 2.1 2.1 (les 256		$\neg$	3:8:30	7	4.87.27	2008-02	_:	2.2	157	257	assa	00	ds.	0	0
		J	30:5	1120	40,75,149	6.00992	7	۵. ا	6011	256	$  \gamma  $	6	47	92	M
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to James

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## SAMPLE RECOVERY DATA

PLANT KES	Run No
DATE $\frac{5(52)\%}{}$ Sample Box No. $\frac{N-3}{}$	
SAMPLE LOCATION Zaghouse Outlet	Filter No. <u>\$90.387</u>
TRAIN PREPARER AH	
SAMPLE RECOVERY PERSON Coy	
COMMENTS CLEAR	
FRONT HALF Acetone Liquid Container No. Level Marked	Sealed
Filter Container No.	Sealed
Description of Filter	
Samples Stored and Locked	<u>-</u>
BACK HALF/MOISTURE Container No.	· · · · · · · · · · · · · · · · · · ·
Liquid Level Marked	Sealed

IMP. NO.	CONTENTS	INITIAL VOL	ļ	WEIGHT (grams)	
	CONTENTS	(ml)	INITIAL	FINAL	NET
1	DI WATER	100	657.5	697.4	34.9
2	DI WATER	100	628.7	653.0	24.3
3			510.8	515.6	4.9
4	silica Gel	Z50	768.4	8055	37.1
5					
6	ı				
•7	TOTAL		3565 A	266 5	1011

FIELD DATA SHEET

Sampling Location (2010) (S. 0010) Phar.

Run Number: 60-2 Date: 5/12/00 CO2:

Pretest Leak Rate: 0.003 cfm @ 5 in. Hg. Probe
Pretest Leak Check: Pitot: Orsat: Stack

Sample Type: fact Operator: W/ll Phar: 29.45 Ps. - 0. (CO2: CO2: 2/Probe Length/Type: 2/gass Pitot #: -- Stack Diameter: As:

Nozzle ID: 7.345 Thermocouple #: 2 12 12 Assumed Bws: Filter #: 500 25 1 Meter Box #: 7.0.996 ΔH@: 7.72 Post-Test Leak Rate: 003 cfm @ 5 in. Hg. Post-Test Leak Check: Pitot: 1019 Orsal: 1011

(in in order of the order of th		Traverbe	Sampling	Traverse Sampling Clock Time	Gas Meter	Velocity	Orifice Pressure Differential	ne Differential	Stack	Temp	Temperature	tmpinger	Dry Gas M	Dry Gas Meter Temp	
Name   First   Social   Armin   Armin   Armin   First   Armin   Armi		ě		(24-hour	Reading	Head (∆p)	7 (H∇)	024	Төтр	0	u.	Temp.	hiet	Outlet	Vacuum
1.56   12.16   494. \$2.0   10.000023   1	<		_1	clock)		n H20	Desired	Actual	(a)	Probe	Filter	٠ پ	(I'm in <sup>o</sup> F)	(Im out <sup>o</sup> F)	în H
2 15:0 833	mp. 18	9	0	1218											
2 15:0 13.3	۵		7.5	See	499.87	9	1.60	1.66	145	257	S	<u>y</u>	96	90	1
4         23         2440         5/11         0.000064         1.60         1.7         1.73         35.4         76         9.2         3.4         3.4         3.5         3	٠	2	15:0	~ ·	5.535		1.62	1.62	160	257	0	72	92	98	0
\$\frac{4}{5}\frac{1}{3}\frac{1}\frac{1}{3}\f		4	1/2 N		5// //5		101	7.7	1607	257	252	1/2	20	16	7
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2.3.20   440   600.06   0.000762   1.54   1.6   100   0.58   0.54   70   101   9 2.3.20   440   605.04   0.00762   1.60   1.60   1.75   0.50		1	7 7	100		2000-C	1001	6	135	สา	255	140	00/	4.3	2
2:3:20   446   605.64   0.003763   1.0   1.7   357   353   73   100   9  2:3:20   446   605.64   0.003763   1.0   1.7   357   353   83   102   9  2:3:3:20   503   616.79   0.003763   1.0   1.6   1.7   357   357   353   83   02   9  2:3:3:20   578   627.92   0.003763   1.0   1.6   1.7   357   354   77   102   9  5:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:			20.5	77	1	0.00163	1,541	9	2	- 1	254	70	101	<b>L</b>	
23.7.20 (450 (472 0.001/2) 1.60 1.60 1.75 356 353 75 101 6 23.7.20 (502 4) 0.001/2 1.60 1.60 1.75 357 353 82 102 9 23.45.00 (512.4) 0.001/2 1.60 1.60 1.75 358 254 83 102 9 5.00.00 (578 (57.72 0.007/3) 1.62 1.60 1.75 358 254 83 102 9 5.00.00 (578 (57.72 0.007/3) 1.62 1.60 1.75 358 254 83 102 9			] 3]	26	1	শ	160	1.60	77	<b>AS7</b>	253	72	00/	16	
\$3.45.0   50'S   6/6.74   0.000763   60   70   77   357   353   8.2   702   9 \$5.45.0   57.3   6.22.4   0.000763   60   70   70   70   70   70   70   70	_		3 5	4 z		2.0001/05	101	1/0	198	S S	250	751	101	97	0
20.00   5/0   6/2-4   000/63   60   1.6   1.75   257   254   23   9   5/00   5/		T.		本作	10/1/10	5.7700-0	1007	1027	11.6	3571,	252	00/1/2	102	911	
\$\omega \times \langle	<del>- L.</del> .,	$\int_{-\infty}^{\infty}$	8 5	∿~	$\neg$	2-000/63	11011	6	(75	257	357	88.2	60	50	
DW: 00 15/15 CON 16 2 / (p /7/ 257 254 77 /02 /		Т	36.38		167.241	1,000,0	1-10-1	1.60		25. R	254	83	<b>1 _\</b>	00	
Δp= 0,02163 ΔH= (,62 Fm= 168		1	8	dar co	77:170	150 B	1621	70,	7/	257	354	77/	,02	00	17
Δρ= 0,02762 ΔH= 1,62 To 168	_	+	+	+						y F					
VAP= 0,02 16 AH= 1,62 The 168	j				_	7	1	-     -	1		ur.	<u> </u>	-	-	T
	7			-m∧∆		0,02 16	HO -HO		9	-	E.A.		-		7

# FIELD DATA SHEET

Probe Length/Type: 2 1/2015 Pitot #: 1m( Sample Type: (ART, Operator: The) Stack Diameter: CO2: Pretest Leak Rate: 0.003 cfm @ 15 in. Hg. Pretest Leak Check: Pitot: \_\_\_ Orsat: \_\_\_ Sampling Location (15) Run Number: (150-13) Plant:

Nozzle ID: 1.240 Thermocouple #: 2 - M., Post-Test Leak Rate: 003 cfm @ 5 in. Hg. Post-Test Leak Check: Pitot: \_\_\_Orsat: \_\_\_ Assumed Bws: | Filter #: 300 35| Meter Box #: 2 Y: 0.988 bH@: 172

	Transfer	Campling	Temestee Serroling Charle Time	Ges Mater	Velocity	Oxidos Pressure Differential	le Differential	Speck	Temperature		Impinoer	Dry Gas Meter Temo.	ter Terro.	Pump
	ā	T	(24-hour	Reading	Head (Ap)	02H vi (H∇)	120	Temp.	, o	_		<b>-</b>	Outer	Vacuum
	Number		ot Too	(Vm) ft.3	P 120	Destrod	Actual	(£)	- Probe	Filter	_	(ImhoP)	(Tm out <sup>O</sup> F)	ق. ج
		_		1027.92										
20,	_	3.013	1525	1023.48	0.007/03	1.6%	9]	541	358	254	72	104	80	2
Wants. o	2	2.15B	663	50,250)	0.000763	00)/	1.60	179	25	255	76	104	8	9
· )	1 `	2 33: X	l	V.	0.000/63	1.62	1.6	12/	1258	2	80	104	99	N
	1.	8.30:0	15 AB	629.19	0.00-762	9%	1.6	921	956	750	8	50	99	0
	اہرا	831.39	15 SS	1055.00	0.000762	/.(	1,0	60)/	257	283	86	60/	99	J
	0	B. 25 00)	10 m	St. 100	0.00076	1.61	1.00	175	258	154	72	103	5/8/3	<u> </u>
	7	3 < 3.39	0,01	99	0,000712	1.62	9'1	169	256	252	00	103	80	7
	Æ	4:00:00	110 118	267,672	0,000765	1.63	9/	169	252	157	72,	202	8	7
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### SAMPLE RECOVERY DATA

PLANT huntoday	Heuric Steel	Run No. <u>60-3</u>
DATE 5/12/60	_ Sample Box No	Job No. 5700,00
SAMPLE LOCATION	Ray house Outlet	Filter No. 300251
	44	
SAMPLE RECOVERY PE	RSON	
COMMENTS	Vartialete overna	
FRONT HALF Acetone Container No.	Liquid Level Marked	Sealed
Filter Container No.		Sealed
Description of Filter		
Samples Stored and Locked	l	
BACK HALF/MOISTUR Container No.	E	
Liquid Level Marked _		Sealed

IMP. NO.	CONTENTS	INITIAL VOL		WEIGHT (grams)	
IMP. NO.	CONTENTS	(ml)	INITIAL	FINAL	NET
1	DIWATER	100	659.5	692,)	. 32,6
2	DIWATER	100	689.1	714.8	25.7
3			582.4	585.8	3,4
4	Shee Gel	250	705.3	736.6	31/3
5					
. 6					
·T	OTAL		D 6 7/2 4 3	7779,3	97 1



PROJECT A	ANALYTICA	AL SHEET
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NAME: KES PROJECT NUMBER: 5700-000

PROJECT MANAGER: R-Kolde PROJECT DATE: 5-12-00

METHOD: MS NUMBER OF SITES: \_\_\_\_\_

BO-1 00-511 F./fr. 300304 351.95 355.85 3.9  BO-1 00-512 A-ebar 2028 108441.4 108,450.25 8.8  BO-1 00-513 Back 2011 110701.6 110710.6 9-  BO-2 00-514 Filter 300382 351.45 362.0 10.5  BO-2 00-515 Acebar 2037 107717.75 107,725.05 7.3  BO-2 00-516 Back 2005 105952.05 105960.2 8-1  BO-3 00-517 Filter 300281 350.55 351.75 1.7  BO-3 00-518 Acebar 2020 107984.1 107,990.45 6.3	<u></u>					
BO-1 DO=5 12 A-ebre 2028 108441.4 108,450.25 8.8  BO-1 DO-513 Back 2 2011 110701.6 110710.6 9.  BO-2 DO-514 FA- 3003+2 351.45 362.0 10.5  BO-2 DO-515 Acebre 2037 107717.75 107,725.05 7.3  BO-2 DO-516 Back 2005 105952.05 105960.2 8-1  BO-3 DO-517 File- 300251 350.55 351.75 1.7  BO-3 DO-518 Acebre 2020 107984.1 107,990.45 6.3	RUN NO.	PES NO.	#/DESCRIPTION	TARE MASS	FINAL MASS	NET MASS
130-1   00-513   13n. L & 2011   110701.6   110710.6   9-80-2   00-514   174- 300312   351.45   362.0   10.5     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   7.3     107,725.05   1.7     107,990.45   1.7     107,990.45   1.3	B0-1	00-511	F. /ter 300304	351.95	355,85	3.9
$B0-2$ $00-514$ $FH 3003_{F2}$ $351.45$ $362.0$ $10.5$ $B0-2$ $00-515$ $Acebare$ $2037$ $107717.75$ $107,725.05$ $7.3$ $B0-2$ $00-516$ $3nck \pm$ $2005$ $105952.05$ $105960.2$ $8-1$ $B0-3$ $00-517$ $EI_{tr} 300251$ $350.55$ $351.75$ $1.75$ $B0-3$ $00-518$ $Acebare$ $2020$ $107984.1$ $107,990.45$ $6.3$	30-1	Ø0-5 12	Acetore 2028	108441,4	108,450,25	8.85840
Bo-2 00-515 Acebane 2037 107717.75 107,725.05 7.3 BO-2 00-516 Back & 2005 105952.05 105960.2 8-1 BO-3 00-517 Filter 300251 350.55 351.75 1.7 BO-3 00-518 Acebane 2020 107984.1 107,990.45 6.3	130-1	00-513	Back 2011	110 701,6	110710.6	9-0 88
BO-3 00-516 Brile 3005 105952.05 105960.2 8-1 BO-3 00-517 File 300051 350.55 351.75 1.7 BO-3 00-518 Actor 2000 107984.1 107,990.45 6.3	B0-2	00-514	FA- 3003F2	351.45	362.0	10.550.5
BO-2       00-516       Back & 2005       105952.05       105960.2       8-1         BO-3       00-517       Filter 300251       350.55       351.75       1.7         BO-3       00-518       Action 2020       107984.1       107,990.45       6.3	B0/2	00-515	Acebre 2037	107717.75	107,725.05	7.3 7.05
30-300-518 Action 2020 107984-1 107,990,45 6.3	30-2	00-516	Brikt 2005	105952.05	105960.2	8-15785
	B0-3	00-517	Filter 300251	350.55	351.75	1. 2 6.99
BO-3 00-519 Back 1996 109868.65 109876.15 7.5	30-3	00-518	Acetone 2020	107984-1	107,990,45	6.3561
	Bo -3	00-515	Back & 1996	109868.65	109876-15	7.50
				·		
	· · · · · · · · · · · · · · · · · · ·					

PROJECT ANALYTICAL SHEET						
SITE:	RUN NO.: 130-1					
FILTER NO.: 300304 FINAL MASS:	I.D. NO.: 00-511  TARE MASS: 351,95					
#1 5/23 0724	NAME MASS  AH 356.0  AH 355.7					
	AVG. MASS: 355.85  NET GAIN: 3,9 3,79					
FINAL MASS:	F I.D. NO.: 00-512  TARE MASS: 108 4 41,4  NAME MASS  AH 108,450,5  4D 108,450,0  AVG. MASS: 108,450.25  NET GAIN: 8.85 8,4					
B/H BEAKER NO.: 20    FINAL MASS:  DATE/TIME  #1 \( \frac{1}{2} \frac{4}{00} \) \( \frac{1}{2} \frac{2}{0} \)  #2 \( \frac{5}{2} \frac{5}{0} \) \( \frac{2}{0} \)  #3  #4	I.D. NO.:					

PROJECT ANALYTICAL SHEET						
SITE:	RUN NO.:					
FILTER NO.: 300382 FINAL MASS:	I.D. NO.:					
DATE/TIME #1 \$/23 0726 #2 \$]23 1501 #3 #4	NAME 362.7  _AH 361.8  AVG. MASS: 362.0  NET GAIN: 10.55 10.35					
F/H BEAKER NO.: 2037 FINAL MASS:  DATE/TIME #1 5/23 0726 #2 5/23 501 #3 #4	TARE MASS: 10 7 717.75  NAME MASS  AH 107,725.3  107,724.8  AVG. MASS: 107,725.05  NET GAIN: 7.3 7.05					
B/H BEAKER NO.: 200  FINAL MASS:  DATE/TIME  #1 5/24/00 1620  #2 5/25/00 820  #3	I.D. NO.: 00-516  TARE MASS: 105950-05  NAME MASS 4 105960.00  DA 105960.00  AVG. MASS: 105960.2  NET GAIN: 8-15 7.95					

	<del></del>	
PROJECT	ANALYTICAL S	
SITE:		<u> 130-3</u>
FILTER NO.: 300 25)	I.D. NO.: _	00-517
FINAL MASS:	TARE MA	SS: >50.55
DATE/TIME	NAME	MASS
#1 <u>\$/23_0727</u>	A 4	352.0
#2 3/23 1501	DH	351.5 \$
#3	<del></del>	
#4		251 75
		SS: 351.75 N: 1.2 0.95
	<del></del>	.— <u>.                                   </u>
F/H BEAKER NO.: ユロョ		00-518
FINAL MASS:	TARE MA	ss: 107984.1
DATE/TIME	NAME	MASS
#1 <u>5/23 6727</u>	<u> </u>	107,990.7
#25/23 1502 #3	AU	107,990.2
#4	·	
	AVG MA	SS: 107, 990.45 ·
	NET GAI	N: 6.35 6.1
B/H BEAKER NO.: 199	I.D. NO.:	00-519
FINAL MASS:	TARE MA	SS: 109 868.65
DATE/TIME	NAME	MASS
#1 <u>5/24/00 1620</u>	<u>DA</u>	109876.4.
#25125100 830	DB	109875.94
#3		
#4		
		SS: 109876.15
	NET GAI	N:

Appendix E

Example Calculations

### **Nomenclature and Dimensions**

An	=	Cross-sectional area of sampling nozzle, ft <sup>2</sup>
As	=	Cross-sectional area of stack, ft <sup>2</sup>
Bws	=	Proportion by volume of water vapor in the gas stream, dimensionless
Cp	=	Pitot tube coefficient, dimensionless
Cs	=	Concentration of pollutant matter in stack gas-dry basis, grains per dry standard cubic foot (gr/dscf)
%CO	=	Percent of carbon monoxide by volume, dry basis
%CO	=	Percent of carbon dioxide by volume, dry basis
ΔΗ	=	Average pressure drop across the sampling meter flow ofifice, inches of water (in. $H_2O$ )
GCV	=	Gross calorific value, Btu/lb
I	=	Percent of isokinetic sampling
La	=	Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change/ equal to 0.020 cubic foot per minute or 4% of the average sampling rate, whichever is less
Md	=	Dry molecular weight, lb/lb-mole
Mn	=	Total amount of pollutant matter collected, milligrams (mg)
Ms	=	Molecular weight of stack gas (wet basis), lb/lb-mole
%N <sub>2</sub>	=	Percent of nitrogen by volume, dry basis
%O <sub>2</sub>	=	Percent of oxygen by volume, dry basis
ΔΡ	=	Velocity head of stack gas, inches of water (in. H <sub>2</sub> O)
Pbar	=	Barometric pressure, inches of mercury (in. Hg)
Ps	=	Absolute stack gas pressure, inches of mercury (in. Hg)
Pstd	=	Gas pressure at standard conditions, inches of mercury (29.92 in. Hg)

pmr = Pollutant matter emission rate, pounds per hour (lb/hr)

Qs = Volumetric flow rate - wet basis at stack conditions, actual cubic feet per minute (acfm)

Qsstd = Volumetric flow rate - dry basis at stack conditions, actual cubic feet per minute (dscfm)

Tm = Average temperature of dry gas meter, °R

Ts = Average temperature of stack gas, °R

Tstd = Temperature at standard conditions, 528°R

Vlc = Total volume of liquid collected in impingers, ml

Vsg = Weight of moisture collected in silica gel, grams

Vm = Volume of dry gas sampled at meter conditions, ft<sup>3</sup>

Vmstd= Volume of dry gas sampled at standard conditions, ft<sup>3</sup>

Vs = Average stack gas velocity at stack conditions, ft/s

Vwstd = Volume of water vapor at standard conditions, scf

γ = Dry gas meter calibration factor, dimensionless

 $\Theta$  = Total sampling time, minutes

NOTE: Standard conditions = 68°F and 29.92 in. Hg

#### **Example Calculations for Pollutant Emissions**

Volume of dry gas sampled corrected to standard conditions, ft3.
 Note: Vm must be corrected for leakage if any leakage rates exceed La.

$$Vwstd = 17.647 * Vm * \gamma * \frac{Pbar + \frac{\Delta H}{13.6}}{Tm, R}$$

2. Volume of water vapor at standard conditions, ft3.

$$Vmstd = 0.04707 * Vlc + 0.04715 * Vsg$$

3. Moisture content in stack gas, dimension less.

$$Bws = \frac{Vwstd}{Vwstd + Vmstd}$$

4. Dry molecular weight of stack gas, lb/lb -mole.

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

5. Molecular weight of stack gas, lb/lb-mole.

$$Ms = Md (1-Bws) + 18 * Bws$$

6. Stack velocity at stack conditions, f/s.

$$Vs = 85.49 * Cp * ave\sqrt{\Delta P} * \sqrt{\frac{Ts, R}{Ps * Ms}}$$

7. Stack gas volumetric flow rate at stack conditions, cfm.

$$Os = 60 * Vs * As$$

8. Dry stack gas volumetric flow rate at standard conditions, cfm.

$$Qsstd = 17.647 * Qs * \frac{Ps}{Ts. R} * (1-Bws)$$

9. Concentration in gr/dscf.

$$Cs = 0.01543 * \frac{Mn}{Vmstd}$$

10. Concentration in lb/dscf.

$$Cs$$
,  $lb/dscf = \frac{gr/dscf}{7000}$ 

11. Pollutant mass emission rate, lb/hr.

$$Pmr$$
,  $lb/hr = lb/dscf * Qsstd * 60$ 

12. Pollutant mass emission rate, lb/MMBtu.

$$pmr$$
,  $lb/MMBtu = \frac{pmr$ ,  $lb/hr}{MMBtu/hr}$ 

13. F-factor, Fd.

$$Fd \approx \frac{10^6*(3.64*\%H) + (1.53*\%C) + (0.57*\%S) + (0.14*\%N) - (0.46*\%O_2)}{GCV (Btu/lb)}$$

14. F-factor, pollutant mass emission rate, lb/MMBtu.

$$= \frac{lb/dscf * Fd * 20.9}{(20.9 - \%O_2)}$$

15. Heat imput, MMBtu/hr fuel.

$$= \frac{GVC (Btu/lb) * Feed Rate (lb/hr)}{10^6}$$

16. Heat input, MMBtu/hr, F-factor.

$$= \frac{Qsstd}{Fd} * ((20.9 - \%O_2) + 20.9) * 60$$

17. Volume of dry gas sampled corrected to standard conditions, m3.

$$Vmstd\ (m^3) = Vmstd\ (ft^3) * 0.02831$$

18. Concentration in ug/dscm.

19. Concentration corrected to 7% oxygen.

$$ug/dscm @ 7\% O_2 = ug/dscm * (20.9-7) / (20.9-measured O_2)$$

20. Concentration, part per million, dry basis.

ppm, dry = ppm, wet basis 
$$\div$$
 (1 -  $\frac{BWS, \%}{Fd}$ )

21. Pollutant Mass Emission Rate, pound per hour.

PMR, 
$$lb/hr = \frac{ppm, dry * Compound Molecular Weight}{(385.3 \times 10^6)} * dscfm * 60$$

#### Common Molecular Weights (MW)

Total Gaseous Organic Compound (TGOC)	=	44.09
Sulfur Dioxide (SO <sub>2</sub> )	=	64.05
Nitrogen Oxides (NO x)	=	46.00
Carbon Monoxide ( CO )	=	28.01
Oxygen (O <sub>2</sub> )	=	32.00
Carbon Dioxide (CO <sub>2</sub> )	=	44.01

22. Removal Efficiency (RE), percent.

$$RE = (Inlet lb/hr - Outlet lb/hr / Inlet lb/hr) * 100$$

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138,	

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	Summary	of Stack	Gas Parame 5700.000	Summary of Stack Gas Parameters and Test Results 5700.000	est Resul	Si		
		Kentuo US EPA 1 Hars	ntucky Electric Steel, II PA Test Method 2 - Vel Harsell Baghouse inlet Page 1 of 1	Kentucky Electric Steel, INC US EPA Test Method 2 - Velocity Harsell Baghouse inlet Page 1 of 1	£.			
	RUN NUMBER RUN DATE	14	1B 5/11/00	2A 5/12/00	2B //00	38	3B 5/12/00	
	RUN TIME	730	705	630	1050	1050	1619	Average
	MEASURED DATA							
Pstatic	Stack Static Pressure, inches H <sub>2</sub> O	5.10	4.50	5.20	4.50	4.50	4.60	4.73
P Pag	Barometric Pressure, inches Hg	29.60	29.60	29.45	29.45	29.45	29.45	29.50
ဝိ	Carbon Dioxide content, % by volu	0.0	0.0	0.0	0.0	0.0	0.0	0.00
ő	Oxygen content, % by volume	21.0	21.0	21.0	21.0	21.0	21.0	21.00
z	Nitrogen content, % by volume	79.0	79.0	79.0	79.0	79.0	79.0	79.00
ပ	Pitot Tube Coefficient	0.84	0.84	0.84	0.84	0.84	0.84	0.84
	Circular Stack? 1=Y,0=N:	0	0	0	0	0	0	00:0
¥s <	Diameter or Dimensions, inches:	18348.00	18348.00	18348.00	18348.00	18348.00	18348.00	18348.00
، ≻	Stack Area, it	127.4	127.4	127.4	127.4	127.4	127.4	127.42
a Š	Moisture, % by volume	1.20	1.20	2.50	2.60	2.60	2.70	2.13
Ļ	Square root Delta P	1.36	1.3	1.34	4.	1.4	1.3	1.34
2	Otack Temp	142.00	130.0	168.00	146.0	146.0	191.0	153.83
_	CALCULATED DATA			- T			·	
ഫ്.	Stack Pressure, inches Hg	29.98	29.93	29.83	29.78	29.78	29.79	29.85
∑ .	Molecular Weight (d.b.), Ib/lb•mole	28.84	28.84	28.84	28.84	28.84	28.84	28.84
ž:	Molecular Weight (w.b.), Ib/Ib•mole	28.71	28.71	28.57	28.56	28.56	28.55	28.61
>" (	•	81.6	79.2	82.4	82.2	82.2	81.1	81.46
<b>ٿ</b>	-	624,197	605,253	630,169	628,212	628,212	620,372	622735.84
ď	-	541,677	535,131	514,859	530,431	530,431	487,222	523291.69
ادّ	Stack Gas Volumetric flow, dscmm	15,339	15,153	14,579	15,020	15,020	13,797	14817.97

## Summary of Stack Gas Parameters and Test Results 5700.000

# Kentucky Electric Steel, INC. US EPA Test Method 5 - Particulate Matter Harsell Baghouse Outlet Page 1 of 2

	RUN NUMBER RUN DATE RUN TIME	BO-1 5/11/00 1355-1945	BO-2 5/12/00 0715-1120	BO-3 5/12/00 1218-1618	Average
	MEASURED DATA				i
P <sub>static</sub>	Stack Static Pressure, inches H <sub>2</sub> O	-0.10	-0.10	-0.10	-0.10
у	Meter Box Correction Factor	0.988	0.988	0.988	0.988
P <sub>bar</sub>	Barometric Pressure, inches Hg	29.60	29.45	29.45	29.50
$V_{m}$	Sample Volume, ft <sup>3</sup>	173.319	197.399	178.352	183.023
Dp <sup>1/2</sup>	Average Square Root Dp, (in. H <sub>2</sub> O) <sup>1/2</sup>	0.0322	0.0315	0.0276	0.0304
DH	Avg Meter Orifice Pressure, in. H <sub>2</sub> O	0.96	2.11	1.62	1.56
T <sub>m</sub>	Average Meter Temperature, °F	94	89	97	93
$T_{s}$	Average Stack Temperature, °F	146	162	168	159
$V_{ic}$	Condensate Collected, ml	43.5	101.1	93.0	79.2
CO2	Carbon Dioxide content, % by volume	0.0	0.0	0.0	0.0
O <sub>2</sub>	Oxygen content, % by volume	21.0	21.0	21.0	21.0
N <sub>2</sub>	Nitrogen content, % by volume	79.0	79.0	79.0	<sup>.</sup> 79.0
$C_p$	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
·	Circular Stack? 1=Y,0=N:	0	0	0	
As	Diameter or Dimensions, inches:	774862.95	774862.95	774862.95	774862.95
Q	Sample Run Duration, minutes	300	240	240	260
$D_n$	Nozzle Diameter, inches	1.000	1.240	1.240	1.160
	CALCULATED DATA				
$A_n$	Nozzle Area, ft²	0.005454	0.008386	0.008386	0.007408
V <sub>m(std)</sub>	Standard Meter Volume, ft <sup>3</sup>	161.778	185.522	165,012	170.771
V <sub>m(std)</sub>	Standard Meter Volume, m <sup>3</sup>	4.581	5.253	4.673	4.836
$Q_{m}$	Average Sampling Rate, dscfm	0.539	0.773	0.688	0.667
$P_{s}$	Stack Pressure, inches Hg	29.59	29.44	29.44	29.49
$B_{ws}$	Moisture, % by volume	1.2	2.5	2.6	2.1
$B_{ws(sat)}$	Moisture (at saturation), % by volume	23.1	34.3	39.5	32.3
$V_{wstd}$	Standard Water Vapor Volume, ft3	2.048	4.759	4.378	3.728
1-B <sub>ws</sub>	Dry Mole Fraction	0.988	0.975	0.974	0.979
$M_d$	Molecular Weight (d.b.), lb/lb•mole	28.84	28.84	28.84	28.84
$M_{s}$	Molecular Weight (w.b.), lb/lb•mole	28.70	28.57	28.56	28.61
$V_s$	Stack Gas Velocity, ft/s	2.0	1.9	1.7	1.9
Α	Stack Area, ft <sup>2</sup>	5381.0	5381.0	5381.0	5380.99
$Q_a$	Stack Gas Volumetric flow, acfm	630,570	628,028	553,007	603,868
$Q_s$	Stack Gas Volumetric flow, dscfm	536,390	511,287	445,529	497,735
$Q_s$	Stack Gas Volumetric flow, dscmm	15,189	14,478	12,616	14,094
	Isokinetic Sampling Ratio, %	99.2	97.0	99.0	98.4



## Summary of Stack Gas Parameters and Test Results 5700.000

# Kentucky Electric Steel, INC. US EPA Test Method 5 - Particulate Matter Harsell Baghouse Outlet Page 2 of 2

	RUN NUMBER RUN DATE RUN TIME	BO-1 5/11/00 1355-1945	BO-2 5/12/00 0715-1120	BO-3 5/12/00 1218-1618	Average
	EMISSIONS DATA				
	Particulate Matter		_	,	
PM	Filter Weight Gain, mg	3.9	/ 10.55 / 15.45 /	1.2	
PM	Beaker Weight Gain, mg	17.85	15.45	13.85 🖊	/
PM	Total Catch, g	0.0218	0.0260	0.0151	0.0209
CPM	Concentration, gr/dscf	2.07E-03	2.16E-03	1.41E-03	1.88E-03
CPM	Concentration, Ib/dscf	2.96E-07	3.09E-07	2.01E-07	2.69E-07
E <sub>PM</sub>	Emission Rate, lb/hr	9.54	9.48	5.37	8.13



Appendix F

**Calibration Data** 

#### CALIBRATION PROCEDURES AND RESULTS

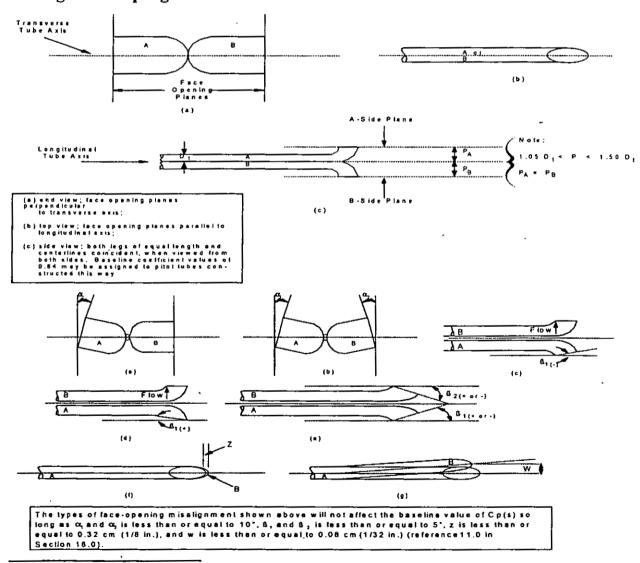
All of the equipment used is calibrated in accordance with the procedures outlined in the <u>Quality Assurance Handbook for Air Pollution Measurement Systems</u>, Volume III. The following pages describe these procedures and include the data sheets.

#### Nozzle Diameter

Each nozzle used in these tests is calibrated by making three separate measurements and calculating the average. If a deviation of more than 0.004 of an inch is found between any two measurements, the nozzle is either discarded or reamed out and remeasured. A micrometer is used for measuring. These calibration data are shown in the following Nozzle Calibration data sheet(s).

#### Pitot Tube Calibration

Each pitot tube used in sampling meets all requirements of EPA Method 2, Section 4.1.\*\* Therefore, a baseline coefficient of 0.84 is assigned to each pitot tube. The following pages show the alignment requirements of Method 2 and the Pitot Tube Inspection Data Sheet(s) for each pitot tube used during the test program.



<sup>\*\*40</sup> CFR 60, Appendix A, July 1995

Carry   B1															Cincinnat	0× 45 24
Column   C	]					PITO	T TUBE	CALIBRA	TIONS						613.48 ww	3.489,8611 9.6619 Fax w.pes.com
1,	Calibrated	8	B	α2	B <sub>2</sub>	<b>&gt;</b>	θ	4	22	3	۵	a	٥	A/2/D,	Accept/Reject	
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	1/13/00	E C	<del>-</del> 5		1	0.1	9.0	0.948	0.002	0.010	0.474	0.474	0.375	1 264	ACCENT	
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	10/29/99	£,	. <del>.</del>		3.7	= 7	7. 0	0.955	0.018	0.028	0.477	0.478	0.375	1.273	ACCEPT	
16	10/29/99	1.	1.8	6.0	0.	4.	2.5	- 0.0.0 800.0	0.038	0.006	0.538	0.539	0.364	1.479	ACCEPT	
0.7         0.4         0.6 <td>10/28/99</td> <td>1.6</td> <td>9.0</td> <td>9.0</td> <td>9.0</td> <td>0.7</td> <td></td> <td>0.940</td> <td>0.023</td> <td>0.028</td> <td>0.474</td> <td>0.474</td> <td>0.375</td> <td>1.264</td> <td>ACCEPT</td> <td></td>	10/28/99	1.6	9.0	9.0	9.0	0.7		0.940	0.023	0.028	0.474	0.474	0.375	1.264	ACCEPT	
9         0.4         0.4         0.7         0.7         0.9         0.94         0.07         0.75 <td>1/13/00</td> <td>0.7</td> <td>0.2</td> <td>1.6</td> <td>0.2</td> <td>2.6</td> <td>1.6</td> <td>0.945</td> <td>0.043</td> <td>0.013</td> <td>0.477</td> <td>0.477</td> <td>0.375</td> <td>1.272</td> <td>ACCEPT</td> <td></td>	1/13/00	0.7	0.2	1.6	0.2	2.6	1.6	0.945	0.043	0.013	0.477	0.477	0.375	1.272	ACCEPT	
0.4         0.6         0.8         0.6         0.1         0.2         0.94         0.00         0.47<	10/28/99	4.0	4.0	0.7	0.7	0.7	0.9	0.945	0.012	0.020	0.473	0.472	0.375	1.260	ACCEPT	
9         0.3         0.4         0.6         0.4         0.6         0.6         0.7         0.0         0.0         0.0         0.0         0.7         0.7         0.7         0.0	66/67/01	O 6	9.0	8.0	9.0	0.1	0.2	0.945	0.002	0.003	0.473	0.473	6.375	1.260	ACCEPT	
4.7         1.4         1.4         1.1         0.4         0.95         0.019         0.07         0.47         0.47         0.375         1.27           9         0.2         0.9         1.6         1.3         0.1         0.44         0.956         0.002         0.44         0.473         0.375         1.275           9         1.9         1.6         1.2         0.4         0.956         0.002         0.44         0.475         0.375         1.276           9         1.9         1.0         1.4         1.8         1.6         0.956         0.002         0.047         0.475         0.375         1.289           9         1.0         1.0         1.0         0.966         0.002         0.047         0.475         0.375         1.289           9         0.1         0.0         0.0         0.0         0.002         0.044         0.047         0.075         0.075         0.075         0.048         0.075         0.009         0.044         0.047         0.075         0.075         0.075         0.044         0.048         0.075         0.075         0.075         0.075         0.075         0.075         0.075         0.075         0.075 </td <td>10/29/99</td> <td></td> <td>9.0</td> <td>S 6</td> <td>4</td> <td>9.0</td> <td>0.4</td> <td>0.949</td> <td>0.010</td> <td>0.007</td> <td>0.474</td> <td>0.475</td> <td>0.375</td> <td>1.260</td> <td>ACCEPT</td> <td></td>	10/29/99		9.0	S 6	4	9.0	0.4	0.949	0.010	0.007	0.474	0.475	0.375	1.260	ACCEPT	
0.2         0.9         0.9         0.045         0.045         0.047         0.475         0.475         0.375         1.286           0.2         0.6         0.0         0.0         0.002         0.047         0.047         0.047         0.037         1.275           1.9         3.5         1.0         1.4         0.1         0.0 <td>10/29/99</td> <td>. 4</td> <td>2 - 4 C</td> <td>7.7</td> <td>4.</td> <td>Ξ;</td> <td>4.0</td> <td>0.958</td> <td>0.018</td> <td>0.007</td> <td>0.479</td> <td>0.479</td> <td>0.375</td> <td>1 277</td> <td>ACCEPT</td> <td></td>	10/29/99	. 4	2 - 4 C	7.7	4.	Ξ;	4.0	0.958	0.018	0.007	0.479	0.479	0.375	1 277	ACCEPT	
0.2         0.6         0.7         0.1         0.848         0.002         0.047         0.475         0.475         0.375         1.285           1.9         3.5         1.0         1.4         1.8         1.6         0.937         0.002         0.044         0.475         0.375         1.285           1.9         3.5         1.0         1.4         1.8         1.6         0.937         0.029         0.048         0.448         0.475         0.375         1.285           9         0.2         0.2         0.4         0.956         0.002         0.049         0.448         0.375         1.285         1.285           9         0.1         0.2         0.2         0.4         0.957         0.049         0.448         0.475         0.375         1.285         1.249         1.289         0.97         0.091         0.047         0.445         0.375         1.283         0.97         0.091         0.047         0.445         0.375         1.283         0.97         0.091         0.010         0.044         0.375         1.283         0.97         0.010         0.044         0.475         0.375         1.283         0.975         0.048         0.048         0.04	10/28/99	, 0	7: 0	4. 4	4.0	2.7	0.4	0.945	0.045	0.007	0.472	0.473	0.375	1.260	ACCEPT	
1.9         3.5         1.0         1.4         0.4         0.956         0.003         0.007         0.48         0.48         0.47         0.47         0.48         0.375         1.275           1.6         0.8         1.0         0.1         0.7         0.966         0.002         0.046         0.466         0.466         0.466         0.466         0.375         1.219           0.0         0.1         0.2         0.3         0.3         1.2         1.2         0.7         0.48         0.075         0.448         0.375         1.291           1.6         1.4         0.7         0.7         0.946         0.017         0.049         0.446         0.475         0.375         1.239           1.6         1.4         0.7         0.7         0.948         0.017         0.449         0.375         1.239           1.6         0.4         0.1         0.7         0.948         0.017         0.44         0.475         0.375         1.239           0.4         1.6         0.4         0.946         0.017         0.047         0.443         0.375         1.239           0.4         0.1         0.0         0.02         0.027	10/28/99	0.2	9 6	5 5	? u	_ c	0.0	0.949	0.002	0.002	0.474	0.475	0.375	1.265	ACCEPT	
1.6         0.8         1.0         0.8         0.0 <td>10/29/99</td> <td>0</td> <td>, r.</td> <td>, <del>-</del></td> <td>? <del>-</del></td> <td>7.0</td> <td>4.0</td> <td>0.956</td> <td>0.003</td> <td>0.007</td> <td>0.478</td> <td>0.478</td> <td>0.375</td> <td>1.275</td> <td>ACCEPT</td> <td></td>	10/29/99	0	, r.	, <del>-</del>	? <del>-</del>	7.0	4.0	0.956	0.003	0.007	0.478	0.478	0.375	1.275	ACCEPT	
9         0.2         0.3         0.2         0.4         0.44         0.44         0.44         0.44         0.44         0.44         0.375         1.291           0.3         0.3         0.3         0.3         1.3         1.2         0.951         0.021         0.019         0.448         0.448         0.375         1.298           0.3         0.1         0.3         1.3         1.2         0.954         0.027         0.048         0.047         0.047         0.475         0.375         1.228           9         1.6         0.3         1.6         0.3         0.048         0.017         0.048         0.047         0.047         0.475         0.375         1.289           9         1.4         1.2         0.7         0.7         0.9         0.948         0.017         0.015         0.475         0.375         1.289           1.4         1.5         1.4         0.7         0.9         0.948         0.017         0.015         0.474         0.474         0.475         0.375         1.289           1.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0<	10/28/99	9.	80	5 0	Ţ α: - C	 0 +	<u> </u>	0.937	0.029	0.026	0.468	0.469	0.375	1.249	ACCEPT	
0.9         0.1         3.9         3.9         1.3         1.2         0.00         0.00         0.448         0.448         0.435         1.185           9.3         0.0         0.3         0.5         1.5         0.39         0.00	10/28/99	0.2	0.3	0.2	0.2	. 0	- 4 - 0	208.0	0.002	0.012	0.484	0.484	0.375	1.291	ACCEPT	
9         0.3         0.0	1/13/00	6.0	0.1	3.9	3.9	<del>1</del>	- 2	0.030	0.010	0.009	0.448	0.448	0.375	1,195	ACCEPT	
9         1,6         1,4         1,2         0.7         0.7         0.94         0.01         0.01         0.44         0.47 <td>10/29/99</td> <td>0.3</td> <td>0.0</td> <td>0.3</td> <td>0.5</td> <td>9.</td> <td>0.3</td> <td>0.950</td> <td>0.021</td> <td>900</td> <td>0.461</td> <td>0.460</td> <td>0.375</td> <td>1.228</td> <td>ACCEPT</td> <td></td>	10/29/99	0.3	0.0	0.3	0.5	9.	0.3	0.950	0.021	900	0.461	0.460	0.375	1.228	ACCEPT	
9         0.4	10/28/99	<del>6</del> .	4.	1.2	0.7	0.7	0.7	0.947	0.02	0.00	0.474	0.475	0.373	1.273	ACCEPT	
1,4         1,3         1,0         1,4         1,3         1,0         1,4         1,3         1,0         1,4         1,3         1,0         1,4         1,3         1,0         1,4         1,3         1,0         1,4         1,0 <td>10/29/99</td> <td>9.</td> <td>0.4</td> <td>0.1</td> <td>0.3</td> <td>1.0</td> <td>6.0</td> <td>0.948</td> <td>0.017</td> <td>0.015</td> <td>0.474</td> <td>0.473</td> <td>0.372</td> <td>1.273</td> <td>ACCEPT</td> <td></td>	10/29/99	9.	0.4	0.1	0.3	1.0	6.0	0.948	0.017	0.015	0.474	0.473	0.372	1.273	ACCEPT	
0.4         1.8         3.7         2.9         1.4         0.9         0.971         0.024         0.015         0.485         0.486         0.375         1.289           0.8         0.2         0.9         1.0         0.2         0.3         1.009         0.004         0.005         0.504         0.505         0.375         1.395           1.0         0.8         0.6         0.5         0.6         0.625         0.029         0.011         0.511         0.313         0.250         1.355         1.345           1.1         0.1         1.2         0.8         0.6         0.62         0.029         0.011         0.511         0.313         0.250         0.375         1.345           1.2         0.1         1.2         0.4         0.2         0.956         0.003         0.478         0.478         0.375         1.251           1.9         0.2         0.7         0.7         0.4         0.3         0.956         0.003         0.478         0.478         0.375         1.251           1.9         0.2         0.7         0.936         0.003         0.004         0.005         0.049         0.375         0.375         1.345 <t< td=""><td>10/2//99</td><td>4. 4</td><td><del>د</del> :</td><td>0.</td><td>4</td><td>0.7</td><td>9.0</td><td>1.042</td><td>0.013</td><td>0.015</td><td>0.521</td><td>0.524</td><td>2.5.0</td><td>407.7</td><td>ACCEPT</td><td></td></t<>	10/2//99	4. 4	<del>د</del> :	0.	4	0.7	9.0	1.042	0.013	0.015	0.521	0.524	2.5.0	407.7	ACCEPT	
2.3         1.2         0.5         0.7         1.0         0.024         0.056         0.504         0.505         0.375         1.345         1.35         1.3         1.2         0.5         0.7         2.7         1.0         0.625         0.029         0.011         0.312         0.313         0.256         0.375         1.356         1.256 <th< td=""><td>10/28/99</td><td>4.0</td><td><del></del> (</td><td>3.7</td><td>2.9</td><td>4.</td><td>6.0</td><td>0.971</td><td>0.024</td><td>0.015</td><td>0.485</td><td>0.486</td><td>0.375</td><td>1 205</td><td>ACCEPT</td><td></td></th<>	10/28/99	4.0	<del></del> (	3.7	2.9	4.	6.0	0.971	0.024	0.015	0.485	0.486	0.375	1 205	ACCEPT	
1.2         0.5         0.7         2.7         1.0         0.625         0.029         0.011         0.312         0.33         0.250         1.251         0.313         0.250         1.251         0.313         0.250         1.251         0.375         1.355         1.255	10/20/88	o c	7 .	ກ ເ ວັດ	O.	0.2	0.3	1.009	0.004	0.005	0.504	0.505	0.375	1345	ACCEPT	
1.3         0.0         0.0         0.011         0.511         0.511         0.511         0.515         1.35         1.36           1.6         1.5         1.7         1.4         2.5         0.7         0.956         0.001         0.011         0.469         0.375         1.251         1.351         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.252         0.003         0.004         0.011         0.048         0.048         0.037         0.002         0.520         0.375         1.252         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.251         1.252         0.04         0.036         0.007         0.037         0.007         0.048         0.047         0.007         0.048         0.037         0.007         0.048         0.047         0.048         0.037         0.007         0.048         0.048         0.037         0.007         0.048         0.048         0.037         0.007         0.048         0	10/29/99		7. 0	o. o	0.7	2.7	0	0.625	0.029	0.011	0.312	0.313	0.250	1.250	ACCEPT	
1.6         1.5         1.4         2.5         0.7         0.938         0.041         0.011         0.469         0.469         0.375         1.251           1.6         1.5         1.7         1.3         0.2         0.956         0.003         0.005         0.478         0.375         1.251           1.9         2.1         2.7         1.7         0.4         0.3         1.097         0.008         0.478         0.375         1.251           1.9         2.1         2.7         1.3         0.6         2.2         0.4         0.035         0.007         0.489         0.375         1.358           1.4         2.7         1.3         0.6         2.2         0.4         0.035         0.037         0.489         0.375         1.358           0.8         0.8         0.9         0.3         0.968         0.010         0.005         0.484         0.484         0.375         1.358           0.7         1.9         0.6         0.9         0.9         0.015         0.048         0.375         1.281           0.7         1.9         0.6         0.9         0.3         0.948         0.015         0.484         0.484 <t< td=""><td>1/13/00</td><td><u> -</u></td><td>5 6</td><td>o c</td><td>o .</td><td>0 0</td><td>9.6</td><td>1.022</td><td>0.009</td><td>0.011</td><td>0.511</td><td>0.511</td><td>0.375</td><td>1 363</td><td>ACCEDI</td><td></td></t<>	1/13/00	<u> -</u>	5 6	o c	o .	0 0	9.6	1.022	0.009	0.011	0.511	0.511	0.375	1 363	ACCEDI	
0.1         0.2         0.25         0.003         0.0478         0.478         0.375         1.275           1.9         0.2         0.7         1.7         0.4         0.3         1.097         0.008         0.006         0.548         0.549         0.375         1.275           1.9         1.1         1.2         1.7         1.5         0.1         1.094         0.002         0.520         0.529         0.375         1.275           0.8         0.13         0.6         2.2         0.4         0.986         0.007         0.050         0.493         0.493         0.493         0.493         0.493         0.493         0.493         0.493         0.375         1.291           0.7         1.5         1.3         1.0         0.6         0.9         0.975         0.010         0.005         0.444         0.375         1.291           0.7         1.1         1.1         0.2         0.2         1.1         0.9         0.957         0.018         0.015         0.444         0.375         1.276           1.1         1.2         1.9         1.8         0.7         0.8         0.957         0.018         0.015         0.444         0.375<	10/27/99	. <del>.</del>	- v	7 ,	4. 6	2.5	0.7	0.938	0.041	0.011	0.469	0.469	0.375	1.251	ACCEPT	
1.9         2.1         2.6         1.7         1.5         0.1         1.097         0.008         0.006         0.548         0.549         0.375         1.463           1.4         2.7         1.3         0.6         2.2         0.4         0.027         0.002         0.520         0.521         0.375         1.463           0.8         0.8         1.3         1.6         0.2         0.4         0.095         0.007         0.493         0.493         0.375         1.318           0.7         1.5         1.3         1.6         0.6         0.9         0.975         0.010         0.005         0.484         0.375         1.291           0.7         1.9         0.6         0.9         0.975         0.010         0.015         0.484         0.375         1.291           0.7         1.9         0.6         0.9         0.3         0.948         0.015         0.484         0.375         1.291           0.4         0.7         0.9         0.957         0.016         0.045         0.474         0.375         1.231           0.6         0.8         0.9         0.9         0.9         0.9         0.9         0.019 <t< td=""><td>10/28/99</td><td>0.0</td><td>2 0</td><td>- 6</td><td><u>.</u></td><td>7.0</td><td>0.2</td><td>0.956</td><td>0.003</td><td>0.003</td><td>0.478</td><td>0.478</td><td>0.375</td><td>1.275</td><td>ACCEPT</td><td></td></t<>	10/28/99	0.0	2 0	- 6	<u>.</u>	7.0	0.2	0.956	0.003	0.003	0.478	0.478	0.375	1.275	ACCEPT	
1,4         2,7         1,3         0.6         2,2         0.4         0.986         0.002         0.520         0.521         0.375         1.388           0,8         0,8         1,3         0.6         0.9         0.968         0.010         0.005         0.484         0.484         0.375         1.315           0,7         1,5         1,3         1,0         0.6         0.9         0.975         0.010         0.005         0.484         0.375         1.291           0,1         1,9         0.6         1,0         0.975         0.015         0.487         0.484         0.375         1.291           1,1         1,1         0.2         0.2         1,1         0.9         0.945         0.016         0.015         0.474         0.375         1.291           1,1         1,2         0.2         1,1         0.9         0.957         0.015         0.047         0.474         0.375         1.264           1,1         1,1         0.9         0.923         0.011         0.015         0.474         0.474         0.375         1.284           1,0         0.9         0.3         0.923         0.011         0.015         0.478	1/13/00	£.	2.1	26		5 <del>-</del>	n .	1.097	0.008	900'0	0.548	0.549	0.375	1.463	ACCEPT	
0.8         0.8         1.3         1.8         0.6         0.3         0.968         0.0107         0.493         0.493         0.375         1.315           0.7         1.5         1.3         1.0         0.6         0.3         0.968         0.010         0.005         0.484         0.375         1.291           0.7         1.9         0.6         0.9         0.366         0.015         0.015         0.484         0.375         1.291           1.1         1.2         0.6         0.9         0.366         0.015         0.015         0.484         0.375         1.291           1.1         1.2         0.2         0.1         0.9         0.346         0.015         0.474         0.375         1.291           1.0         0.9         0.3         0.947         0.015         0.015         0.478         0.479         0.375         1.276           0.6         0.8         0.7         0.1         0.923         0.011         0.002         0.461         0.462         0.375         1.231           0.6         0.8         0.7         0.1         0.934         0.005         0.002         0.461         0.462         0.375         1.245<	10/27/99	1.4	2.7	13	90		5 6	1.041	0.027	0.002	0.520	0.521	0.375	1.388	ACCEPT	
0.7         1.5         1.3         1.0         0.6         0.975         0.010         0.057         0.484         0.375         1.291           0.1         1.9         0.6         1.0         0.946         0.015         0.487         0.484         0.375         1.300           1.1         1.1         0.2         0.2         1.1         0.9         0.946         0.015         0.474         0.375         1.300           0.4         1.2         1.9         1.8         0.7         0.8         0.923         0.011         0.015         0.474         0.375         1.276           1.6         1.8         0.7         0.8         0.923         0.011         0.013         0.479         0.375         1.276           0.6         0.8         1.9         0.7         0.1         0.923         0.011         0.002         0.461         0.476         0.375         1.276           0.9         0.8         0.4         0.7         0.941         0.034         0.026         0.467         0.467         0.467         0.467         0.477         0.477         0.474         0.375         1.246           0.2         0.3         1.4         0.1	10/28/99	0.8	0.8	1.3	60.	9.0	0.0	0.900	0.00	0.00	0.493	0.493	0.375	1.315	ACCEPT	
0.1         1.9         0.6         1.0         0.9         0.3         0.946         0.015         0.05         0.476	1/13/00	0.7	5	1.3	1.0	9.0	6.0	0.975	0.010	0.00	2 6 6 6	484.0	0.3/5	1.291	ACCEPT	
1.1 1.1 0.2 0.2 1.1 0.9 0.957 0.018 0.015 0.017 0.017 0.017 1.264 0.017	10/29/99	7	6	9.0	1.0	6.0	0.3	0.948	0.015	5000	70.40	20.408	0.675	1.300	ACCEPT	
0.4         1.2         1.9         1.8         0.7         0.8         0.923         0.011         0.013         0.452         0.451         0.752         1.276           1.6         1.8         0.5         0.4         0.7         0.1         0.923         0.011         0.002         0.461         0.375         1.231           0.9         0.8         1.9         1.6         0.3         0.1         0.934         0.005         0.002         0.467         0.467         0.375         1.231           0.9         0.8         0.4         0.5         2.1         1.6         0.941         0.034         0.026         0.467         0.467         0.375         1.245           0.1         0.9         0.9         0.005         0.006         0.467         0.467         0.375         1.245           0.2         0.3         1.4         0.1         0.4         0.918         0.002         0.006         0.459         0.459         0.375         1.225           0.1         1.7         0.2         0.5         0.7         0.938         0.006         0.011         0.469         0.3469         0.375         1.269           0.1         1.9	10/28/99	Ξ:	7	0.2	0.2	1.1	6.0	0.957	0.018	0.000	0.478	4 7 7 7	0.375	1.264	ACCEPT	
1.6         1.8         0.5         0.4         0.7         0.1         0.923         0.011         0.002         0.467         0.51         1.231           0.6         0.8         1.9         1.6         0.3         0.1         0.934         0.005         0.002         0.467         0.467         0.375         1.231           0.9         0.8         0.4         0.5         2.1         1.6         0.941         0.034         0.026         0.470         0.471         0.375         1.245           0.2         2.4         0.3         1.4         0.1         0.4         0.918,         0.002         0.006         0.459         0.471         0.375         1.255           0.1         1.7         0.2         0.6         0.918,         0.002         0.006         0.459         0.459         0.375         1.255           0.1         1.7         0.2         0.6         0.017         0.017         0.049         0.049         0.049         0.049         0.037         1.289           0.8         1.9         2.5         1.8         1.3         1.5         0.970         0.022         0.045         0.474         0.374         1.289	10/28/99	4 0	1.2	9.	- 9.	0.7	9.0	0.923	0.011	0.013	0.462	0.451	0.00	1.276	ACCEPT	
0.9         0.0         0.0         0.467         0.467         0.375         1.245           0.9         0.8         0.4         0.5         2.1         1.6         0.941         0.034         0.026         0.470         0.471         0.375         1.245           1.1         0.6         0.3         1.4         0.1         0.4         0.918         0.002         0.006         0.459         0.471         0.375         1.255           0.2         2.4         0.3         1.2         0.5         0.7         0.938         0.006         0.011         0.469         0.375         1.251           2.2         2.8         0.3         0.5         0.2         0.4         0.949         0.001         0.017         0.491         0.491         0.375         1.289           0.8         1.9         2.5         1.8         1.3         1.5         0.970         0.007         0.475         0.474         0.374         1.289           0.8         1.9         2.9         1.4         0.921         0.047         0.023         0.485         0.372         1.238           0.4         1.5         0.9         1.9         2.9         1.4 <t< td=""><td>10/28/88</td><td>9.0</td><td>eo e</td><td>0.5</td><td>9,0</td><td>0.7</td><td>0.1</td><td>0.923</td><td>0.011</td><td>0.002</td><td>0.461</td><td>0.462</td><td>0.375</td><td>1 231</td><td>ACCEPT</td><td></td></t<>	10/28/88	9.0	eo e	0.5	9,0	0.7	0.1	0.923	0.011	0.002	0.461	0.462	0.375	1 231	ACCEPT	
0.5         0.4         0.5         2.1         1.6         0.941         0.034         0.026         0.470         0.471         0.375         1.255           0.2         2.4         0.3         1.4         0.1         0.4         0.918,         0.002         0.006         0.459         0.471         0.375         1.255           0.1         1.7         0.2         0.8         1         1         0.982         0.017         0.017         0.469         0.375         1.251           2.2         2.8         0.3         0.5         0.2         0.4         0.949         0.003         0.007         0.474         0.375         1.289           0.8         1.9         2.5         1.8         1.3         1.5         0.970         0.022         0.025         0.485         0.374         1.289           0.4         1.5         0.970         0.022         0.025         0.485         0.372         1.382           0.3         0.4         1.9         2.9         1.4         0.921         0.047         0.023         0.485         0.372         1.238	10/20/00	0 0	o o	57 ·	<b>6</b>	0.3	0,1	0.934	0.005	0.002	0.467	0.467	0.375	1 245	ACCEPT	
0.2     2.4     0.3     1.4     0.1     0.4     0.918, 0.002     0.005     0.459     0.459     0.374     1.227       0.1     1.7     0.3     1.2     0.03     0.07     0.938     0.006     0.011     0.469     0.375     1.251       2.2     2.8     0.3     0.5     0.2     0.4     0.949     0.003     0.007     0.474     0.375     1.269       0.8     1.9     2.5     1.8     1.3     1.5     0.970     0.022     0.025     0.485     0.351     1.382       0.3     0.4     1.9     2.9     1.4     0.921     0.047     0.023     0.461     0.46     0.372     1.238	11/4/99	n +	D (	D 6	0.5	- 5	9.	0.941	0.034	0.026	0.470	0.471	0.375	1 255	ACCEPT	
0.1 1.7 0.2 0.8 0.7 0.938 0.009 0.011 0.469 0.375 1.251 0.1 0.1 0.1 0.3 0.469 0.375 1.251 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	10/29/99		, c	? 6	 4 C	- L	4, 1	0.918	0.002	900'0	0.459	0.459	0.374	1 227	ACCEPT	
2.2 2.8 0.3 0.5 0.2 0.4 0.949 0.017 0.017 0.491 0.491 0.375 1.309 0.8 1.9 0.8 1.9 0.5 0.2 0.4 0.949 0.003 0.007 0.475 0.474 0.374 1.269 0.4 1.5 0.9 1.9 2.9 1.4 0.921 0.047 0.023 0.485 0.485 0.351 1.382 0.3 0.4 1.1 0.6 1.2 1.4 0.921 0.047 0.023 0.461 0.46 0.372 1.238	10/29/99	10	· -	9 6	7. a		). O	0.938	0.008	0.011	0.469	0.469	0.375	1.251	ACCEPT	
0.8     1.9     2.5     1.8     1.3     1.5     0.970     0.022     0.025     0.485     0.485     0.351     1.269       0.4     1.5     0.9     1.9     2.9     1.4     0.921     0.025     0.485     0.485     0.351     1.382       0.3     0.4     1.1     0.6     1.2     1.4     0.921     0.047     0.023     0.461     0.46     0.372     1.238	10/29/99	2.2	. 2	9.0	9 6	- 6	- 3	0.982	0.017	0.017	0.491	0.491	0.375	1.309	ACCEPT	
0.4 1.5 0.9 1.9 2.9 1.4 0.921 0.047 0.023 0.485 0.485 0.351 1.382 0.3 0.4 11 0.6 12 1.20	10/29/99			2.5		4 6	4 R	0.949	0.003	0.007	0.475	0.474	0.374	1.269	ACCEPT	
0.3 0.4 11 0.6 12 1.238 0.447 0.023 0.461 0.46 0.372 1.238	10/29/99		1.5	6.0	9 6	. c	. t	0.970	0.022	0.025	0.485	0.485	0.351	1.382	ACCEPT	
	10/29/99	60				9:	<u>*</u>	0.921	C.04/	0 0 3	0.461	270	0 0 10			

# - M -1 = Pitot/Thermo. Combination

# - 1 = Pitot Alone

#-X-1=Full Probe Assembly #-1-1=Inkonel

# - T - 1 = Thermo, Alone

Ξ..

#### Dry Gas Meter and Orifice Meter

Dry gas meters and orifices are calibrated in accordance with Section 3.3.2 of the QA Handbook. This procedure involves direct comparison of the dry gas meter to a reference dry test meter. The reference dry test meter is routinely calibrated using a liquid displacement technique. 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  $\pm$  0.02 and  $\pm$  0.20 from average, respectively.

#### Digital Indicators for Thermocouple Readout

A digital indicator is calibrated by feeding a series of millivolt signals to the input and comparing the indicator reading with the reading the signal should have generated. Errors did not exceed 0.5 percent (%) when the temperatures were expressed in degrees Rankine. Calibration data are included in the following Thermocouple Digital Indicator Calibration Data Sheet(s).

#### **Dry Gas Thermocouples**

The dry gas thermocouples are calibrated by comparing them with an ASTM-3 thermometer at approximately 32°F, ambient temperature, and a higher temperature between approximately 100°F and 200°F. The thermocouples agreed within 5°F of the reference thermometer.

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Meter Box No.: 2

#### Dry Gas Orifice Meter

Pb, in, Hg	29.36	RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
рн	Della H	0.50	0.75	1.00	1.50	2.00	4.00
in Hg	Vacuum	10	10	10	10	10	10
Vw,	Initial RTM	956.527	966.320	974.057	985.406	996.985	1009.901
Vw <sub>2</sub>	Final RTM	965,863	973,878	985,114	996.606	#######	1022.371
Vd,	Initial DGM	59.856	69,667	77,458	88.899	100.602	113.680
Vd <sub>2</sub>	Final DGM	69.216	77.274	88.604	100.217	112.825	126.334
Tw	Ave. Temp RTM *	75	76	78	78	79	79
Td	Ave. Temp DGM <sup>b</sup>	78	81	84	87	88	89
	Time (min.)	22.3	15.0	19.0	16.0	15.0	11.0
Vw₂ - Vw₁	Net Volume RTM	9.336	7.558	11.057	11.200	12.071	12.470
Vd <sub>2</sub> - Vd <sub>1</sub>	Net Volume DGM	9.360	7.607	11.146	11,318	12.223	12.654
	Υ	1.002	1,001	1.001	1.002	0.999	0.994
	dH@	1.634	1.694	1.696	1.749	1.775	1.778
AVERAGE Y	0.988	(Reference met	er correctio	n factor of	0.988)		
Average 1	r Range =		0.968	то	1.008	ACC	EPT
AVERAGE dH	1.721						
Average	dH@ Range ≖		1.521	OT	1.921	ACC	EPT
			ulations	··			
!	Y = [Vw *Pb*(	Td + 460)) / (Vd		Hd / 13.6))	*(Tw +46	D))	
	dH@ = 0.0317	* dHd / (Pb (Td	+ 460)) * (	((Tw +460)	*1) / Vw)*	2	

#### Digital Indicator for Thermocouple Readout

			DIGITAL		
		EQUIVALENT		DIFFERENCE,	
NO.	SIGINAL	TEMP, °F	TEMP	%	
			READING, °F		
1	-0.692	0	-1	0.2	
2	1.520	100	100	0.0	
3	3.819	200	201	0.2	
4	6.092	300	299	0.1	
5	8.314	400	399	0.1	
6	10.560	500	501	0.1	
7	22.251	1000	1001	0,1	
8	29.315	1300	1300	0.0	
9	36.166	1600	1601	0,0	
10	42.732	1900	1899	0.0	
		less than or ed		mp., °R) ° ( 100%)	
		( Equivaler	nt Temp., "R)		
Where °R = °I	F + 460				ACCEPT

#### Dry Gas Thermocouples

Reference	Source*	Reference	Thermocouple	Temperature
point	(Specify)	Thermometer	Potentiometer	Difference.
number		Temperature,*F	Temperature,*F	<b>⁴</b> F
Inlet		<u></u>	[	
1	Ambient Air	73	74	1
2	Cold Bath	42	43	1
3	Hot Bath	139	138	1
Outlet	<del> </del>		<u> </u>	<del></del> -
1	Ambient Air	73	73	0
2	Cold Bath	42	43	1
3	Hot Bath	138	137	1
	<u> </u>		L	<u> </u>
Type of calib	oration used.			
Allowable to	erance ±5°F		'	ACCEPT

Calibrated By:

da

1

4700 Duke Drive, Suite 150 Mason, Ohio 45040 Phone: (513)398-2556 Fax: (513)398-3342 www.pes.com

Box No.:	MB -2	Bar. Press.(Ps):	29.23	in. Hg
Date:	MAY 25,2000	Pretest Gamma:	0.988	
Calibrated By:	G GAY	Pretest dH@:	1.721	
Plant:	KES			
Eline Agricia	ton of mental processing	RUN I	RUN 2	RUN 3
DH	Delta H	2.00	2.00	2.00
in Hg	Vaccum	5.00	5.00	5.00
$Vw_1$	Initial RTM	803.015	815.118	827.233
Vw <sub>2</sub>	Final RTM	815.118	827.233	839.345
$Vd_1$	Initial DGM	673.120	685.278	697.516
$Vd_2$	Final DGM	685.278	697.516	709.789
Tw	Ave. Temp RTM °F	76.0	76.0	77.0
Td	Ave. Temp DGM °F	82.0	84.0	86.0
t	Time (min.)	15.0	15.0	15.0
Vw <sub>2</sub> - Vw <sub>1</sub>	Net Volume RTM	12.103	12.115	12.112
Vd <sub>2</sub> - Vd <sub>1</sub>	Net Volume DGM	12.158	12.238	12.273
	Y	1.002	1.000	0.998
	dH@	1.766	1.756	1.757
AVERAGE Y	=	1.000		
% Difference fr	% Difference from Yearly Y =		ACCE	PT
AVERAGE dH	<b>@ =</b>	1.760		
Calculations				
$Y = (Vw \bullet Pb$	* (Td + 460)) / (Vd * (	Pb + (dHd / 13.6)) * (1	w +460))	
311@ n.on.s	# 1777 / 4791 ATEL 1 440	33 <b>35</b> 44 677 - 4 44 673 <b>35</b> 41		

 $dH@ = 0.0317 \cdot dHd / (Pb (Td + 460)) \cdot (((Tw + 460) \cdot time) / Vw)^2$ 

#### **Stack Thermocouples**

Each thermocouple is calibrated by comparing it with an ASTM-3F thermometer at approximately 32°F, ambient temperature, 212°F, and 500°F. The thermocouple reads within 1.5 percent (%) of the reference thermometer throughout the entire range when expressed in degrees Rankine. The thermocouples may be checked at ambient temperature at the test site to verify the calibration. Calibration data are included in the following Thermocouple Calibration Data Sheet(s).

2000 Yearly Calibrations

STACK THERMOCOUPLES

7209 East Kemper Rd.
Cincinnatl, OH 45249
513.489.6611
513.489.6619 Fax
www.pes.com

		<del></del>	т-		<del></del>		<del></del>		<del></del>		<u> </u>				
Accept/Reject	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT	ACCEPT
Diff., %	0.00	0.00	0.00	00:00	0.00	00.0	0.00	0.23	0.00	0.00	0.00	0.10	1.45	0.00	00.0
Hot Oil	451	410	418	423	456	410	415	393	452	423	455	500	438	373	411
Diff., %	00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Hot Bath	212	210	165	201	208	192	212	214	212	207	210	211	208	199	192
Diff., %	0.00	00.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	00:00	0.00	0.20	0.00	09.0	0.00
Cold Bath	46 46	42	42	.35	42	36	42	42	43	46	38	42	43	38	58 58
% '∵#IQ	0.00	00:0	0.00	1.14	0.00	0.00	00.0	0.19	00.0	0.00	0.00	0.00	0.19	0.00	0.00
Ambient Air	92	75	75 75	65	74	75	75	77	77	75	76	77	64	74	74
Date Calibrated	1/13/00	1/27/00	1/27/00	11/3/99	11/2/99	1/13/00	1/27/00	10/29/99	10/29/99	1/13/00	1/13/00	10/29/99	11/3/99	11/2/99	11/3/99
Therm.	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot	Reference Pitot
Thermo. ID	1-T-1	2-M-1	2-M-2	3-M-1	3-M-2	3-M-3	3-M-4	3-T-1	3-T-2	3-T-3	3-T-4	3-X-1	3-X-2	4-M-1	4-M-2

#### **Impinger Thermocouples**

The impinger thermocouples are checked in a similar manner at approximately 32°F and ambient temperature, and they agreed within 2°F. The thermocouples may be checked at ambient temperature prior to the test series to verify calibration. Calibration data are included in the following Impinger Thermocouple Calibration Data Sheet(s).

7209 E. Kemper Rd. Cincinnati, OH 45249 Phone: 513.489.6611

Fax: 513.489.6619

# TEMPERATURE SENSOR CALIBRATION DATA FORM FOR SAMPLEHEADS

DATE:

13-Jan-00

				13-Jan-00	DATE: ,	
7	Temperature	Thermocouple	Reference	Source	Reference	
1	Difference, <sup>b</sup>	Potentiometer	Thermometer	(Specify)	point	
1	°F	Temperature,°F	Temperature,°F		number	
					Sample Head No. 1	
ACCEPT	0	75	75	Ambient Air	1	
}	0	36	36	Cold Bath	2	
					Sample Head No. 2	
ACCEPT	0	76	76	Ambient Air	1	
1	0	36	36	Cold Bath	2	
				,	Sample Head No. 3	
ACCEPT	0	76	76	Ambient Air	1 [	
1	· 0	38	38	Cold Bath	2	
					Sample Head No. 4	
ACCEPT	0	76	. 76	Ambient Air	1	
	0	36	36 -	Cold Bath	2	
				:	Sample Head No. 5	
ACCEPT	2	78	76	Ambient Air	1	
	0	_ 36	36	Cold Bath	2	
					Sample Head No. 6	
ACCEPT	0	73	73	Ambient Air	1	
]	0	35	35	Cold Bath	2	
					Sample Head No. 7	
ACCEPT	0	74	74	Ambient Air	1	
[ ]	0	35	35	Cold Bath	2	
					Sample Head No. 8	
ACCEPT	0	74	74	Ambient Air	1	
[	0	38	38	Cold Bath	22	

<sup>a</sup> Type	of	calibration	used
1,700	v	Cambiation	usçu,

Calibrated By:

ah

<sup>&</sup>lt;sup>b</sup>Allowable tolerance <u>+</u>2°F

Permit Number: V-98-031

2 FAFS+ LMF 20123

# SECTION B - EMISSION POINTS, EMISS REGULATIONS, AND OPERATING CONDI

**ABLE** 

02 (01) - Electric arc furnaces(EAFs), Ladle metallur Dust handling equipment ociated

Description:

The two Lectromelt electric arc furnaces A and B have maximum capacities of 34 tons/hr, each. The emissions are vented by direct shell evacuation through side draft hoods and overhead canopy hood system to the baghouse. This emission point covers emissions due to charging, melting, and tapping. The (6) six oxy-fuel burners operate on natural gas and oxygen and are capable of firing at up to 10 million Btu/hr, each. The LMF is a steel purification and refining process. The emissions from the LMF are captured by a hooding system and vented to the same Harsell baghouse. The LMF has the capacity to refine 68 tons per hour of molten steel. The emissions from the associated dust handling equipment are also vented to the same Harsell baghouse.

Construction commenced:

EAFs - 1981;

LMF- June, 1995; Baghouse - 1976

#### APPLICABLE REGULATIONS:

401 KAR 59:570 - Standards of performance for steel plants: electric arc furnaces constructed after October 21, 1974, and on or before August 17, 1983, is governed by 40 CFR 60, Subpart ΛΛ.

#### STATE-ORIGIN APPLICABLE REGULATIONS:

401 KAR 63:021 - Existing sources emitting toxic air pollutants.

#### 1. Operating Limitations:

- I- The total steel production from both furnaces shall not exceed 403,200 tons/yr, with each furnace producing no more than 34 tons/hr. (Self imposed to preclude the applicability of 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas)
- 2- The control system fan amperes shall fall within the same range of values recorded during the latest performance test (See testing requirements). However, the permittee have the option of installing, calibrating, and maintaining a monitoring device that continuously records the volumetric flow rate at the baghouse inlet. A shop opacity compliance demonstration shall be performed to establish volumetric flow rate and damper positions. [60.274 (b) and (c)]
- 3- The static pressure in the free space inside the EAFs shall not exceed the levels established during the latest performance test. The owner or operator shall install, calibrate and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15-minute integrated averages. The pressure monitoring device shall have an accuracy of plus or minus 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions (See testing requirements). However, the permittee have the option to conduct daily visual emissions observations as an alternative to furnace static pressure monitoring. Under the alternative, the permittee shall perform shop opacity observations once per day during a meltdown and refining period. [60.274 (b) and (c)]

Permit Number: <u>V-98-031</u> Page: <u>1</u> of <u>23</u>

#### **SECTION A - PERMIT AUTHORIZATION**

Pursuant to a duly submitted application which was determined to be complete on February 14, 1997, the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in the Regulation 401 KAR 50:035, Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.