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MAR 5 1996
SAN JOAQUIN VALLEY
UNIFIED A.P.C.D.
NO. REGION

√ NORTHERN REGION
__ CENTRAL REGION
__ SOUTHERN REGION

ERC/PUBLIC NOTICE CHECK LIST

PROJECT# 950151 MODEM FILE NAME: GALLOGLA.FIN

REQST. COMPL.

__ __ ERC TRANSFER OF PREVIOUSLY BANKED CREDITS
__ __ ERC PRELIMINARY PUBLIC NOTICE
√ __ ERC FINAL PUBLIC NOTICE
__ __ NSR/CEQA PRELIMINARY PUBLIC NOTICE
__ __ NSR/CEQA FINAL PUBLIC NOTICE

ENCLOSED DOCUMENTS REQUIRE:

√ Enter Correct Date, Print All Documents from Modemed File and Obtain Directors Signature

√ Send *FINAL* Notice Letters to CARB, EPA and Applicant; Including the Following Attachments:
__ Application Evaluation
√ Other Copies of Public Notice and Certificate to EPA & CARB, copy of Public Notice to applicant

√ Send *FINAL* Public Notice for Publication The Modesto Bee

√ Send Signed Copies of *FINAL* Notice Letters to Regional Office Attn: Anthony Mendes

√ Director's Signature and District Seal Embossed on ERC Certificates

√ Director's Signature on Cover Letter and Mail Cover Letter & ERC Certificates by Certified Mail to:
√ Applicant: P.O. Box 1230, Modesto, CA. - 95353
__ Applicant and Additional Addressees (see cover letters)
__ Other_____

√ Send Copies of Signed and Seal Embossed ERC Certificates and Signed cover letter to Regional Office Attn: Anthony Mendes

__ __ Other Special Instructions (please specify)_____

Date Completed _____/By_____

Date Added to Seyed Directory: C:\AW directory on 2/23/96

Upon Completion FAX to Regional Office Attn: Steve Howie

San Joaquin Valley
Unified Air Pollution Control District

March 4, 1996

Doug Moore
Gallo Glass Co.
P.O. Box 1230
Modesto, CA 95353

RE: Notice of Final Action - Emission Reduction Credit Certificate
Project # 950151

Dear Mr. Moore:

The District has made its final decision to issue an Emission Reduction Credit Certificate to Gallo Glass Company for the voluntary retrofit of furnace #4 with oxy-fuel burners located at 605 S. Santa Cruz Wy., Modesto, California. Certificate # N-107-2 is enclosed.

Also enclosed is a copy of the Notice of Final Action which will be published approximately three days from the date of this letter. All relevant comments received within the 30-day public comment period have been addressed and incorporated into the application review.

Thank you for your cooperation in this matter. Should you have any questions, please contact Anthony Mendes, Permit Services Manager - Northern Region, at (209) 545-7000.

Sincerely,

Seyed Sadredin
Director of Permit Services

SH\sa
Enclosures
Certified Mail # Z 198 116 022
c: Anthony Mendes, Permit Services Manager - Northern Region

David L. Crow
Executive Director/Air Pollution Control Officer

1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 • (209) 497-1000 • FAX (209) 233-2057

Northern Region
4230 Kiernan Avenue, Suite 130 • Modesto, CA 95356
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Central Region
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(209) 497-1000 • Fax (209) 233-2057

Southern Region
2700 M Street, Suite 275 • Bakersfield, CA 93301
(805) 861-3682 • Fax (805) 861-2060

San Joaquin Valley
Unified Air Pollution Control District

March 4, 1996

Raymond Menebroker, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

RE: Notice of Final Action - Emission Reduction Credit Certificate
Project # 950151

Dear Mr. Menebroker:

The District has made its final decision to issue an Emission Reduction Credit Certificate to Gallo Glass Company for the voluntary retrofit of furnace #4 with oxy-fuel burners located at 605 S. Santa Cruz Way, Modesto, CA. A copy of Certificate # N-107-2 is enclosed.

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San Joaquin Valley
Unified Air Pollution Control District

March 4, 1996

Ken Bigos, Chief
New Source Section
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

RE: Notice of Final Action - Emission Reduction Credit Certificate
Project # 950151

Dear Mr. Bigos:

The District has made its final decision to issue an Emission Reduction Credit Certificate to Gallo Glass Company for the voluntary retrofit of furnace #4 with oxy-fuel burners located at 605 S. Santa Cruz Way, Modesto, CA. A copy of Certificate # N-107-2 is enclosed.

Also enclosed is a copy of the Notice of Final Action which will be published approximately three days from the date of this letter. All relevant comments received within the 30-day public comment period have been addressed and incorporated into the application review.

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Seyed Sadredin
Director of Permit Services

SH\sa
Enclosures
c: Anthony Mendes, Permit Services Manager - Northern Region

David L. Crow
Executive Director/Air Pollution Control Officer

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(805) 861-3682 • Fax (805) 861-2060

The Modesto Bee

NOTICE OF FINAL ACTION
FOR THE ISSUANCE OF AN
EMISSION REDUCTION CREDIT CERTIFICATE

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District has issued an Emission Reduction Credit Certificate to Gallo Glass Company for the voluntary retrofit of furnace # 4 with oxy-fuel burners located at 605 S. Santa Cruz Way, Modesto, CA in the amount of 326,978 pounds of NOx per year.

The analysis of the regulatory basis for project # 950151, and of the resulting effect on ambient air quality, is available for public inspection at SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, NORTHERN REGION, 4230 KIERNAN AVE, STE # 130, MODESTO, CA 95356 (209) 545-7000.

San Joaquin Valley
Unified Air Pollution Control District

Northern Regional Office * 4230 Kiernan Ave., Suite 130 * Modesto, CA 95356

Emission Reduction Credit Certificate
N-107-2

Issued To: Gallo Glass Company
Issue Date: March 4, 1996

Location of Reduction: 605 S. Santa Cruz Way
Modesto, CA

For NOx Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
89,358 lbs	66,849 lbs	83,009 lbs	87,762 lbs

[ ] Conditions Attached

Method Of Reduction
[ ] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Unit
[X] Other: Installation of oxy-fuel burners on furnace # 4

David L. Crow, APCO

Seyed Sadredin
Director of Permit Services

3/4/96
Date

✓ NORTHERN REGION
___ CENTRAL REGION
___ SOUTHERN REGION

ERC/PUBLIC NOTICE CHECK LIST

PROJECT# 950151 MODEM FILE NAME: GALLOGL4.ERC

REQST.	COMPL.	
___	___	ERC TRANSFER OF PREVIOUSLY BANKED CREDITS
✓	___	ERC PRELIMINARY PUBLIC NOTICE
___	___	ERC FINAL PUBLIC NOTICE
___	___	NSR/CEQA PRELIMINARY PUBLIC NOTICE
___	___	NSR/CEQA FINAL PUBLIC NOTICE

ENCLOSED DOCUMENTS REQUIRE:

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✓ SA Send ***PRELIMINARY*** Notice Letters to CARB, EPA and Applicant; Including the Following Attachments:
- ✓ Application Evaluation
- ✓ Other Public Notice

✓ SA Send ***PRELIMINARY*** Public Notice for Publication to The Modesto Bee (NEWSPAPER)

✓ SA Send Signed Copies of ***PRELIMINARY*** Notice Letters to Regional Office Attn: Anthony Mendes

___ ___ Director's Signature and District Seal Embossed on ERC Certificates

___ ___ Director's Signature on Cover Letter and Mail Cover Letter & ERC Certificates by Certified Mail to:
- ___ Applicant: *Applicant Address*
- ___ Applicant and Additional Addressees (see cover letters)
- ___ Other

___ ___ Send Copies of Signed and Seal Embossed ERC Certificates and Signed cover letter to Regional Office Attn:

___ ___ Other Special Instructions (please specify)

Date Completed _____/By_____

Date Added to Seyed Directory: F:\NOTICE directory on 8/11/95

Upon Completion FAX to Regional Office Attn: ~~Steve Howie~~

8/24/95 SA

DECLARATION OF PUBLICATION

(C.C.P. S2015.5)

COUNTY OF STANISLAUS
STATE OF CALIFORNIA

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the printer and principal clerk of the publisher of **THE MODESTO BEE**, printed and published in the City of **MODESTO**, County of **STANISLAUS**, State of California, daily, for which said newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of **STANISLAUS**, State of California, under the date of **December 6, 1994**, **Action No. 311306**; that the notice of which the annexed is a printed copy, has been published in each issue thereof and not in any supplement thereof on the following dates, to wit:

August 28, 1995

I certify (or declare) under penalty of perjury that the foregoing is true and correct and that this declaration was executed at **MODESTO**, California,

August 28, 1995
(Date)

(Signature)

NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF AN EMISSION REDUCTION CREDIT CERTIFICATE

NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer solicits public comment on the proposed issuance of an Emission Reduction Credit Certificate for NOx to Gallo Glass Co. for the voluntary retrofit of glass furnace #4 with oxy-fuel burners located at 605 S. Santa Cruz Way, Modesto, CA. The credit amount is as follows: NOx-326,978 lbs/per year.

The analysis of the regulatory basis for this project, and of the resulting effect on ambient air quality, is available for public inspection at the District Office at the address below. Written comments on Project #950151 must be submitted within 30days of the date of publication of this notice. Submit all comments in writing to the attention of Steven Howle, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, NORTHERN REGION, 4230 KIERNAN AVE., STE #130, MODESTO, CA. 95356

August 28, 1995

San Joaquin Valley
Unified Air Pollution Control District

COPY

August 24, 1995

Doug Moore
Gallo Glass Company
P.O. Box 1230
Modesto, CA 95353

Re: Preliminary Public Notice - Emission Reduction Credit Certificate
Project # 950151

Dear Mr. Moore:

Enclosed, for your review and comment, is the analysis of Gallo Glass Co.'s request for emission reduction credits for the voluntary retrofit of glass furnace # 4 with oxy-fuel burners at 605 S. Santa Cruz Way, Modesto, CA.

Also enclosed is a copy of the Preliminary Public Notice to be published approximately three days from the date of this letter. This will start the 30-day public comment period.

Please submit your written comments on our analysis and draft documents as soon as possible to provide ample time for our review and consideration.

Thank you for your cooperation in this matter. Should you have any questions please telephone Steve Howie of Permit Services at (209) 545-7000.

Sincerely,

Seyed Sadredin
Director of Permit Services

SH/sa
Enclosures
c: Anthony Mendes, Permit Services Manager - Northern Region

San Joaquin Valley
Unified Air Pollution Control District

August 24, 1995

Raymond Menebroker, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95814-2815

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Project # 950151

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Seyed Sadredin
Director of Permit Services

SS/sa
Enclosures
c: Anthony Mendes, Permit Services Manager - Northern Region

David L. Crow
Executive Director/Air Pollution Control Officer
1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 • (209) 497-1000 • FAX (209) 233-2057

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San Joaquin Valley
Unified Air Pollution Control District

August 24, 1995

Ken Bigos, Chief
Stationary Source Branch
Air and Toxics Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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Project # 950151

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MODESTO BEE

NOTICE OF PRELIMINARY DECISION FOR THE PROPOSED ISSUANCE OF AN EMISSION REDUCTION CREDIT CERTIFICATE

NOTICE IS HEREBY GIVEN that the Air Pollution Control Officer solicits public comment on the proposed issuance of an Emission Reduction Credit Certificate for NOx to Gallo Glass Co. for the voluntary retrofit of glass furnace # 4 with oxy-fuel burners located at 605 S. Santa Cruz Way, Modesto, CA. The credit amount is as follows: NOx = 326,978 lbs/per year.

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ERC APPLICATION EVALUATION
Project # 950151

Engineer: Steve Howie
Date: August 24, 1995

Application prepared for: Gallo Glass Company
P.O. Box 1230
Modesto, CA., 95353

Contact: Doug Moore
Phone: (209) 579-3411

Application received: March 29, 1995
Application deemed complete: March 30, 1995

I. SUMMARY:

Gallo Glass Co. is a company that makes wine bottles for the Gallo Wineries. The company incorporates five glass furnaces to melt the raw materials into glass. The glass is poured into molds to create the finished product. Gallo Glass has incorporated the latest control technology to reduce the levels of NOx emissions from each of the furnaces. All of the furnaces will be retrofitted with an oxygen gas intake system. Furnace # 4 has been retrofitted and is in full operation. The emission reductions resulting from the retrofit of furnace # 4 are to be banked at the request of Gallo Glass Co. The amount of emission reduction credits that will be granted by the District are:

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	89,358	66,849	83,009	87,762

The Emission Reduction Certificate filing numbers are:

N-107-2 ☞ NOx reduction credits

II. APPLICABLE RULES:

Rule 2201: New and Modified Stationary Source Review Rule
Rule 2301: Emission Banking Credit

III. LOCATION OF REDUCTIONS:

605 S. Santa Cruz Way
Modesto, CA

IV. METHOD OF GENERATING REDUCTIONS:

A. Equipment description:

Glass Furnace # 4

1. Burner Specifications

   Manufacturer: Maxon
   Heat Input: 12 each @ 7.5 MMBTU/hr for a total of 90 MMBTU/hr
   Fuel: Natural Gas/pure Oxygen mixture

2. One Oxygen storage tank and vaporization system with associated controls (Operated by Praxair).

3. Combustion control and monitoring system

B. Method of reductions:

The reductions are from the permanent retrofit of furnace # 4 with a series of 12 natural gas-oxygen burners. The oxygen is supplied by a cryogenic unit on site. This will reduce the total NOx output when fired on natural gas.

V. EMISSIONS CALCULATIONS

A. Assumptions and Emission Factors

1. **Determining the Actual Emissions Reductions (AER)**
   Calculation procedures for determining AER:

   Actual emissions reduction due to the installation of a control device or due to implementation of a more efficient process or material is as follows:

   $$AER = HAE * CE$$

   Where

   HAE = Historical Actual Emissions of the unit prior to modification (REF: District's Rule 2201 Sec 6.2.1)

   CE = Control efficiency of the proposed air pollution control technology. Reductions due to lowering of throughput rates or operating hours shall not be considered in determining control efficiency.(REF: District's Rule 2201 Sec 6.2.4).

   HAE is defined as the Historical Actual Emissions having actually occurred based on source tests or calculated using actual fuel consumption or process weight, recognized emissions factors or other data approved by the Control

V. EMISSIONS CALCULATIONS: (Continued)

Officer which most accurately represent the emissions during the baseline period. (REF: District's Rule 2201 Sec.6.2.1)

Adding the natural gas-oxygen burners will increase the control efficiency for NOx when fired on natural gas.

2. Emission factors

Pre-modification operation of the furnace was accomplished by using preheated ambient air mixed with the natural gas and combusted. This operation requires that the furnace have two refractories (north and south) that can store heat from the exhaust gases. While one of the refractories is heated by the exhaust gases the other refractory is used to preheat the incoming combustion air. When the refractory used to preheat the incoming air is cooled below the required temperature needed to properly preheat the incoming air, the combustion process is switched to the freshly heated refractory side of the furnace to receive warm combustion air. The exhaust air is then used to heat the cooled refractory again. The process of switching the combustion process from the north to the south part of the furnace and back again is typical of any glass melting furnace that uses ambient air as part of the combustion process. The exhaust gases will only exit from the south or the north stacks, but not simultaneously, therefore, the pre-modification emission factors are based on the test results of either the north or south stack but not both combined (see figure 1).

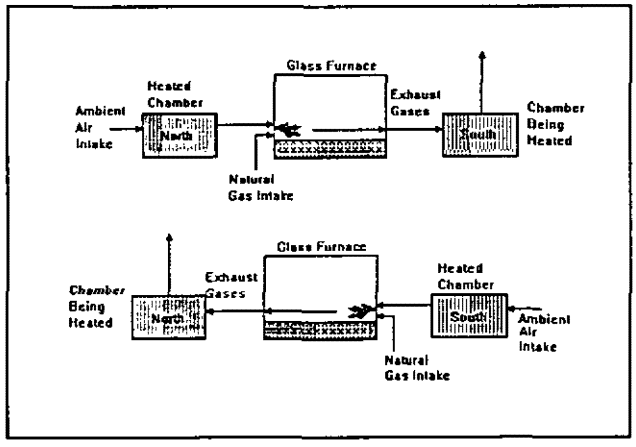

Figure 1 Pre-modification operation of the furnace *using ambient air as the oxidizing agent.*

Post-modification operation of this furnace will use oxygen as the oxidizing agent instead of ambient air. Oxygen is injected with the natural gas into the combustion chamber without the need of the oxygen to be preheated by the refractories. Because of this, both burners on the north and south sides of the furnace are fired simultaneously (see figure 2). Therefore, the emission

V. EMISSIONS CALCULATIONS: (Continued)

factors will be determined by adding the emissions from the north and south stacks together.

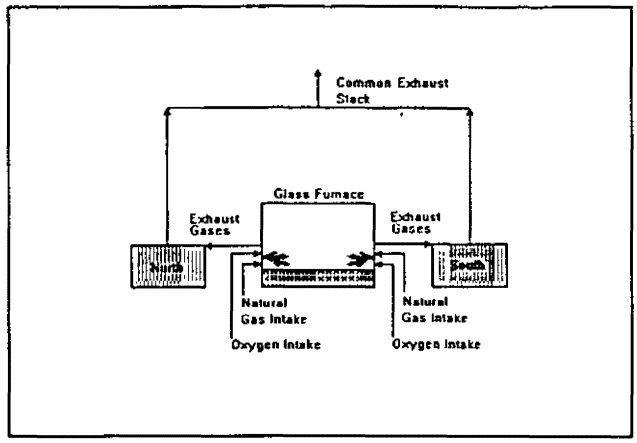

Figure 2 Post-modification operation of the furnace using oxygen as the oxidizing agent.

a. Emission factors before the furnace modification firing on natural gas as shown by the source test performed February 9, 1994 by Steiner Environmental, Inc.

NOx . . . . . 6.02 lbs/ton glass
CO • . . . . . 0.00 lbs/ton glass

b. Emission factors after the boiler modification firing on natural gas as shown by source test performed November 8, 1994 by Brown & Caldwell.

NOx . . . . . 2.95 lbs/ton glass
CO * . . . . . 0.00 lbs/ton glass

• Both the pre and post modification emission factors for CO are less than 0.005 lbs/ton of glass produced. Upon rounding, both the pre and post modification emission factors will be 0.00 lbs/ton of glass produced. Since the pre and post modification emission factors for CO are the same, the control efficiency will be zero, and therefore, there will be no actual emission reductions for CO for this furnace.

B. Baseline Period Determination and Data

The baseline is defined as two consecutive years of operation immediately prior to the submission of the complete application (REF: Rule 2201 Section 3.7.1)

The Authority to Construct application for the installation of the oxy/fuel fired

V. EMISSIONS CALCULATIONS: (Continued)

burners was deemed complete on June 18, 1991. The baseline emissions were determined by using the actual glass production rates for the eight complete calendar quarters of operation immediately prior to June 18, 1991.

Tons glass pulled				
	First quarter	Second quarter	Third quarter	Fourth quarter
1989	**	23,455	28,665	31,765
1990	32,422	24,930	31,416	31,756
1991	32,256	**	**	**
Average	32,339	24,193	30,041	31,761

** These values were excluded because they are not within the established baseline period

C. Historical Actual Emissions (HAE)

1. Formula used:

$$E.F.\frac{lbs}{ton} * \frac{(pull\ rate)\ tons}{QTR} = \frac{lbs}{qtr}$$

Where: E.F. are the Emission Factors before modification

2. Uncontrolled emissions from furnace # 4

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	194,681	145,642	180,847	191,201

D. Actual Emissions Reductions

1. The control efficiency (CE) for all pollutants are as follows:

$$CE(\%) = \frac{EF_B - EF_A}{EF_B} * 100$$

Where:

EF_B = Emission factor of each pollutant before modification
EF_A = Emission factor of each pollutant after modification

V. EMISSIONS CALCULATIONS: (Continued)

CE for the modification

	EF_B	EF_A	CE (%)
NOx	6.02 lbs/ton	2.95 lbs/ton	51.0

2. Actual Emission Reductions (AER) are as follows:

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	99,287	74,277	92,232	97,513

E. Air Quality Improvement Deduction:

10% of the Actual Emission Reductions (AER) shall be deducted for air quality improvement.

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	9,929	7,428	9,223	9,751

F. Increase in Permitted Emissions (IPE)

The modification of furnace # 4 to add oxy/fuel burners resulted in no increases in emissions.

G. Bankable Emission Reductions:

Bankable emission reductions are actual emission reductions minus the 10% air quality improvement deduction.

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	89,358	66,849	83,009	87,762

VI. COMPLIANCE

Eligibility for the credits are as follows:

Real

The reductions were calculated using actual glass production rates during the baseline period, and emission factors from pre modification and post modification source test data. The reductions are the result of the retrofit of oxy/fuel burners on furnace # 4, therefore the reductions are real.

VI. COMPLIANCE: (Continued)

Enforceable

The reductions are from the installation of oxy/fuel burners. The resulting NOx emission limit for furnace # 4 will be restricted by the Permit to Operate conditions. As required by the District policy - "Adequate Conditions To Enforce Actual Emission Reductions (AER)" - dated September 7, 1994, the NOx emission limit is a performance based limitation in pounds per million BTUs. The performance based limitation will ensure that the minimum control efficiency for the modified furnace will be maintained at all loads without affecting the potential capacity of the furnace. The Permit to Operate and subsequent Permits to Operate for this boiler will maintain the minimum performance based limitation for NOx. The condition shall include language stating that this condition is to enforce those emission reductions of this project so that all future actions pertaining to this Permit to Operate will retain or add adequate permit conditions so that the granted emission reduction credits remain enforceable. The performance based condition to enforce the NOx emission reductions from this project is as follows:

> The NOx emissions shall not exceed 2.95 pounds per ton of glass pulled. This performance based limit is to enforce the NOx emission reductions granted by certificate number N-107-2.

Therefore the reductions are enforceable.

Quantifiable

The baseline emissions are based on District Rule 2201 Sec 3.7 using a two year baseline, by quarter, preceding the second quarter of 1991 when the Authority to Construct application was deemed complete. The emission reductions were calculated using actual glass production rates during the baseline period and documented emission factors as referenced in the Calculations Section of this report. Therefore the reductions are quantifiable.

Permanent

The oxy/fuel burners are a permanent part of furnace # 4 and cannot be removed without disabling the furnace. Permit conditions restricting the NOx emissions will be put on the Permit to Operate. Therefore the reductions are permanent.

Surplus

The installation of the oxy/fuel burners was voluntary. The resulting reduction in emissions were not mandated by any rules or regulations and were not accounted for in the SIP towards attainment of the Air Quality Standards or in demonstrating a Reasonable Further Progress towards meeting the Air Quality Standards. At the time of application, there were no regulations for reduction of emissions from existing glass furnaces. Therefore the reductions are surplus.

VI. COMPLIANCE: (Continued)

Timeliness

The emission reduction credit application was submitted on March 29,1995. The date the reduction occurred was May 22, 1995 when the Authority to Construct was implemented to a Permit to Operate. Pursuant to District Rule 2301 (Emission Reduction Credit Banking) Section 4.2, if the emission reductions occurred after September 19, 1991, then the emission reductions are deemed eligible emissions reductions, provided: the reductions are real, surplus, permanent, quantifiable, and enforceable; the AERs are calculated in accordance to Rule 2201 and comply with the definition of AER; and an application for emission reduction credits is submitted within 180 days of the reduction. Therefore the application was submitted in a timely manner.

VII. RECOMMENDATION:

The District recommends that emission reduction credits be issued to Gallo Glass Company for the retrofit of furnace # 4 with oxy/fuel burners for the following amounts:

lbs/QTR	First Qtr	Second Qtr	Third Qtr	Fourth Qtr
NOx	89,358	66,849	83,009	87,762

After the appropriate public notice period.

San Joaquin Valley
Unified Air Pollution Control District

March 30, 1995

COPY

Doug Moore
Gallo Glass Co.
P.O. Box 1230
Modesto, CA. 95353

Re: ERC certificate application N-107-2 for Furnace #4

Dear Mr. Moore:

Your application for Emission Reduction Credits (ERC) for Furnace #4 has been received by the Air Pollution Control District, and reviewed for completeness.

Based on this preliminary review, the application appears to be complete. However, during the processing of this application, the District may request additional information to clarify, correct or otherwise supplement the information on file.

Thank you for your cooperation. Should you have any questions, please contact Anthony Mendes of Permit Services at (209) 545-7000.

Sincerely,

Seyed Sadredin
District Manager of Permit Services

Anthony Mendes
Permit Services Manager

ss/am/sh

David L. Crow
Executive Director/Air Pollution Control Officer

1999 Tuolumne Street, Suite 200 • Fresno, CA 93721 • (209) 497-1000 • FAX (209) 233-2057

Northern Region
4230 Kiernan Avenue, Suite 130 • Modesto, CA 95356
(209) 545-7000 • Fax (209) 545-8652

Central Region
1999 Tuolumne Street, Suite 200 • Fresno, CA 93721
(209) 497-1000 • Fax (209) 233-2057

Southern Region
2700 M Street, Suite 275 • Bakersfield, CA 93301
(805) 861-3682 • Fax (805) 861-2060

GALLO GLASS COMPANY

P.O. BOX 1230
MODESTO, CALIFORNIA 95353

March 28, 1995

Mr. Anthony Mendes
Permitting Officer
SJUAPCD
4230 Kiernan
Suite #130
Modesto, Ca. 95356

Dear Mr. Mendes:

Enclosed is our application for ERC's for the Furnace #4 conversion to Gas/Oxygen firing. The information that you requested to calculate the potential emission credits for the conversion of #4 Furnace to Gas/Oxygen firing, has been forwarded earlier to you office. You had indicated that your office would complete the calculations of the potential banking credits for NOx, using the pre and post conversion stack test for this furnace. These results would be forwarded to Gallo Glass Company, for our review, at which time we would provide the value and type of emissions to be banked. An electronic copy of the production data to be used to calculate the banking credit potential, has been forwarded to the attention of Mr. Steve Howie.

If there are any questions about the information in this application, or the procedure outlined above for determining the amount of banking credits for which Gallo may be eligible to apply, please let me know. I have included the summary sheets from each of the stack test for your review, in the event the originals forwarded to your office at the time of testing are not easily accessible.

Sincerely,

Doug Moore

San Joaquin Valley
Unified Air Pollution Control District

APPLICATION FOR:

[X] EMISSION REDUCTION CREDIT (ERC)
[ ] CONSOLIDATION OF ERC CERTIFICATES
[ ] ERC RE-ISSUE AFTER PARTIAL USE
[ ] ERC TRANSFER OF OWNERSHIP

1. **ERC TO BE ISSUED TO:**
GALLO GLASS COMPANY

2. **MAILING ADDRESS:**
Street/P.O. Box: P. O. BOX 1230
City: MODESTO State: CA Zip Code: 95353

3. **LOCATION OF REDUCTION:**
Street: 605 SOUTH SANTA CRUZ
City: MODESTO, CA 95354

4. **DATE OF REDUCTION:** 11/08/94

5. **PERMIT NO(S):** **EXISTING ERC NO(S):**

6. **METHOD RESULTING IN EMISSION REDUCTION:**
[ ] SHUTDOWN [ ] RETROFIT [X] PROCESS CHANGE [ ] OTHER
DESCRIPTION:

(Use additional sheets if necessary)

7. **REQUESTED ERCs (In Pounds Per Calendar Quarter):**

	VOC	NOx	CO	PM10	SOx	OTHER
1st QTR						
2nd QTR						
3rd QTR						
4th QTR						
TOTAL COST	$	$	$	$	$	$

8. **SIGNATURE OF APPLICANT:**

TYPE OR PRINT TITLE OF APPLICANT:
MANAGER FURNACE & BATCH

9. **TYPE OR PRINT NAME OF APPLICANT:**
DOUG MOORE

DATE: 03/13/95

TELEPHONE NO: (209) 579-3411

FOR APCD USE ONLY:

DATE STAMP
RECEIVED
MAR 29 1995
SAN JOAQUIN VALLEY
UNIFIED A.P.C.D.
NO. REGION

FILING FEE RECEIVED: $ 650.00 # 20028721
N-107-2 NOx
DATE PAID: 3-29-95
PROJECT NO.: 950151
#1662

Northern Regional Office * 4230 Kiernan Ave., Suite 130 * Modesto, California 95356 * (209) 545-7000 * FAX (209) 545-8652

AM 3-28-95

ERC CERTIFICATION APPLICATION
GALLO GLASS COMPANY
FURNACE #4

GENERAL FACILITY DESCRIPTIONS:

Gallo Glass Company has maintained a facility for the production of glass containers at 605 S. Santa Cruz, since 1958. Furnace #4 was first placed in production on October 16, 1972.

EMISSION SOURCES:

Gallo Glass Furnace #4, was converted to Gas/Oxygen firing during a planned rebuild. An Authority to Construct, No. 5-027-12, was issued by the District for this conversion. Attached is a copy of the permit.

METHOD AND DATE OF REDUCTIONS:

Furnace #4 configuration was changed form conventional firing to Gas/Oxygen firing. This was a process change, authorized by an Authority to Construct, Retrofit to Gas/Oxygen Burners, Permit No. 5-027-12.

The repair was completed and reduction in emissions was confirmed by stack test conducted on November 8, 1994.

BASELINE PERIOD AND EMISSION LEVELS:

Baseline data for the last eight (8) quarters of production, before the rebuild period, have been furnished to the District. The District has requested that the baseline data be submitted, and the potential emission credits will be calculated and forwarded to Gallo for comment. After Gallo has reviewed the emission calculations, Gallo will specify the type and quantity of credits to bank.

CONFIDENTIALITY OF INFORMATION:

The rates of production included in this are confidential information.

ALARM LOG REPORT

Hardware Alarms

Unaccepted Alarms

Accepted Alarms

94 14:19:46 TOTAL GAS 5 : LOW FLOW
94 14:19:45 TOTAL GAS 4 : LOW FLOW
94 14:19:46 TOTAL GAS 3 : LOW FLOW
94 14:19:46 TOTAL GAS 2 : LOW FLOW
94 14:19:44 BURNER T/C #2 NORTH : OVER TEMP

TABLE OF CONTENTS

The enclosed package contains the following information:

Stanislaus County

Department of Environmental Resources

Air Pollution Control District

1716 Morgan Road
Modesto, California 95351
(209) 525-4152

AUTHORITY TO CONSTRUCT

GALLO GLASS COMPANY

Retrofit Gas/Oxygen Burners - Furnace No. 4

Permit Number: 5-027-12

GRANTED TO: GALLO GLASS CO.
605 South Santa Cruz Avenue
Modesto, CA 95355

EQUIPMENT DESCRIPTION:
Twelve (12) each Maxon Gas/Oxygen Burner, Series 1000, rated at 7.5 MMBTU per hour each, for a total of 90 MMBTU per hour, with associated combustion control and monitoring system.

CONDITIONS:

1. Furnace modifications shall be constructed according to the plans and specifications submitted in the Authority to Construct application.

2. Natural gas and/or liquid propane gas (LPG) are the only fuels permitted for use in this furnace.

3. Prior to being issued a Permit to Operate, a source test for NO_x, SO_x, PM_{10}, CO, and HC emission rates shall be conducted to establish new emission levels and to demonstrate compliance with all applicable rules and regulations of the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) and this Authority to Construct. The results of the test shall be submitted to the District within 45 days of the initial start-up.

4. A pre-test outlining the source test methods, procedures and operating parameters shall be submitted to the District for approval at least 30 days prior to the source test.

5. All criteria pollutant emission rates must demonstrate a negative net emission change or the application of best available control technology (BACT) will be required.

6. A continuous in-stack emissions monitoring system for nitrogen oxides is required. The monitoring system for nitrogen oxides is required. The monitoring system must satisfy all applicable performance standards as required in the Code of Federal Regulations, Title 40, Part 51, Appendix P, and Part 60, Appendix P. The system shall have a continuous recording device and records must be kept for a minimum of two (2) years. All records must be disclosed to the Air Pollution Control Inspector upon request.

Stanislaus County

Department of Environmental Resources

Air Pollution Control District

1716 Morgan Road
Modesto, California 95351
(209) 525-4152

June 18, 1991

Gallo Glass Company
P.O. Box 1230
Modesto, CA 95353

Attn: R. Douglas Moore

Re: Authority to Construct Application.

Dear Mr. Moore:

The Stanislaus Zone of the San Joaquin Valley Unified Air Pollution Control District has reviewed your application requesting that an Authority to Construct be issued for a Gas/Oxygen Combustion System for Furnace No. 4 which will be installed at 1230 Oregon Dr., Modesto, CA. The District has determined that the information submitted is complete, and will proceed with processing of your application. SJVUAPCD reserves the right to request further information if necessary.

Sincerely,

Anthony J. Mendes
Senior Air Pollution Control Engineer

AUTHORITY TO CONSTRUCT AND

New Business ☐ Address Change ☐ Change of Owner ☐
Equipment Change ☒ Equipment Addition ☐

1. Business Name: GALLO GLASS COMPANY

2. Business Location: 1230 Oregon Drive
Street
Modesto, CA 95354 579-3411
City Zip Phone #

3. Billing Name: GALLO GLASS COMPANY

4. Billing Address: P.O. Box 1230
Street
Modesto, CA 95353 579-3411
City State Zip Phone #

5. Owner's Name: GALLO GLASS COMPANY

6. Owner's Address: P.O. Box 1230
Street
Modesto, CA 95353 579-3411
City State Zip Phone #

7. General Nature of Business: Glass Container Manufacturer

8. Equipment Description - Pursuant to provisions of State Health & Safety Code and the Rules & Regulations of Stanislaus County Air Pollution Control District, application is hereby made for permit to operate the following equipment: (#2) Furnace - Gas/Oxygen Operation

Note #2, 3 & 4 submitted at same time

9. Applicant's Name & Title: R. Douglas Moore, Manager - Furnace and Batch

10. Applicant's Address: P.O. Box 1230
Street
Modesto, CA 95353 579-3411
City State Zip Phone #

11. Applicant's Signature: [signature] Date: 4/9/91

MAIL APPLICATION TO:

STANISLAUS COUNTY AIR
POLLUTION CONTROL DISTRICT
1716 Morgan Road
Modesto, CA 95351

FOR A.P.C.D. USE ONLY:
Date Received: 5-17-91
Filing Fee: $21 CK 28341
Date Recd 5-17-91
Source # 5-027

ATC # 5-027-10 FC

TABLE 2
FURNACE 4
CRITERIA POLLUTANTS AFTER Retrofit
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE	
DATE	11/8/94	11/8/94	11/8/94		
TIME	1016-1116	1306-1544	1444-1544		
Tons/Day Pulled	354	354	354		
Concentration					
O_2 % volume dry	19.9	19.8	19.7	19.8	
NOx ppm	128.1	130.7	135.4	131.4	
SO_2 ppm	28.3	24.9	20.9	24.7	
CO ppm	0.7	0.2	0.2	0.4	
CO_2 % volume dry	3.3	3.2	3.1	3.2	
THC ppm	0.6	0.7	0.9	0.7	
SDCFM	45500	45500	45500	45500	
Emission Rate (lb/hr)					
NOx as NO_2	42.4	43.3	44.8	43.5	2.95
SO_2	13.0	11.5	9.6	11.4	
CO	0.1	0.0	0.0	0.0	.007 highest Value
THC as C_1	0.2	0.2	0.3	0.2	

This page includes confidential information, which may not be disclosed to any third party or used for any purpose other than the calculation of ERCs.

Performed by
Brown & Caldwell

VOC - - -

$(.9 \times 10^{+6})(16)(45500)(2.59 \times 10^{-5})$

TABLE 1
FURNACE FOUR
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/8/94	11/8/94	11/8/94	
TIME	0958-1131	1207-1337	1510-1634	
Duct Conditions				
Temperature °F	339	341	338	339
% Moisture	5.6	3.6	3.7	4.3
Average Wet MW	28.7	28.9	28.9	28.8
Average Velocity ft/sec	31.2	32.6	31.8	31.9
ACFM	69922	73102	71201	71408
SCFM	46589	48586	47500	47559
SDCFM	43997	46855	45737	45530
Particulate Concentration				
Filterable (grns/SDCF)	0.019	0.018	0.020	0.019
Condensable (grns/SDCF)	0.002	0.001	0.001	0.001
Total (grns/SDCF)	0.021	0.020	0.021	0.021
Particulate Emission Rate				
Filterable (lbs/hr)	7.192	7.369	7.907	7.489
Condensable (lbs/hr)	0.601	0.589	0.507	0.566
Total (lbs/hr)	7.793	7.958	8.414	8.055

Results Summary				
Client:		Gallo		
Unit:		Furnace 4		
Site:		Outlet		
Parameter				
Run #:	Two	Three	Four	Average
Date	2/8/94	2/9/94	2/9/94	
Time	1415-1515	921-1021	1200-1300	
CEM Results, Concentrations:				
CO, ppm:	0.0	0.0	0.0	0.0
NOx, ppm:	291	245	271	269
SO2, ppm:	20.0	20.1	25.0	21.7
THC, ppm (as C1):	12.4	7.4	6.9	8.9
CO2, %:	3.8	3.4	3.8	3.7
O2, %:	15.6	16.0	15.7	15.8
CEM Results, Emission Rates:				
CO, lb/hr:	0.0	0.0	0.0	0.0
NOx, lb/hr:	94.7	90.7	89.5	91.6
SO2, lb/hr:	9.02	10.35	11.49	10.29
THC, lb/hr:	1.40	0.95	0.80	1.05

.0000
6.02

STEINER ENVIRONMENTAL

Before retrofit

$$\frac{91.6\ \text{lb/hr}}{\left(365.3\ \frac{\text{TON}}{\text{day}}\right)\left(\frac{\text{day}}{24\text{hr}}\right)} = 6.02\ \text{lb/TON}$$

.6511
.510

66-156/531

GALLO GLASS COMPANY 20028721

P.O. BOX 1230 OREGON DRIVE
MODESTO, CALIFORNIA
95353

DATE	CHECK NO.	AMOUNT
03/14/95	20028721	********650.00

Bank of America Disbursement Account

HUNDRED FIFTY AND 00/100 DOLLARS

TO THE ORDER OF
SAN JOAQUIN VALLEY UNIFIED AIR
POLLUITON CONTROL DISTRICT
4230 KIERNAN AVENUE, SUITE 130
MODESTO, CA 95356

⑈20028721⑈ ⑆053101561⑆ 79985104⑈

.O GLASS COMPANY

REMITTANCE ADVICE

1230 • MODESTO, CALIFORNIA 95353 • PHONE (209) 579-3411

20028721

GG-000-26702-0-C GALLO GLASS COMPANY 20028721

HER BER	INVOICE NUMBER	PURCHASE ORDER	INVOICE DATE	AMOUNT	DISCOUNT	NET AMOUNT
5816	16817		03-13-95	650.00	.00	650.00
		TOTALS		650.00	.00	650.00

RECEIVED
MAR 29 1995
SAN JOAQUIN VALLEY
UNIFIED A.P.C.D.
NO. REGION

LASE DETACH BEFORE DEPOSITING CHECK

THIS CHECK TENDERED IN FULL PAYMENT OF INVOICES LISTED ABOVE

TELEPHONE RECORD FORM

Date / Time	Names of All Persons Involved and Conversation Record
9-27-95	no comment from EPA or ARB

PROJECT ROUTING FORM

PROJECT NUMBER: 950151 FACILITY ID: 1662 PERMIT NOs: _____

APPLICANT NAME: GALLO GLASS COMPANY

PREMISE ADDRESS: 605 S. SANTA CRUZ, MODESTO

PRELIMINARY REVIEW	ENGR	DATE	SUPR	DATE
A. Application Deemed Incomplete				
B. Application Deemed Complete [ ] Awaiting CB Offsets				
C. Application Pending Denial				
D. Application Denied				

ENGINEERING EVALUATION	INIT	DATE
E. Engineering Evaluation Complete		
F. Supervising Engineer Approval		
G. Compliance Division Approval [ ] Not Required		
H. Permit Services Manager Approval		

Director Review: [ ] Not Required [ ] Required

CLERICAL STAFF: Perform tasks as indicated below. Initial and date when completed.

[ ] PRELIMINARY REVIEW
- [ ] _____ Mail Incompleteness Letter to the Applicant.
- [ ] _____ Mail Completeness Letter to the Applicant.
- [ ] _____ Mail Intent to Deny Letter to the Applicant (Certified Mail).
- [ ] _____ Mail Denial Letter to the Applicant (Certified Mail).

[ ] PROJECTS NOT REQUIRING PUBLIC NOTIFICATION

[ ] PRELIMINARY DISPOSITION:
- [ ] _____ Mail Imminent Denial Letter to the Applicant (Certified Mail).

[ ] FINAL DISPOSITION:
- [ ] _____ Mail ATC(s) to Distribution.
- [ ] _____ Mail Denial Letter to the Applicant (Certified Mail).

[ ] PROJECTS REQUIRING PUBLIC NOTIFICATION

[ ] PRELIMINARY DECISION:
- [ ] _____ Deliver Ad to the Newspaper NOT LATER THAN _____
- [ ] _____ Mail copies of Cover Letter and Engineering Evaluation to Distribution.

[ ] FINAL DECISION:
- [ ] _____ Deliver Ad to the Newspaper NOT LATER THAN _____
- [ ] _____ Mail copies of Cover Letter and ATC(s) to Distribution.
- [ ] _____ Mail copies of Cover Letter to Distribution.

DISTRIBUTION

- [ ] _____ APPLICANT
- [ ] _____ ENGINEER
- [ ] _____ COMPLIANCE
- [ ] _____ PREMISE FILE
- [ ] _____ EPA - 75 Hawthorne St., San Francisco, CA 94105 Attn: A-3-4
- [ ] _____ ARB - Stationary Source Div. Chief, PO Box 2815, Sacramento, CA 95812
- [ ] _____ SJVUAPCD - 1999 Tuolumne St., Fresno, CA 93721 Attn: Seyed Sadredin

[ ] _____ BLDG DEPT _____ [ ] _____ OTHER _____

Brown and Caldwell

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O. Box 8045
Walnut Creek, CA 94596-1220
(510) 937-9010
FAX (510) 937-9026

SOURCE TEST REPORT Gallo Glass 1880.01

Brown and Caldwell
January 10, 1995

Testing Information

Facility:	Gallo Glass
Type of Unit(s):	Furnaces 2, 3, and 4
Purpose of Test:	Baseline Emission Data
Test Procedures:	CARB Method 100 EPA Method 5/8
Test Date(s):	November 8 - 11, 1994

Client Information

Name/Address:	Gallo Glass Post Office Box 1230 Modesto, California 95353
Contact:	Mr. Doug Moore Phone 209 579 3411 Fax 209 579 4731

Testing Firm Information

Company:	Brown and Caldwell 3480 Buskirk Avenue Pleasant Hill, California 94523
Contact:	Tom Stucker, Manager Air Monitoring Program Phone (510) 210-2404 Fax (510) 937-9026

TABLE of CONTENTS

SAMPLE PROGRAM TEST PARAMETERS AND METHODS

PARAMETER	SAMPLING METHODS	ANALYTICAL METHOD
Volumetric Flow	EPA 1,2,3,4	Type "S" Pitot Tube
Particulate/Sulfates	EPA 5/8	Gravimetric/Ion Chromatography
Criteria Pollutants	CARB 100	Electronic Analyzer
PM_{10}	CARB 501a	Gravimetric

SAMPLING TEAM MEMBERS

Thomas Stucker	Brown and Caldwell	Program Manager
John Pascale	Brown and Caldwell	Project Manager
Dan Duncan	Brown and Caldwell	Project Scientist
Scott Chesnut	Brown and Caldwell	Project Scientist
Art Hernandez	Brown and Caldwell	Technician

DISCUSSION OF RESULTS

A discussion of the individual sampling methods is not presented in this report. The procedure for each method may be obtained from Brown and Caldwell upon request. This section of the report serves to present and discuss any problems encountered during the source tests, or unusual results of laboratory analysis and their effects, if any, upon the test results. The results of the individual sampling runs, calculations, and other pertinent data are presented in this report. Included in the appendices are copies of the field data sheets, laboratory results, analyzer strip charts, cylinder gas certifications and example calculations.

Triplicate EPA Method 5/8 runs were completed for the determination of particulates and sulfates. The sulfate fraction of the sample was determined after the completion of the gravimetric analysis on all sample fractions except the peroxide fraction contained in impingers two and three. Impingers two and three were sent directly to the lab for sulfate analysis upon return to the lab. Gravimetric analysis was performed on the filter, probe and nozzle, and the contents of impinger one. Isokinetic results for all of the EPA 5/8's runs were within the $\pm$ 10% required by the method.

Triplicate CARB Method 501a runs were completed on each outlet. Run times were originally scheduled to be one hour in duration however the run times were shortened due to a higher than expected grain loading. Sufficient sample was collected during each run for the determination of PM_{10}. The PM_{10} concentrations were determined from three sample fractions. The sampling system consists of a cyclone, filter and impinger train. Two separate quantitative acetone rinses were performed on the cyclone resulting in the capture of PM>10 and PM<10 (PM_{10}). The two other PM_{10} fractions were collected from the impinger train and the filter, which was in line behind the cyclone. The sum of the milligrams contained in these three fractions was used to determine the concentration (grns/SDCF) of PM_{10}.

Triplicate CARB Method 100 runs were completed for the determination of criteria pollutants. Emission rates were calculated based on the volume flow rates determined during the EPA 5/8's sampling.

SECTION TWO
RESULTS SUMMARY

TABLE 1
FURNACE FOUR
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

335

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/8/94	11/8/94	11/8/94	
TIME	0958-1131	1207-1337	1510-1634	
Duct Conditions				
Temperature °F	339	341	338	339
% Moisture	5.6	3.6	3.7	4.3
Average Wet MW	28.7	28.9	28.9	28.8
Average Velocity ft/sec	31.2	32.6	31.8	31.9
ACFM	69922	73102	71201	71408
SCFM	46589	48586	47500	47559
SDCFM	43997	46855	45737	45530
Particulate Concentration				
Filterable (grns/SDCF)	0.019	0.018	0.020	0.019
Condensable (grns/SDCF)	0.002	0.001	0.001	0.001
Total (grns/SDCF)	0.021	0.020	0.021	0.021
Particulate Emission Rate				
Filterable (lbs/hr)	7.192	7.369	7.907	7.489
Condensable (lbs/hr)	0.601	0.589	0.507	0.566
Total (lbs/hr)	7.793	7.958	8.414	8.055

TABLE 2
FURNACE 4
CRITERIA POLLUTANTS
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/8/94	11/8/94	11/8/94	
TIME	1016-1116	1306-1544	1444-1544	
Concentration				
O_2 % volume dry	19.9	19.8	19.7	19.8
NOx ppm	128.1	130.7	135.4	131.4
SO_2 ppm	28.3	24.9	20.9	24.7
CO ppm	0.7	0.2	0.2	0.4
CO_2 % volume dry	3.3	3.2	3.1	3.2
THC ppm	0.6	0.7	0.9	0.7
SDCFM	45500	45500	45500	45500
Emission Rate (lb/hr)				
NOx as NO_2	42.4	43.3	44.8	43.5
SO_2	13.0	11.5	9.6	11.4
CO	0.1	0.0	0.0	0.0
THC as C_1	0.2	0.2	0.3	0.2

TABLE 3
FURNACE 2 SOUTH
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/10/94	11/10/94	
TIME	1610-1705	0800-0900	0944-1039	
Duct Conditions				
Temperature °F	437	419	422	426
% Moisture	5.0	5.4	5.2	5.2
Average Wet MW	28.8	28.8	28.8	28.8
Average Velocity ft/sec	32.1	33.6	34.5	33.4
ACFM	37900	39613	40628	39380
SCFM	22280	23883	24412	23525
SDCFM	21115	22595	23146	22285
Particulate Concentration				
Filterable (grns/SDCF)	0.044	0.042	0.032	0.039
Condensable (grns/SDCF)	0.000	0.022	0.031	0.018
Total (grns/SDCF)	0.044	0.064	0.063	0.057
Particulate Emission Rate				
Filterable (lbs/hr)	8.033	8.126	6.336	7.498
Condensable (lbs/hr)	0.000	4.334	6.178	3.504
Total (lbs/hr)	8.033	12.460	12.514	11.002

TABLE 4
FURNACE 2 SOUTH
CRITERIA POLLUTANTS
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/9/94	11/10/94	
TIME	1052-1152	1235-1335	1017-1120	
Concentration				
O_2 % volume dry	19.8	19.8	19.8	19.8
NOx ppm	139.7	139.6	134.2	137.8
SO_2 ppm	71.1	77.0	55.1	67.7
CO ppm	0.6	0.5	1.3	0.8
CO_2 % volume dry	4.0	4.1	3.6	3.9
THC ppm	1.1	0.9	0.3	0.8
SDCFM	21900	21900	23100	22300
Emission Rate (lb/hr)				
NOx as NO_2	22.3	22.2	22.6	22.4
SO_2	15.8	17.1	12.9	15.3
CO	0.1	0.1	0.1	0.1
THC as C_1	0.2	0.2	0.0	0.1

TABLE 5
FURNACE 2 NORTH
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/9/94	11/9/94	
TIME	1136-1249	1342-1443	1559-1657	
Duct Conditions				
Temperature °F	392	389	405	395
% Moisture	6.8	5.4	5.3	5.9
Average Wet MW	28.7	28.8	28.8	28.8
Average Velocity ft/sec	27.5	28.5	27.3	27.8
ACFM	32355	33550	32219	32708
SCFM	20046	20860	19661	20189
SDCFM	18673	19724	18614	19004
Particulate Concentration				
Filterable (grns/SDCF)	0.047	0.057	0.054	0.053
Condensable (grns/SDCF)	0.004	0.001	0.004	0.003
Total (grns/SDCF)	0.051	0.058	0.059	0.056
Particulate Emission Rate				
Filterable (lbs/hr)	7.578	9.661	8.666	8.635
Condensable (lbs/hr)	0.664	0.144	0.708	0.505
Total (lbs/hr)	8.243	9.804	9.375	9.141

TABLE 6
FURNACE 2 NORTH
CRITERIA POLLUTANTS
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/9/94	11/10/94	
TIME	1401-1503	1528-1628	0903-1003	
Concentration				
O_2 % volume dry	19.5	19.4	19.5	19.5
NOx ppm	116.6	118.3	116.4	117.1
SO_2 ppm	82.7	82.4	59.5	74.9
CO ppm	0.6	0.7	0.6	0.6
CO_2 % volume dry	4.2	4.4	3.8	4.1
THC ppm	0.8	0.5	0.1	0.5
SDCFM	19200	19200	18600	19000
Emission Rate (lb/hr)				
NOx as NO_2	16.3	16.5	15.7	16.2
SO_2	16.1	16.0	11.2	14.4
CO	0.0	0.1	0.1	0.1
THC as C_1	0.1	0.1	0.0	0.1

TABLE 7
FURNACE 3 SOUTH
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/10/94	11/10/94	
TIME	1400-1454	1543-1607	1712-1809	
Duct Conditions				
Temperature °F	384	380	375	380
% Moisture	5.6	6.3	3.2	5.0
Average Wet MW	28.8	28.7	29.0	28.8
Average Velocity ft/sec	26.8	28.5	29.6	28.3
ACFM	31600	33578	34919	33366
SCFM	19850	21193	22171	21071
SDCFM	18743	19848	21462	20018
Particulate Concentration				
Filterable (grns/SDCF)	0.043	0.040	0.043	0.042
Condensable (grns/SDCF)	0.007	0.004	0.004	0.005
Total (grns/SDCF)	0.050	0.044	0.047	0.047
Particulate Emission Rate				
Filterable (lbs/hr)	6.839	6.782	7.852	7.158
Condensable (lbs/hr)	1.167	0.731	0.740	0.879
Total (lbs/hr)	8.006	7.513	8.592	8.037

TABLE 8
FURNACE 3 SOUTH
CRITERIA POLLUTANTS
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/10/94	11/11/94	
TIME	1443-1544	1612-1712	0830-0930	
Concentration				
O_2 % volume dry	19.7	19.6	19.5	19.6
NOx ppm	94.1	103.7	103.1	100.3
SO_2 ppm	73.4	81.0	71.9	75.4
CO ppm	0.1	0.3	0.3	0.2
CO_2 % volume dry	4.1	4.3	3.9	4.1
THC ppm	1.0	0.7	0.2	0.6
SDCFM	19300	19300	21500	20033
Emission Rate (lb/hr)				
NOx as NO_2	13.2	14.6	16.1	14.6
SO_2	14.4	15.8	15.7	15.3
CO	0.0	0.0	0.0	0.0
THC as C_1	0.1	0.1	0.0	0.1

TABLE 9
FURNACE 3 NORTH
PARTICULATE MATTER
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/11/94	11/11/94	
TIME	1426-1519	0843-1933	1018-1112	
Duct Conditions				
Temperature °F	422	427	375	408
% Moisture	6.5	5.7	5.4	5.9
Average Wet MW	28.7	28.8	28.9	28.8
Average Velocity ft/sec	27.8	33.2	32.7	31.2
ACFM	32800	39140	38487	36809
SCFM	19716	23457	24502	22558
SDCFM	18432	22123	23174	21243
Particulate Concentration				
Filterable (grns/SDCF)	0.083	0.045	0.043	0.057
Condensable (grns/SDCF)	0.003	0.009	0.003	0.005
Total (grns/SDCF)	0.086	0.054	0.046	0.062
Particulate Emission Rate				
Filterable (lbs/hr)	13.129	8.514	8.541	10.061
Condensable (lbs/hr)	0.460	1.761	0.635	0.952
Total (lbs/hr)	13.589	10.275	9.175	11.013

TABLE 10
FURNACE 3 NORTH
CRITERIA POLLUTANTS
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/11/94	11/11/94	
TIME	1313-1422	0946-1046	1059-1200	
Concentration				
O_2 % volume dry	19.5	19.2	19.2	19.3
NOx ppm	109.5	149.5	147.6	135.5
SO_2 ppm	73.4	77.8	79.8	77.0
CO ppm	0.5	0.6	0.7	0.6
CO_2 % volume dry	4.2	4.3	4.5	4.3
THC ppm	0.9	0.4	0.0	0.4
SDCFM	18400	22600	22600	21200
Emission Rate (lb/hr)				
NOx as NO_2	14.7	24.6	24.3	21.2
SO_2	13.7	17.8	18.3	16.6
CO	0.0	0.1	0.1	0.1
THC as	0.1	0.1	0.0	0.1

TABLE 11
FURNACE 4
EPA 5/8 SULFATE S
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/8/94	11/8/94	11/8/94	
TIME	0958-1131	1207-1337	1510-1634	
Percent Isokinetic	105.3	101.1	100.0	102.1
Concentration				
Sulfuric Acid Mist grns /SDCF	0.263	0.146	0.132	0.180
SO_2 ppm	36.6	26.8	22.2	28.5
Emission Rate				
SO_2 lbs/hr	16.3	12.7	10.3	13.1

TABLE 12
FURNACE 2 SOUTH
EPA 5/8 SULFATE S
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/10/94	11/10/94	
TIME	1610-1705	0800-0900	0944-1039	
Percent Isokinetic	104.9	103.8	102.1	103.6
Concentration				
Sulfuric Acid Mist grns /SDCF	0.281	0.266	0.264	0.270
SO_2 ppm	64.8	72.8	72.2	69.9
Emission Rate				
SO_2 lbs/hr	13.9	16.6	16.9	15.8

TABLE 13
FURNACE 2 NORTH
EPA 5/8 SULFATE S
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/9/94	11/9/94	
TIME	1136-1249	1342-1443	1559-1657	
Percent Isokinetic	106.8	104.2	108.6	106.5
Concentration				
Sulfuric Acid Mist grns /SDCF	0.352	0.353	0.376	0.360
SO_2 ppm	70.4	87.8	82.6	80.3
Emission Rate				
SO_2 lbs/hr	13.3	17.5	15.9	15.6

TABLE 14
FURNACE 3 SOUTH
EPA 5/8 SULFATE S
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/10/94	11/10/94	
TIME	1400-1454	1543-1607	1712-1809	
Percent Isokinetic	108.2	106.5	103.4	106.1
Concentration				
Sulfuric Acid Mist grns /SDCF	0.370	0.333	0.223	0.309
SO_2 ppm	66.4	59.5	44.5	56.8
Emission Rate				
SO_2 lbs/hr	12.6	11.7	9.7	11.3

TABLE 15
FURNACE 3 NORTH
EPA 5/8 SULFATE S
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/11/94	11/11/94	
TIME	1426-1519	0843-0933	1018-1112	
Percent Isokinetic	106.4	102.6	100.7	103.2
Concentration				
Sulfuric Acid Mist grns /SDCF	0.418	0.398	0.331	0.382
SO_2 ppm	88.6	64.7	71.6	75.0
Emission Rate				
SO_2 lbs/hr	16.5	14.5	16.8	15.9

TABLE 16
FURNACE 4
PM_{10}
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/8/94	11/8/94	11/8/94	
TIME	1115-1226	1326-1432	1514-1620	
Percent Isokinetic	92.1	93.6	64.2	93.3
50% CUT-POINT/D_{50} MICRONS	10.3	10.3	10.3	10.3
Concentration grns /SDCF PM_{10}	6.93E-02	3.11E-02	2.56E-02	4.20E-02
Emission Rate PM_{10} lbs/hr	26.9	12.0	10.0	16.3

TABLE 17
FURNACE 2 SOUTH
PM_{10}
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/9/94	11/9/94	11/9/94	
TIME	1030-1149	1250-1309	1346-1405	
Percent Isokinetic	105.4	99.0	96.7	100.3
50% CUT-POINT/D_{50} MICRONS	9.9	9.9	9.9	9.9
Concentration grns /SDCF PM_{10}	2.16E-02	7.71E-02	9.50E-02	6.46E-02
Emission Rate PM_{10} lbs/hr	22.2	26.3	32.8	27.1

TABLE 18
FURNACE 2 NORTH
PM_{10}
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/10/94	11/10/94	
TIME	1115-1226	1326-1432	1514-1620	
Percent Isokinetic	94.4	97.0	96.0	95.8
50% CUT-POINT/D_{50} MICRONS	9.8	9.8	9.8	9.8
Concentration grns /SDCF PM_{10}	8.36E-02	8.38E-02	7.43E-02	8.06E-02
Emission Rate PM_{10} lbs/hr	29.9	29.6	26.5	28.7

TABLE 19
FURNACE 3 SOUTH
PM_{10}
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/11/94	11/11/94	11/11/94	
TIME	1604-1621	1647-1706	1743-1806	
Percent Isokinetic	92.5	96.7	95.1	94.8
50% CUT-POINT/D_{50} MICRONS	10.8	10.8	10.8	10.8
Concentration grns /SDCF PM_{10}	9.45E-02	1.13E-01	7.21E-02	9.32E-02
Emission Rate PM_{10} lbs/hr	34.6	41.4	26.4	34.1

TABLE 19
FURNACE 3 NORTH
PM_{10}
CONCENTRATION AND EMISSION DATA

	RUN #1	RUN #2	RUN #3	AVERAGE
DATE	11/10/94	11/10/94	11/10/94	
TIME	1604-1621	1647-1706	1743-1806	
Percent Isokinetic	94.8	100.0	100.4	98.4
50% CUT-POINT/D_{50} MICRONS	10.6	10.6	10.6	10.6
Concentration grns /SDCF PM_{10}	7.77E-02	1.05E-01	5.26E-02	7.83E-02
Emission Rate PM_{10} lbs/hr	27.1	36.6	18.3	27.3

THE FOLLOWING INFORMATION IS CONSIDERED
CONFIDENTIAL PROCESS INFORMATION BY GALLO GLASS

The following information is for the time period of the last emission testing for the following furnaces:

#1 FURNACE:

12/20/94 330 TONS PULLED/DAY

#2 FURNACE:

11/09/94
11/10/94 335 TONS PULLED/DAY

#3 FURNACE:

11/10/94
11/11/94 346 TONS PULLED/DAY

#4 FURNACE:

11/08/94 354 TONS PULLED/DAY

Project 950151

ALL PULL RATES ARE CONFIDENTIAL FROM FILE FURN-4.WK1

FURNACE #4 FOR THE PERIOD 1989 THRU 1991:

DATE	TOTAL TONS PULLED
1.0189	72
1.0289	28
1.0389	89
1.0489	196
1.0589	196
1.0689	196
1.0789	196
1.0889	196
1.0989	196
1.1089	216
1.1189	216
1.1289	236
1.1389	272
1.1489	272
1.1589	272
1.1689	377
1.1789	372
1.1889	372
1.1989	371
1.2089	371
1.2189	371
1.2289	371
1.2389	366
1.2489	366
1.2589	366
1.2689	366
1.2789	366
1.2889	366
1.2989	366
1.3089	290
1.3189	361
2.0189	361
2.0289	285
2.0389	285
2.0489	285
2.0589	285

2.0689	300
2.0789	300
2.0889	300
2.0989	309
2.1089	309
2.1189	309
2.1289	309
2.1389	309
2.1489	306
2.1589	304
2.1689	314
2.1789	329
2.1889	304
2.1989	304
2.2089	304
2.2189	304
2.2289	280
2.2389	280
2.2489	280
2.2589	280
2.2689	280
2.2789	280
2.2889	280
3.0189	280
3.0289	280
3.0389	280
3.0489	280
3.0589	280
3.0689	280
3.0789	269
3.0889	269
3.0989	269
3.1089	170
3.1189	170
3.1289	170
3.1389	170
3.1489	182
3.1589	182
3.1689	182
3.1789	182
3.1889	182
3.1989	182

3.2089	182	
3.2189	182	
3.2289	182	
3.2389	182	
3.2489	182	
3.2589	182	
3.2689	182	
3.2789	182	
3.2889	182	
3.2989	182	
3.3089	202	
3.3189	202	23525
4.0189	193	
4.0289	202	
4.0389	192	
4.0489	192	
4.0589	192	
4.0689	192	
4.0789	200	
4.0889	200	
4.0989	200	
4.1089	168	
4.1189	168	
4.1289	168	
4.1389	178	
4.1489	260	
4.1589	260	
4.1689	260	
4.1789	260	
4.1889	260	
4.1989	260	
4.2089	185	
4.2189	212	
4.2289	212	
4.2389	212	
4.2489	273	
4.2589	272	
4.2689	272	
4.2789	272	
4.2889	272	
4.2989	272	
4.3089	272	

5.0189	272
5.0289	272
5.0389	272
5.0489	272
5.0589	272
5.0689	272
5.0789	272
5.0889	197
5.0989	197
5.1089	197
5.1189	197
5.1289	205
5.1389	210
5.1489	210
5.1589	274
5.1689	274
5.1789	274
5.1889	274
5.1989	269
5.2089	269
5.2189	269
5.2289	269
5.2389	259
5.2489	259
5.2589	259
5.2689	269
5.2789	274
5.2889	274
5.2989	290
5.3089	290
5.3189	290
6.0189	290
6.0289	290
6.0389	290
6.0489	290
6.0589	296
6.0689	296
6.0789	287
6.0889	287
6.0989	287
6.1089	287
6.1189	287

6.1289	287	
6.1389	287	
6.1489	281	
6.1589	285	
6.1689	285	
6.1789	285	
6.1889	285	
6.1989	285	
6.2089	285	
6.2189	285	
6.2289	285	
6.2389	285	
6.2489	285	
6.2589	285	
6.2689	285	
6.2789	285	
6.2889	290	
6.2989	367	
6.3089	367	23455
7.0189	367	
7.0289	367	
7.0389	257	
7.0489	257	
7.0589	257	
7.0689	273	
7.0789	273	
7.0889	273	
7.0989	273	
7.1089	267	
7.1189	267	
7.1289	267	
7.1389	267	
7.1489	267	
7.1589	267	
7.1689	267	
7.1789	267	
7.1889	271	
7.1989	171	
7.2089	171	
7.2189	171	
7.2289	171	
7.2389	171	

7.2489	256
7.2589	256
7.2689	256
7.2789	256
7.2889	257
7.2989	257
7.3089	257
7.3189	363
8.0189	373
8.0289	373
8.0389	364
8.0489	289
8.0589	289
8.0689	289
8.0789	289
8.0889	283
8.0989	283
8.1089	283
8.1189	293
8.1289	300
8.1389	300
8.1489	360
8.1589	360
8.1689	363
8.1789	385
8.1889	385
8.1989	385
8.2089	385
8.2189	385
8.2289	385
8.2389	385
8.2489	385
8.2589	385
8.2689	385
8.2789	385
8.2889	364
8.2989	364
8.3089	366
8.3189	366
9.0189	366
9.0289	366
9.0389	300

9.0489	45	
9.0589	304	
9.0689	304	
9.0789	304	
9.0889	304	
9.0989	304	
9.1089	304	
9.1189	301	
9.1289	301	
9.1389	301	
9.1489	301	
9.1589	301	
9.1689	301	
9.1789	301	
9.1889	314	
9.1989	381	
9.2089	381	
9.2189	381	
9.2289	381	
9.2389	381	
9.2489	381	
9.2589	381	
9.2689	381	
9.2789	370	
9.2889	374	
9.2989	374	
9.3089	374	28665
10.0189	374	
10.0289	374	
10.0389	374	
10.0489	374	
10.0589	374	
10.0689	374	
10.0789	374	
10.0889	374	
10.0989	370	
10.1089	370	
10.1189	370	
10.1289	370	
10.1389	370	
10.1489	370	
10.1589	370	

10.1689	370
10.1789	370
10.1889	378
10.1989	378
10.2089	378
10.2189	378
10.2289	378
10.2389	378
10.2489	378
10.2589	385
10.2689	385
10.2789	385
10.2889	401
10.2989	385
10.3089	385
10.3189	385
11.0189	385
11.0289	385
11.0389	385
11.0489	385
11.0589	385
11.0689	385
11.0789	385
11.0889	385
11.0989	363
11.1089	367
11.1189	367
11.1289	367
11.1389	367
11.1489	367
11.1589	367
11.1689	370
11.1789	370
11.1889	370
11.1989	370
11.2089	370
11.2189	383
11.2289	383
11.2389	383
11.2489	383
11.2589	383
11.2689	383

11.2789	383		
11.2889	383		
11.2989	383		
11.3089	383		
12.0189	383		
12.0289	383		
12.0389	385		
12.0489	385		
12.0589	385		
12.0689	385		
12.0789	385		
12.0889	379		
12.0989	379		
12.1089	379		
12.1189	274		
12.1289	274		
12.1389	368		
12.1489	368		
12.1589	367		
12.1689	367		
12.1789	367		
12.1889	367		
12.1989	367		
12.2089	367		
12.2189	367		
12.2289	367		
12.2389	255		
12.2489	50		
12.2589	30		
12.2689	40		
12.2789	48		
12.2889	100		
12.2989	103		
12.3089	48		
12.3189	39	31765	107410
1.0190	127		
1.0290	355		
1.0390	355		
1.0490	355		
1.0590	355		
1.0690	355		
1.0790	355		

1.0890	363
1.0990	363
1.1090	363
1.1190	363
1.1290	376
1.1390	376
1.1490	376
1.1590	376
1.1690	376
1.1790	376
1.1890	372
1.1990	372
1.2090	372
1.2190	372
1.2290	372
1.2390	376
1.2490	369
1.2590	369
1.2690	369
1.2790	369
1.2890	369
1.2990	364
1.3090	364
1.3190	364
2.0190	368
2.0290	368
2.0390	368
2.0490	368
2.0590	368
2.0690	368
2.0790	368
2.0890	368
2.0990	368
2.1090	368
2.1190	368
2.1290	368
2.1390	368
2.1490	368
2.1590	368
2.1690	368
2.1790	368
2.1890	369

2.1990	369	
2.2090	369	
2.2190	369	
2.2290	369	
2.2390	373	
2.2490	373	
2.2590	373	
2.2690	383	
2.2790	383	
2.2890	383	
3.0190	383	
3.0290	383	
3.0390	383	
3.0490	383	
3.0590	383	
3.0690	376	
3.0790	376	
3.0890	376	
3.0990	376	
3.1090	376	
3.1190	376	
3.1290	376	
3.1390	382	
3.1490	381	
3.1590	381	
3.1690	381	
3.1790	381	
3.1890	381	
3.1990	371	
3.2090	371	
3.2190	288	
3.2290	288	
3.2390	288	
3.2490	288	
3.2590	288	
3.2690	273	
3.2790	273	
3.2890	293	
3.2990	358	
3.3090	359	
3.3190	343	32422
4.0190	360	

4.0290	266
4.0390	266
4.0490	268
4.0590	258
4.0690	258
4.0790	258
4.0890	258
4.0990	258
4.1090	258
4.1190	283
4.1290	283
4.1390	283
4.1490	278
4.1590	278
4.1690	279
4.1790	293
4.1890	293
4.1990	285
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4.2390	189
4.2490	189
4.2590	189
4.2690	200
4.2790	265
4.2890	265
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4.3090	265
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5.0890	356
5.0990	356
5.1090	356
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5.1390	356

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5.1590	356
5.1690	360
5.1790	361
5.1890	300
5.1990	300
5.2090	300
5.2190	378
5.2290	364
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5.2590	359
5.2690	359
5.2790	359
5.2890	359
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6.0590	259
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6.0890	259
6.0990	259
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6.1390	167
6.1490	178
6.1590	178
6.1690	178
6.1790	178
6.1890	178
6.1990	178
6.2090	178
6.2190	196
6.2290	198
6.2390	198
6.2490	198

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6.3090	204	24930
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7.0890	294	
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7.1090	195	
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7.1390	201	
7.1490	201	
7.1590	201	
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7.1790	282	
7.1890	282	
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8.1190	358
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8.1390	357
8.1490	357
8.1590	364
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8.1790	371
8.1890	371
8.1990	363
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4.1891	336
4.1991	334
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12.1591	352
12.1691	352
12.1791	344
12.1891	344
12.1991	344
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12.2191	343
12.2291	344

12.2391	145		
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12.2591	52		
12.2691	56		
12.2791	60		
12.2891	50		
12.2991	48		
12.3091	35		
12.3191	45	28930	126644

Results Summary				
Client:		Gallo		
Unit:		Furnace 4		
Site:		Outlet		
Parameter				
Run #:	Two	Three	Four	Average
Date	2/8/94	2/9/94	2/9/94	
Time	1319-1513	846-1044	1117-1311	
Tons Pulled/Day	365.3	365.3	365.3	
Average Duct Conditions:				
Temperature, °F	393	368	379	380
Abs. Pressure, in. Hg	29.68	30.18	30.18	30.01
Velocity, ft/sec	34.0	37.5	33.8	35.1
Volume Flow Rate:				
ACFM	76,100	83,900	75,900	78,700
SDCFM	44,700	50,800	45,400	47,000
% Moisture	4.4	5.7	5.7	5.3
% Isokinetic	100.1	100.1	102.0	100.7
Particulate Concentration Results:				
Filterable, gr/SDCF:	0.014	0.020	0.020	0.018
Condensable, gr/SDCF:	0.002	0.002	0.002	0.002
Total, gr/SDCF:	0.017	0.022	0.023	0.020
Part. Emiss. Rate Results:				
Filterable, lb/hr:	5.43	8.55	8.09	7.36
Condensable, lb/hr:	0.90	0.95	0.84	0.90
Total, lb/hr:	6.33	9.51	8.93	8.26

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