~~42.1~~
15.1

06/02/05

Mr. David Cline
Compliance Data Section (IDEM)
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

RE: Emissions Test Summary
(Nucor Steel – PPFF Baghouses)

Dear David,

Air Analysis, Inc. and Air Test Professionals, Inc. were contracted by Nucor Steel to perform air emissions sampling of their Positive Pressure Fabric Filter (PPFF) Baghouse #1 and #2, respectively. The testing was performed at the Crawfordsville, Indiana facility on April 18-19, 22, 2005. The objective of the testing was to determine compliance with 40CFR60, Subpart AAa for Particulate Matter (PM) emissions including Condensible Particulate Matter (CPM), Volatile Organic Compound (VOC) emissions, and Metals emissions.

The testing program included flow and gas analysis (US EPA Methods 1-4), particulate (US EPA Method 5/5D), condensible particulate matter (US EPA Method 202), volatile organic compound emissions (US EPA Method 25A), and metals emissions (US EPA Method 29). Listed below is a summary of the results.

Pollutant	PPFF Baghouse #1	PPFF Baghouse #2	Source Emissions
Lead	0.012 (lbs/hr)	0.002 (lbs/hr)	0.014 (lbs/hr - Pb)
Mercury	< 0.008 (lbs/hr)	< 0.016 (lbs/hr)	0.024 (lbs/hr - Hg)
Filterable (TSP)	0.0006 (gr/dscf)	0.0003 (gr/dscf)	0.0005 (gr/dscf)
+ Condensible (CPM)	0.0009 (gr/dscf)	0.0007 (gr/dscf)	0.0008 (gr/dscf)
Volatile Organic Compounds	0.00 (lbs/ton)	0.027 (lbs/ton)	0.027 (lbs/ton)

1201 N. Graham Ave. Indianapolis, Indiana 46219 ■ Office: (317) 345-1723 ■ Fax: (317) 351-0411 ■ E-mail: atp_stack@sbcglobal.net

Indiana Air Permit Compliance Testing

NUCOR STEEL CORPORATION

EAF/Melt Shop PPFF Baghouse, Crawfordsville, IN
Report on:

Particulates/PM10, Volatile Organic Compounds, Lead, Mercury

Performed by:

ΔAir Analysis, Inc.
Project Number: 302
April 18, 19, 22, 2005

(IDEM Copy)

ΔAir Analysis, Inc.
3904 Clarks Creek Road • Plainfield, Indiana • 46168
317.837.8514
877.683.TEST

ΔAir Analysis, Inc.

3904 Clarks Creek Road • Plainfield, Indiana 46168
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Certification Page

Air Analysis, Inc. represents that the information provided in this report is true and accurate. We at Air Analysis, Inc. strive to remain true to our mission, that the people involved are people of integrity, the data accurate, and the reporting timely.

Sincerely,

Michael M. Dicen, President
Air Analysis, Inc.

Date: 6-2-05

Executive Summary

Air Analysis, Inc. was contracted by Nucor Steel to perform air emissions sampling of the EAF/Melt Shop Positive Pressure Fabric Filter (PPFF) Baghouse located in Crawfordsville, Indiana, on April 18,19 and 22, 2005. The objective of the test program was to determine compliance with Indiana air permit requirements and 40CFR60, Subpart AAa. Sampling was performed for Particulate Matter (PM), Lead, Mercury and Volatile Organic Compounds (VOC). Visible emissions were also read during the above listed testing. In addition the same pollutants were tested simultaneously at the new Baghouse # 2 by Air Test Professionals, Inc. The combination of the two baghouses control emissions from the EAF/Melt Shop. The following personnel were involved with the testing program:

Air Analysis	Mike Dicen
Air Analysis	Marcus Allen
Air Analysis	Ron Stappert
Air Test Professionals, Inc.	Carlos Brown
IDEM	Steve Friend
Nucor Steel	Mark Washer

The testing program was performed utilizing US EPA Methods 1-4, 5D, 202, 29, 25A and 9.

Test Summary
Table 1

Pollutant	Location	Emissions Rate (Avgs.) lbs/hr	Pollutant Concentration gr/dscf
Lead	PPFF Baghouse	0.0121 (Pb)	0.00000118 (Pb)
Mercury		0.008 (Hg)	0.00000079 (Hg)
VOC		0.0	0.0 ppm

Pollutant	Location	Filterable PM Concentration	PM/PM10 Filterable & Condensible Concentration
Particulate	PPFF Baghouse	0.0006 (gr/dscf)	0.0009 (gr/dscf)

VISIBLE EMISSIONS

Table 1-2

Date	Time	Source	Opacity (EPA RM 9)
04/18/05 04/19/05 4/22/05	12:47 – 13:47 8:20 -16:45 8:33-14:14	Melt Shop	0%
04/18/05 04/19/05 4/22/05	12:47 – 13:47 8:20 -16:45 8:33-14:14	East Baghouse Roof Monitors	0%
04/18/05 04/19/05 4/22/05	12:47 – 13:47 8:20 -16:45 8:33-14:14	West Baghouse Roof Monitors	0%

Results

PM/PM10 Test Conditions

Table 2-1

Gas Conditions		1	2	3	Avg
Ts	Stack Temperature	166.2	174.4	151.6	164.07
Bwo	Moisture (volume %)	1.78	2.69	1.79	2.09
O2	Oxygen (dry volume %)	21	21	21	21
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	1,409,446	1,425,294	1,366,239	1,400, 327
Qstd	Standard Conditions (dscfm)	1,180,006	1,166, 944	1,171,136	1, 172, 695
Pollutant Results					
Ec	Emission Rate, (gr/dscf) PM	0.0008	0.0006	0.0004	0.0006
E(me)	Emission Rate, (lbs/hr) PM	8.00	5.8	4.3	6.0
Ec filter + condensible	Emissions Rate, (gr/dscf) PM PM10	0.0013	0.0006	0.0008	0.0009

METALS and VOC EMISSIONS

Table 2-2

Gas Conditions		1	2	3	Avg
Ts	Stack Temperature	166 2	141.6	174.4	160.8
Bwo	Moisture (volume %)	3.85	2.29	1.99	2.71
O2	Oxygen (dry volume %)	21	21	21	21
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	1,414,994	1,401,034	1,424,305	1,413, 444
Qstd	Standard Conditions (dscfm)	1,206,092	1,214,572	1,174,947	1,198,537
Pollutant Results					
Er	Emission Rate, (lbs/hr) Lead	0.0012	0.0126	0.0225	0.00121
Er	Emission Rate, (lbs/hr) Mercury	0.0061	0.012	0.0064	0.0082
ErVOC	Emission Rate, (lbs/hr) VOC	0	0	0	0

NOTE: For Particulates and Metals testing, velocity head setting for Method 5D compartment test runs were derived from Inlet volumetric flow rates. Flow rate calculations were corrected for compartment conditions: temperature, moisture and gas analysis.
A minimum of 160 dscf at 288 minutes was sampled during each test period.

NOTE: Metals emissions are based on total baghouse (16 compartment) volumetric flow rates for the calculation of mass emissions (lb/hr). Two hour sample periods were taken.

Table 3

EAF (PPFF) Baghouse Diagram

1. Nucor Steel PPFF baghouse consists of 16 compartment housing with an area of 366"d x 260"w per compartment
2. Testing was conducted at 12 of the 16 compartment housings
3. Three (3) sample runs were conducted at four compartments per sample run. Total area of the baghouse is 366" d x 4160" w.

Compartment unsampled	Compartment unsampled	Compartment # 6 Run 2B PM Run 2 A Metals	Compartment #5 Run 2A PM Run 1D Metals	Compartment # 4 Run 1D PM Run 1C Metals	Compartment # 3 Run 1C PM Run 1B Metals	Compartment # 2 Run 1B PM Run 1A Metals	Compartment # 1 Run1A PM Run 3D Metals
Roof monitor area							
Compartment unsampled	Compartment unsampled	Compartment # 7 Run 2C PM Run 2 B Metals	Compartment # 8 Run 2D PM Run 2C Metals	Compartment # 9 Run 3A PM Run 2 D Metals	Compartment # 10 Run 3B PM Run 3 A Metals	Compartment # 11 Run 3C PM Run 3 B Metals	Compartment # 12 Run 3D PM Run 3 C Metals

3-1 PROCESS DESCRIPTION

Nucor steel operates a meltshop, which is comprised of the following process units: Two (2) EAF units, one (1) ladle metallurgy station, one (1) AOD with two (2) continuous casters. Of these, the two EAF units, the AOD, and the two caster units, each is evacuated through the meltshop positive pressure baghouse and the new baghouse.

The EAF units melt various grades of scrap metal, scrap substitute, pebbled lime, and coke into molten steel. The molten steel is refined into various grades of carbon steel at the ladle metallurgy station or refined into stainless steel at the AOD. The molten steel from the ladle metallurgy station or AOD is cast into continuous strips at the tow continuous casters.

The emissions from the EAF units, AOD and casters are generated from melting, refining, charging, tapping and casting operations and are captured in a direct shell evacuation (DEC) system and overhead canopy hoods. All captured emissions are evacuated through the positive pressure fabric filter (PPFF) baghouse compartments.

The testing reported in this document was performed at 12 of the 16 EAF (PPFF) baghouse compartments.

Methodology

The sampling procedures used by Air Analysis, Inc. are as follows:
Title 40 CFR Part 60 Appendix A
Method 1 "Sampling of Velocity Traverses for Stationary Sources"
Method 2 "Determining of Stack Gas Velocity and Volumetric Flow Rate"
Method 3 "Gas Analysis for the Determination of Molecular Weight"
Method 4 "Determination of Moisture Content in Stack Gas"
Method 5D "Determining of Particulate Emissions from PPFF Souces"
Method 29 "Determination of Metals Emissions from Stationary Sources"
Method 25A "Determination of Volatile Organic Compounds from Stationary Sources, Analyzer Method"
Method 9 "Visual Determination of the Opacity Emissions"
Title 40 CFR Part 51 Appendix M
Method 202 "Determination of Condensible Emissions from Stationary Sources"

SAMPLE POINT DETERMINATION-EPA METHOD 1
Sampling point locations were determined according to EPA Reference Method 1.

Locations	Dimensions	Points / Ports	Total Points
Inlet	14.67'W x 23.13'	4/ 8	32
Compartment (ea)	21.67' x 30.50'	6	12

** Exact measure points and distances to disturbances are listed in Appendix- Field Data

VELOCITY AND VOLUMETRIC FLOW RATE – EPA METHOD 2
EPA Method 2 was used to determine the gas velocity and flow rate at the stack. Figure 4-2 includes the components of the EPA Method 2 sampling apparatus. Each set of velocity determinations included the measurement of gas velocity pressure and gas temperature at each of the Method 1 determined traverse points. The velocity pressures were measures with a Type S pitot tube. Gas temperature measurements made with a Type K thermocouple and digital pyrometer.

GAS COMPOSITION AND MOLECULAR WEIGHT – EPA METHOD 3
In order to determine the oxygen and carbon dioxide concentrations, a sample of gas was obtained and analyzed in accordance with EPA Method 3. The gas sample was collected using a Fyrite analyzer. The results were used to determine gas molecular weight.

MOISTURE CONTENT – EPA METHOD 4
The flue gas moisture content at the testing locations was determined in accordance with EPA Method 4. Figure 4-2 includes the Method 4 sampling components. The gas moisture was determined by quantitatively condensing moisture in the chilled impingers and silica absorption. The amount of moisture condensed was determined gravimetrically. A dry gas meter was used to measure the volume of gas sampled. Moisture content is used to determine stack gas velocity.

PARTICULATE DETERMINATION – EPA METHOD 5/202

Stack gas is withdrawn isokinetically and particulate matter is collected on the nozzle, probe and filter. The probe temperature and filter are maintained at temperatures of 248 degrees F (+/- 25 deg. F). The impinger temperature and exit gas is maintained at temperatures at or below 68 degrees F. The nozzle, probe and glass filter containers are rinsed with acetone and the rinse is captured in a sealed glass container.
(Method 202 only)The impingers and connecting glassware are rinsed twice with de-ionized water and captured in a sealed container. Two rinses of methylene chloride are captured and stored in a sealed glass container

VOC DETERMINATION – EPA METHOD 25A

Stack gas is withdrawn at a constant sample rate through a heated sample line and glass fiber filter to a flame ionization analyzer. Hydrogen is used as fuel as well as air is used for oxidation. Probe temperature and filter are maintained at temperatures of 248 degrees F (+/- 25 deg. F). Intensity of the flame when the organics are oxidized is directly proportional to the organic concentration. VOC is determined as volume concentration equivalents of the calibration gas or as carbon equivalents.
EPA protocol gas as high concentration is introduced to the analyzer and allowed to set the high span at the concentration level. Thirty percent and fifty percent of span gases are introduced to the analyzer to check for linearity. Zero gas is used to purge and level off the analyzer when no organics are present.

Metals DETERMINATION – EPA METHOD 29

Stack gas is withdrawn isokinetically and particulate matter is collected in glass/quartz nozzle, probe and filter. The probe temperature and filter are maintained at temperatures of 248 degrees F (+/- 25 deg. F). The impinger temperature and exit gas is maintained at temperatures at or below 68 degrees F. Metals are caught in the nozzle, probe, filter and glassware and backhalf impingers. The first two impingers contain 100 mls each of HNO3/ H2O2. The next impinger is empty. The next two impingers contain 100 mls each of acidic KMNO4. The nozzle, probe and glass filter containers are rinsed with water/ HNO3 and the rinse is captured in a sealed glass container.
The impingers and connecting glassware are rinsed twice with the absorbent solutions and water and captured in a sealed container.

OPACITY – EPA METHOD 9

Stack opacity readings are taken for 60 minutes at 15 second intervals *for NSPS* and 30 minutes at 15 intervals for *state permitted, non-federal sources*, by a certified visible emissions reader. The visible emissions reading are conducted during each of the particulate test runs. The results are reported as an average opacity reading for the half an hour period. A copy of the visible reader's current certification is included in the Appendix.

APPENDIX I SAMPLE CALCULATIONS

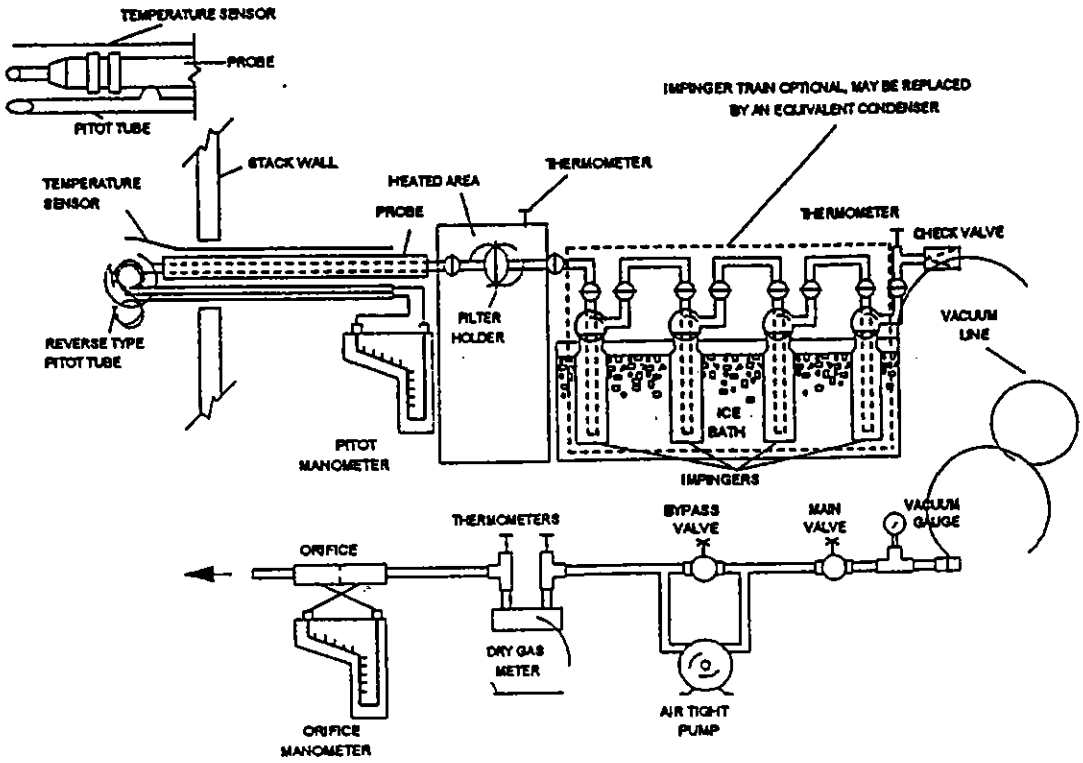


Figure 5-1. Metals & Particulate Sampling Train

SAMPLE CALCULATIONS

The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

1. Volume of water collected (wscf)

$$V_{wstd}=(0.04707)(V_{lc})$$

Where:

V_{lc}	total volume of liquid collected in impingers and silica gel (ml)
V_{wstd}	volume of water collected at standard conditions (ft^3)
0.04707	conversion factor (ft^3/ml)

2. Volume of gas metered, standard conditions (dscf)

$$V_{mstd}=\frac{(17.64)(V_m)(P_{baro}+\frac{\Delta H}{13.6})(Y_d)}{(460+T_m)}$$

Where:

P_{baro}	barometric pressure (in Hg)
T_m	average dry gas meter temperature (°F)
V_m	volume of gas sample through dry gas meter at meter conditions (ft^3)
V_{mstd}	volume of gas sample through dry gas meter at standard conditions (ft^3)
Y_d	gas meter correction factor (dimensionless)
DH	average pressure drop across meter box orifice (in H_2O)
17.64	conversion factor (°R/in Hg)
13.6	conversion factor (in H_2O/in Hg)
460	°F to °R conversion constant

3. Sample gas pressure (in Hg)

$$P_s=P_{baro}+(\frac{P_g}{13.6})$$

Where:

P_{baro}	barometric pressure (in Hg)
P_g	sample gas static pressure (in H_2O)
P_s	absolute sample gas pressure (in H_2O)
13.6	conversion factor (in H_2O/in Hg)

4. Actual vapor pressure (in Hg)

$$P_v = P_s$$

Where:

P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

5. Moisture Content (%)

$$B_{wo} = \frac{V_{wstd}}{V_{mstd} + V_{wstd}}$$

Where:

B_{wo}	proportion of water vapor in the gas stream by volume
V_{mstd}	volume of gas sample through the dry gas meter at standard conditions (ft^3)
V_{wstd}	volume of water collected at standard conditions (ft^3)

6. Saturated moisture content (%)

$$B_{ws} = \frac{(P_v)}{(P_s)}$$

Where:

B_{ws}	proportion of water vapor in gas stream by volume at saturated conditions (%)
P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

7. Molecular weight of dry gas stream (lb/lb-mole)

$$M_d = M_{CO2}\frac{(CO2)}{(100)} + M_{O2}\frac{(O2)}{(100)} + M_{CO+N2}\frac{(CO+N2)}{(100)}$$

Where:

Md	dry molecular weight of sample gas (lb/lb-mole)
M_{CO2}	molecular weight of carbon dioxide (lb/lb-mole)
M_{O2}	molecular weight of oxygen (lb/lb-mole)
M_{CO+N2}	molecular weight of carbon monoxide and nitrogen (lb/lb-mole)
CO_2	proportion of carbon dioxide in the gas stream by volume (%)
O_2	proportion of oxygen in the gas stream by volume (%)
$CO + N_2$	proportion of carbon monoxide and nitrogen in gas stream by volume (%)
100	conversion factor, %

8. Molecular weight of sample gas (lb/lb-mole)

$$M_s=(M_d)(1-B_{ws})+(M_{H_2O})(B_{ws})$$

Where:

Md	dry molecular weight of sample gas (lb/lb-mole)
B_{ws}	proportion of water vapor in the gas stream by volume
M_{H2O}	molecular weight of water (lb/lb-mole)
Ms	molecular weight of sample gas, wet basis (lb/lb-mole)

9. Velocity of sample gas (ft/sec)

$$V_s=(K_p)(C_p)(\sqrt{\Delta p})\sqrt{\frac{(t_s+460)}{(M_s)(P_s)}}$$

Where:

Kp	velocity pressure coefficient (dimensionless)
Cp	pitot tube constant
Ms	molecular weight of sample gas, wet basis (lb/lb-mole)
Ps	absolute sample gas pressure (in. Hg)
t_s	average sample gas temperature (°F)
Vs	average sample gas velocity (ft/sec)
460	°F to °R conversion factor

10. Total flow of sample gas (acfm)

$$Q_s=(60)(A_s)(V_s)$$

Where:

As	cross section area of sampling location (ft^2)
Qs	volumetric flow rate at actual conditions (acfm)
Vs	sample gas velocity (ft/sec)
60	conversion factor, seconds to minutes

11. Total flow of sample gas (dscfm)

$$Q_{std} = \frac{(Q_a)(P_s)(17.64)(1-B_{wo})}{(t_s+460)}$$

Where:

Bwo	proportion of water vapor in the gas stream by volume
Ps	absolute sample gas pressure (in. Hg)
Qa	volumetric flow rate at actual conditions (acfm)
Qstd	volumetric flow rate at standard conditions (dscfm)
t_s	average sample gas temperature (°F)
17.64	conversion factor, (°R/in.Hg)
460	°F to °R conversion factor

12. Total flow of sample gas (dscfh)

$$Q_{std/hr} = [\frac{(Q_a)(P_s)(17.64)(1-B_{wo})}{(t_s+460)}](60)$$

Where:

Bwo	proportion of water vapor in the gas stream by volume
Ps	absolute sample gas pressure (in. Hg)
Qa	volumetric flow rate at actual conditions (acfm)
Qstd/hr	volumetric flow rate at standard conditions (dscfmx60)
t_s	average sample gas temperature (°F)
17.64	conversion factor, (°R/in.Hg)
460	°F to °R conversion factor

13. Percent Isokinetic (%)

$$I = \frac{(0.09450)(T_s)(V_{mstd})}{(P_s)(V_s)\left(\frac{(D_n)^2(\pi)}{(144)(4)}\right)(\theta)(1-B_{wo})}$$

Where:

Dn	diameter of nozzle, inches
Bwo	proportion of water vapor int he gas stream by volume
I	percent of isokinetic sampling (%)
Ps	absolute sample gas pressure (in. Hg)
T_s	average sample gas temperature (°R)
V_{mstd}	volume of gas sample through the dry gas meter at standard conditions (ft^3)
Vs	average sample gas velocity (ft/sec)
ϑ	total sample time, minutes
0.09450	constant

14. Pollutant concentration (gr/dscf)

$$C_{gr/dscf} = \frac{(15.43)(m_n)}{V_{mstd}}$$

Where:

$C_{gr/dscf}$	measured concentration in gas stream, gr/dscf
Mn	pollutant collected, corrected for reagent blank, grams
V_{mstd}	volume of gas sample through the dry gas meter at standard conditions (ft^3)
15.43	conversion factor, grams to grains

15. Pollutant Emissions, Mass Emissions Rate lbs/hr

$$E_{lb/hr} = \frac{(\mu g_{HCl})(2.2046e-9)(Q_{std})(60)}{(V_{std})}$$

Where:

$E_{lbs/hr}$	Mass emissions rate, pounds per hour
µg pollutant	micrograms of pollutant emissions
Q_{std}	volumetric flow rate at standard conditions, dry basis (dscfm)
V_{std}	Volume Standard conditions
2.2046e-9	conversion factor, pounds per microgram
60	conversion factor, minutes per hour

APPENDIX II — FIELD DATA PRINTOUTS

STACK EMISSION SUMMARY				

SOURCE TESTED: PPFF Baghouse
COMPANY NAME: Nucor Steel
DATE OF TEST: 04/18/05

Particulate Concentration	Run 1	Run 2	Run 3	Average
Filterable (gr/dscf)	0.0008	0.0006	0.0004	0.0006
Filterable (lbs/hr)	8.0078	5.7770	4.2822	6.0223
Condensible (lbs/hr)	4.7665	0.4311	3.3009	2.8328
Filterable + Consensible (lbs/hr)	12.7743	6.2081	7.5831	8.8552
Filterable + Consensible (gr/dscf)	0.0013	0.0006	0.0008	0.0009
Avg. Stack Vol. Flow Rate				
ACFM	1409446.28	1425294.064	1366239.54	1400326.628
DSCFM	1180005.586	1166943.771	1171136.419	1172695.259
Avg. Stack Temp.	166.233	174.400	151.570	164.068
Stack Gas Velocity	2.222	2.247	2.154	2.207
Avg. Velocity Head	0.0013	0.0013	0.0013	0.0013
Avg. Sq. Rt of Delta P	0.0363	0.0364	0.0356	0.0361
	ISOKINETIC TESTING SUMMARY			
%Isokinetics:	93.43	103.30	99.83	98.85
Allowable isokinetic 90-110%				
% Moisture of Stack Gas	1.78%	2.69%	1.79%	2.09%
Sample Volume	163.732	179.021	173.644	172.132

IN → 2.739
OR → 0.093

COMPANY NAME: Nucor Steel
LOCATION: Crawfordsville
SOURCE TESTED: PPFF Baghouse
DATE OF TEST: 04/18/05
RUN NO.: 1
Particulate

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	63
Vw(std)	2.964

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	129.665
Vm	187.680
Pb(inches Hg)	30.140
delta H	1.307
gamma	0.961
Vm(std)	163.732

Moisture Content of Stack Gas, Bwo

Bwo	1.78%
1-Bwo	98.22%

Molecular Weight of Stack Gas, Ms

Ms	28.65

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.14

Stack Gas Velocity, Vs, fps

Cp	0.84	
sqr(delta p)	0.036	0.00122
Ts	166.233	
Vs	2.222	

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1409446

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd (dscf/m)	=	1180005.59
Qstd (dscf/hr)	=	70800335.18

Velocity at the Nozzle, Vn

Dia. of Nozzle		An(nozzle):	0.005454
Time of Run	288		
Vn	2.08		

% Isokinetic, %I

%I	93.43

% Isokinetic measured from intermediate values

%I	93.79

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn (g)	=	0.0084	0.0050	0.0134
PMR	(lb/hr) =	8.0078	4.7665	12.7743
PMR	(lb/MMBtu) =	-0.2312	0.0000	-0.2312
		Filterable	*Condensible*	*Total*

Grains per acf

gr/acf	=	0.0007	0.0004

Grains per dscf

gr/dscf	=	0.0008	0.0005	0.0012628

Grains per mg/dscf

mg/dscf	=	0.6831	0.6831

FIELD DATA

K - Factor = 990.00

Start Time	12:50
Stop Time	19:36

Run 1	Delta P	Square Delta P	Volume	Delta H2	Stack Temp	DGM	DGM
1	0.00132	0.036		1.307	166.233	100	101
2	0.00132	0.036		1.307	166.233	102	102
3	0.00132	0.036		1.307	166.233	104	102
4	0.00132	0.036		1.307	166.233	104	101
5	0.00132	0.036		1.307	166.233	100	103
6	0.00132	0.036		1.307	166.233	103	99
7	0.00132	0.036		1.307	166.233	104	98
8	0.00132	0.036		1.307	166.233	107	98
9	0.00132	0.036		1.307	166.233	108	99
10	0.00132	0.036		1.307	166.233	107	100
11	0.00132	0.036		1.307	166.233	106	101
12	0.00132	0.036		1.307	166.233	108	101
13	0.00132	0.036		1.307	166.233	108	104
14	0.00132	0.036		1.307	166.233	108	103
15	0.00132	0.036		1.307	166.233	110	104
16	0.00132	0.036		1.307	166.233	110	104
17	0.00132	0.036		1.307	166.233	110	103
18	0.00132	0.036		1.307	166.233	107	103
19	0.00132	0.036		1.307	166.233	106	103
20	0.00132	0.036		1.307	166.233	109	102
21	0.00132	0.036		1.307	166.233	108	102
22	0.00132	0.036		1.307	166.233	108	102
23	0.00132	0.036		1.307	166.233	109	102
24	0.00132	0.036		1.307	166.233	110	102
25	0.00132	0.036		1.307	166.233	1111	102
26	0.00132	0.036		1.307	166.233	112	106
27	0.00132	0.036		1.307	166.233	112	107
28	0.00132	0.036		1.307	166.233	115	107
29	0.00132	0.036		1.307	166.233	115	108
30	0.00132	0.036		1.307	166.233	110	108
31	0.00132	0.036		1.307	166.233	117	109
32	0.00132	0.036		1.307	166.233	118	110
33	0.00132	0.036		1.307	166.233	118	110
34	0.00132	0.036		1.307	166.233	116	1112
35	0.00132	0.036		1.307	166.233	119	112
36	0.00132	0.036		1.307	166.233	120	112
37	0.00132	0.036		1.307	166.233	117	113
38	0.00132	0.036		1.307	166.233	121	113
39	0.00132	0.036		1.307	166.233	121	114
40	0.00132	0.036		1.307	166.233	123	114
41	0.00132	0.036		1.307	166.233	123	114
42	0.00132	0.036		1.307	166.233	121	114
43	0.00132	0.036		1.307	166.233	116	114
44	0.00132	0.036		1.307	166.233	117	114
45	0.00132	0.036		1.307	166.233	117	112
46	0.00132	0.036	952.750	1.307	166.233	117	113
47	0.00132	0.036	765.070	1.307	166.233	116	112
48	0.00132	0.036		1.307	166.233	116	112

Avg. Dp	Avg. Sq. Dp	Volume	Delta H	Avg. Ts(F)		Avg. Meter T(F)
0.001	0.036	187.680	1.307	166.233		129.665

COMPANY NAME:	Nucor Steel
LOCATION:	Crawfordsville
SOURCE TESTED:	PPFF Baghouse
DATE OF TEST:	04/18/05
RUN NO.:	2
POLLUTANT:	Particulate

Enter Data

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	105.3
Vw(std)	4.953

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	101.340
Vm	195.278
Pb(inches Hg)	30.140
delta H	1.317
gamma	0.961
Vm(std)	179.021

Moisture Content of Stack Gas, Bwo

Bwo	2.69%
1-Bwo	97.31%

Molecular Weight of Stack Gas, Ms

Ms	28.55

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.14

Stack Gas Velocity, Vs, fps

Cp	0.84
sqr(delta p)	0.036
Ts	174.400
Vs	2.247

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1425294

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd.	1166943.77
Qstd (dscf/hr) =	70016626.26

Velocity at the Nozzle, Vn

Dia. of Nozzle	1	An(nozzle) 0.005454
Time of Run	288	
Vn	2.32	

% Isokinetic, %I

%I	103.30
% Isokinetic measured from intermediate values	
%I	103.69

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn (g) =	0.0067	0.0005	0.0072
PMR (lb/hr) =	5.7770	0.4311	6.2081
PMR (lb/MMBtu) =	-0.1686	0.0000	-0.1686
	Filterable	*Condensible*	*Total*

Grains per acf

gr/acf =	0.0005	3.606E-05

Grains per dscf

gr/dscf =	0.0006	4.30954E-05	0.000621

Grains per mg/dscf

mg/dscf =	0.4966		0.4966

FIELD DATA

K - Factor = 990.00

start time	8:20
end time	16:08

Run	Delta P	Square Delta P	Volume	Delta H	Stack Temp	DGMin	DGMout
1	0.00133	0.036		1.317	174	96	92
2	0.00133	0.036		1.317	174	99	92
3	0.00133	0.036		1.317	174	100	93
4	0.00133	0.036		1.317	174	100	94
5	0.00133	0.036		1.317	174	99	95
6	0.00133	0.036		1.317	174	99	96
7	0.00133	0.036		1.317	174	98	96
8	0.00133	0.036		1.317	174	102	96
9	0.00133	0.036		1.317	174	105	96
10	0.00133	0.036		1.317	174	108	98
11	0.00133	0.036		1.317	174	109	99
12	0.00133	0.036		1.317	174	109	100
13	0.00133	0.036		1.317	174	107	102
14	0.00133	0.036		1.317	174	110	98
15	0.00133	0.036		1.317	174	108	104
16	0.00133	0.036		1.317	174	99	98
17	0.00133	0.036		1.317	174	100	98
18	0.00133	0.036		1.317	174	101	98
19	0.00133	0.036		1.317	174	102	99
20	0.00133	0.036		1.317	174	102	99
21	0.00133	0.036		1.317	174	100	99
22	0.00133	0.036		1.317	174	98	98
23	0.00133	0.036		1.317	174	98	98
24	0.00133	0.036		1.317	174	96	98
25	0.00133	0.036		1.317	174	98	97
26	0.00133	0.036		1.317	174	100	97
27	0.00133	0.036		1.317	174	102	98
28	0.00133	0.036		1.317	174	104	99
29	0.00133	0.036		1.317	174	103	101
30	0.00133	0.036		1.317	174	104	101
31	0.00133	0.036		1.317	174	103	100
32	0.00133	0.036		1.317	174	102	101
33	0.00133	0.036		1.317	174	100	100
34	0.00133	0.036		1.317	174	99	100
35	0.00133	0.036		1.317	174	100	100
36	0.00133	0.036		1.317	174	101	100
37	0.00133	0.036		1.317	174	101	99
38	0.00133	0.036		1.317	174	102	100
39	0.00133	0.036		1.317	174	102	100
40	0.00133	0.036		1.317	174	110	101
41	0.00133	0.036		1.317	174	110	102
42	0.00133	0.036		1.317	174	110	102
43	0.00133	0.036		1.317	174	111	103
44	0.00133	0.036		1.317	174	111	103
45	0.00133	0.036		1.317	174	111	104
46	0.00133	0.036	1156.969	1.317	174	110	103
47	0.00133	0.036	961.691	1.317	174	110	104
48	0.00133	0.036		1.317	174	110	104

Avg. Dp	Avg. Sq. Dp	Volume	Delta H	Avg Ts (F)		Avg Meter T (F)
0.001	0.036	195.278	1.317	174.400		101.340

COMPANY NAME: Nucor Steel
LOCATION: Crawfordsville
SOURCE TESTED: PPFF Baghouse
DATE OF TEST: 04/18/05
RUN NO.: 3
POLLUTANT: Particulate

Enter Data

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	67.2
Vw(std)	3.161

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	84.219
Vm	183.712
Pb(inches Hg)	30.140
delta H	1.143
gamma	0.961
Vm(std)	173.644

Moisture Content of Stack Gas, Bwo

Bwo	1.79%
1-Bwo	98.21%

Molecular Weight of Stack Gas, Ms

Ms	28.65

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.14

Stack Gas Velocity, Vs, fps

Cp	0.84
sqr(delta p)	0.036
Ts	151.570
Vs	2.154

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1366240

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd.	1171136.42
Qstd (dscf/hr) =	70268185.13

Velocity at the Nozzle, Vn

Dia. of Nozzle	1	An(nozzle)	0.005454
Time of Run	288		
Vn	2.15		

% Isokinetic, %I

%I	99.83

% Isokinetic measured from Intermediate values

%I	100.22

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn (g) =	0.0048	0.0037	0.0085
PMR (lb/hr) =	4.2822	3.8009	7.58314
PMR (lb/MMBtu) =	-0.12455	0.0000	-0.12455
	Filterable	*Condensib*	*Total*

Grains per acf

gr/acf =	0.0004	0.0003	

Grains per dscf

gr/dscf =	0.0004	0.0003	0.000755

Grains per mg/dscf

mg/dscf =	0.376937824	0.376938

FIELD DATA

K - Factor = 900.00

	Start Time	6:33
	Stop Time	14:14

Run	Dn(in)	Sq rt(Delta P)	Volume	Delta H	Gas Temp	DGM	DGM
1	0.00127	0.036		1.143	151.57	76	64
2	0.00127	0.036		1.143	151.57	76	64
3	0.00127	0.036		1.143	151.57	78	65
4	0.00127	0.036		1.143	151.57	77	66
5	0.00127	0.036		1.143	151.57	77	67
6	0.00127	0.036		1.143	151.57	78	68
7	0.00127	0.036		1.143	151.57	74	69
8	0.00127	0.036		1.143	151.57	77	69
9	0.00127	0.036		1.143	151.57	78	69
10	0.00127	0.036		1.143	151.57	80	70
11	0.00127	0.036		1.143	151.57	83	72
12	0.00127	0.036		1.143	151.57	81	72
13	0.00127	0.036		1.143	151.57	78	73
14	0.00127	0.036		1.143	151.57	78	73
15	0.00127	0.036		1.143	151.57	80	73
16	0.00127	0.036		1.143	151.57	80	73
17	0.00127	0.036		1.143	151.57	84	74
18	0.00127	0.036		1.143	151.57	84	77
19	0.00127	0.036		1.143	151.57	89	76
20	0.00127	0.036		1.143	151.57	89	78
21	0.00127	0.036		1.143	151.57	83	78
22	0.00127	0.036		1.143	151.57	92	80
23	0.00127	0.036		1.143	151.57	83	83
24	0.00127	0.036		1.143	151.57	86	82
25	0.00127	0.036		1.143	151.57	86	82
26	0.00127	0.036		1.143	151.57	86	81
27	0.00127	0.036		1.143	151.57	92	82
28	0.00127	0.036	341.712	1.143	151.57	96	83
29	0.00127	0.036	158.000	1.143	151.57	97	85
30	0.00127	0.036		1.143	151.57	95	86
31	0.00127	0.036		1.143	151.57	95	86
32	0.00127	0.036		1.143	151.57	95	87
33	0.00127	0.036		1.143	151.57	95	87
34	0.00127	0.036		1.143	151.57	97	87
35	0.00127	0.036		1.143	151.57	99	87
36	0.00127	0.036		1.143	151.57	102	89
37	0.00127	0.036		1.143	151.57	104	91
38	0.00127	0.036		1.143	151.57	104	92
39	0.00127	0.036		1.143	151.57	97	93
40	0.00127	0.036		1.143	151.57	93	91
41	0.00127	0.036		1.143	151.57	91	90
42	0.00127	0.036		1.143	151.57	92	88
43	0.00127	0.036		1.143	151.57	95	88
44	0.00127	0.036		1.143	151.57	97	93
45	0.00127	0.036		1.143	151.57	98	89
46	0.00127	0.036		1.143	151.57	97	89
47	0.00127	0.036		1.143	151.57	96	89
48	0.00127	0.036		1.143	151.57	96	89

Avg. Dn	Avg. Sq. Dp	Volume	Delta H	Avg. Ts(F)		Avg. Meter T(F)
0.001	0.036	183.712	1.143	151.570		84.219

STACK EMISSION SUMMARY				

SOURCE TESTED: **PPFF Baghouse**
COMPANY NAME: Nucor Steel
DATE OF TEST: 04/18/05

Pollutant Emissions	**Run 1**	**Run 2**	**Run 3**	**Average**
Lead (gr/dscf)	1.1778E-07	1.2101E-06	2.2335E-06	1.1871E-06
Mercury (gr/dscf)	5.8889E-07	1.1549E-06	6.3212E-07	7.9197E-07
Lead (lbs/hr)	0.0012	0.0126	0.0225	0.0121
Mercury (lbs/hr)	0.0061	0.0120	0.0064	0.0082
VOC (ppm as propane)	0.0000	0.0000	0.0000	0.0000
VOC as carbon (lbs/hr)	0.0000	0.0000	0.0000	0.0000
Avg. Stack Vol. Flow Rate				
ACFM	1,414,994.21	1,401,033.92	1,424,304.97	1,413,444.37
DSCFM	1,206,092.24	1,214,572.10	1,174,947.16	1,198,537.17
Avg. Stack Temp.	166.233	141.630	174.400	160.754
Stack Gas Velocity	2.230	2.208	2.245	2.228
Avg. Velocity Head	0.0013	0.0014	0.0013	0.0013
Avg. Sq. Rt of Delta P	0.0363	0.0368	0.0365	0.0365
	ISOKINETIC TESTING SUMMARY			
%Isokinetics:	91.28	96.70	100.72	96.23
Allowable isokinetic 90-110%				
% Moisture of Stack Gas	3.85%	2.29%	1.99%	2.71%
Sample Volume	65.505	72.682	73.229	70.472

374.9

COMPANY NAME: Nucor Steel
LOCATION: Crawfordsville
SOURCE TESTED: PPFF Baghouse
DATE OF TEST: 04/18/05
RUN NO.: 1
Metals

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	55.7
Vw(std)	2.620

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	114.667
Vm	72.773
Pb(inches Hg)	30.140
delta H	1.305
gamma	0.966
Vm(std)	65.605

Moisture Content of Stack Gas, Bwo

Bwo	3.85%
1-Bwo	96.15%

Molecular Weight of Stack Gas, Ms

Ms	28.42

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.14

Stack Gas Velocity, Vs, fps

Cp	0.84
sqr(delta p)	0.036
Ts	166.233
Vs	2.230

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1414994

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd (dscf/m)	=	1206092.24
Qstd (dscf/hr)	=	72365534.28

Velocity at the Nozzle, Vn

Dia. of Nozzle	1	An(nozzle): 0.005454
Time of Run	120	
Vn	2.04	

% Isokinetic, %I

%I	91.28

% Isokinetic measured from intermediate values

%I	91.83

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn (g)	=	0.0000005	0.0000025	0
PMR	(lb/hr) =	0.0012	0.0061	0.0000
PMR	(lb/MMBtu) =	0.0000	0.0000	
		Lead	*Mercury*	*VOC*

FIELD DATA

K - Factor = 869.00

Start time	12:50
Stop time	15:50

1	0.00132	0.036		1.305	166.233	101	104
2	0.00132	0.036		1.305	166.233	99	103
3	0.00132	0.036		1.305	166.233	99	103
4	0.00132	0.036		1.305	166.233	99	102
5	0.00132	0.036		1.305	166.233	99	101
6	0.00132	0.036		1.305	166.233	99	101
7	0.00132	0.036		1.305	166.233	98	99
8	0.00132	0.036		1.305	166.233	97	98
9	0.00132	0.036		1.305	166.233	97	97
10	0.00132	0.036		1.305	166.233	97	98
11	0.00132	0.036		1.305	166.233	102	98
12	0.00132	0.036		1.305	166.233	100	98
13	0.00132	0.036		1.305	166.233	111	96
14	0.00132	0.036		1.305	166.233	111	97
15	0.00132	0.036		1.305	166.233	111	96
16	0.00132	0.036		1.305	166.233	111	98
17	0.00132	0.036		1.305	166.233	111	98
18	0.00132	0.036		1.305	166.233	111	98
19	0.00132	0.036		1.305	166.233	111	99
20	0.00132	0.036		1.305	166.233	109	99
21	0.00132	0.036		1.305	166.233	110	99
22	0.00132	0.036		1.305	166.233	111	100
23	0.00132	0.036		1.305	166.233	111	100
24	0.00132	0.036		1.305	166.233	111	100
25	0.00132	0.036		1.305	166.233	111	103
26	0.00132	0.036		1.305	166.233	112	104
27	0.00132	0.036		1.305	166.233	111	104
28	0.00132	0.036		1.305	166.233	111	104
29	0.00132	0.036		1.305	166.233	111	104
30	0.00132	0.036		1.305	166.233	111	104
31	0.00132	0.036		1.305	166.233	111	104
32	0.00132	0.036		1.305	166.233	112	104
33	0.00132	0.036		1.305	166.233	112	104
34	0.00132	0.036		1.305	166.233	112	104
35	0.00132	0.036		1.305	166.233	112	104
36	0.00132	0.036		1.305	166.233	1111	104
37	0.00132	0.036		1.305	166.233	110	102
38	0.00132	0.036		1.305	166.233	107	102
39	0.00132	0.036		1.305	166.233	107	102
40	0.00132	0.036		1.305	166.233	107	102
41	0.00132	0.036		1.305	166.233	107	102
42	0.00132	0.036		1.305	166.233	107	102
43	0.00132	0.036		1.305	166.233	107	102
44	0.00132	0.036		1.305	166.233	107	102
45	0.00132	0.036		1.305	166.233	110	102
46	0.00132	0.036	610.000	1.305	166.233	110	102
47	0.00132	0.036	537.227	1.305	166.233	110	102
48	0.00132	0.036		1.305	166.233	110	103

0.001	0.036	72.773	1.305	166.233		114.667

COMPANY NAME:	Nucor Steel
LOCATION:	Crawfordsville
SOURCE TESTED:	PPFF Baghouse
DATE OF TEST:	04/18/05
RUN NO.:	2
POLLUTANT:	Metals

FIELD DATA

K - Factor = 989.00

Start Time	17:05
Stop Time	19:20

1	0.001355	0.037		1.340	142	110	104
2	0.001355	0.037		1.340	142	111	104
3	0.001355	0.037		1.340	142	113	104
4	0.001355	0.037		1.340	142	113	105
5	0.001355	0.037		1.340	142	112	106
6	0.001355	0.037		1.340	142	111	106
7	0.001355	0.037		1.340	142	112	107
8	0.001355	0.037		1.340	142	113	107
9	0.001355	0.037		1.340	142	113	107
10	0.001355	0.037		1.340	142	114	107
11	0.001355	0.037		1.340	142	115	107
12	0.001355	0.037		1.340	142	115	107
13	0.001355	0.037		1.340	142	113	108
14	0.001355	0.037		1.340	142	114	108
15	0.001355	0.037		1.340	142	114	108
16	0.001355	0.037		1.340	142	117	108
17	0.001355	0.037		1.340	142	117	108
18	0.001355	0.037		1.340	142	117	108
19	0.001355	0.037		1.340	142	118	109
20	0.001355	0.037		1.340	142	120	110
21	0.001355	0.037		1.340	142	120	110
22	0.001355	0.037		1.340	142	120	110
23	0.001355	0.037		1.340	142	119	109
24	0.001355	0.037		1.340	142	116	111
25	0.001355	0.037		1.340	142	115	111
26	0.001355	0.037		1.340	142	120	112
27	0.001355	0.037		1.340	142	120	112
28	0.001355	0.037		1.340	142	122	113
29	0.001355	0.037		1.340	142	123	114
30	0.001355	0.037		1.340	142	124	113
31	0.001355	0.037		1.340	142	124	114
32	0.001355	0.037		1.340	142	124	114
33	0.001355	0.037		1.340	142	126	114
34	0.001355	0.037		1.340	142	126	115
35	0.001355	0.037		1.340	142	126	115
36	0.001355	0.037		1.340	142	126	115
37	0.001355	0.037		1.340	142	123	115
38	0.001355	0.037		1.340	142	123	115
39	0.001355	0.037		1.340	142	123	116
40	0.001355	0.037		1.340	142	123	116
41	0.001355	0.037		1.340	142	123	116
42	0.001355	0.037		1.340	142	121	116
43	0.001355	0.037		1.340	142	118	115
44	0.001355	0.037		1.340	142	118	115
45	0.001355	0.037		1.340	142	118	115
46	0.001355	0.037	691.000	1.340	142	118	115
47	0.001355	0.037	610.250	1.340	142	118	115
48	0.001355	0.037		1.340	142	118	114

0.001	0.037	80.750	1.340	141.630		114.745

Molecular Weight of Stack Gas, Dry Basis, Md

	Enter Data
%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	36.2
Vw(std)	1.703

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	114.745
Vm	80.750
Pb(inches Hg)	30.140
delta H	1.340
gamma	0.966
Vm(std)	72.882

Moisture Content of Stack Gas, Bwo

Bwo	2.29%
1-Bwo	97.71%

Molecular Weight of Stack Gas, Ms

Ms	28.59

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.14

Stack Gas Velocity, Vs, fps

Cp	0.84
sqr(delta p)	0.037
Ts	141.630
Vs	2.208

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1401034

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd	1214572.10
Qstd (dscf/hr) =	72874325.96

Velocity at the Nozzle, Vn

Dia. of Nozzle	1	An(nozzle) 0.005454
Time of Run	120	
Vn	2.14	

% Isokinetic, %I

%I	96.70

% Isokinetic measured from intermediate values

%I	97.07

Pollutant Mass Emission Rate, PMR, lbs./hr.

	Lead	*Mercury*	*VOC*
Mn (g) =	0.0000057	0.00000544	0
PMR (lb/hr) =	0.0126	0.0120	0.0000
PMR (lb/MMBtu) =	-0.0004	0.0000	-0.0004

Grains per acf

gr/acf =	1.07E-06	1.02E-06

Grains per dscf

gr/dscf =	1.21E-06	1.15E-06

COMPANY NAME: Nucor Steel
LOCATION: Crawfordsville
SOURCE TESTED: PPFF Baghouse
DATE OF TEST: 04/19/05
RUN NO.: 3
POLLUTANT: Metals

Enter Data

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	0
%O2	21
Md	28.84

Volume of Water Vapor Collected @ STD. COND., Vwv

Vlc	31.6
Vw(std)	1.486

Volume of Dry Gas Collected @ STD. COND., Vm(std)

Tm(F)	98.073
Vm	78.977
Pb(inches Hg)	30.150
delta H	1.317
gamma	0.966
Vm(std)	73.229

Moisture Content of Stack Gas, Bwo

Bwo	1.99%
1-Bwo	98.01%

Molecular Weight of Stack Gas, Ms

Ms	28.62

Area of Stack (enter diameter in inches), As

Depth-in	366
Width-in	4160
diameter	0
No. of Stacks	1
As(L*W)	10573.33333
As(dia.)	0

Static Pressure, Ps

Static	0.000
Ps	30.15

Stack Gas Velocity, Vs, fps

Cp	0.84
sqr(delta p)	0.036
Ts	174.400
Vs	2.245

Stack Gas Flowrate, Qs, acfm

As	10573.33333
Qs	1424305

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd.

Qstd.	1174947.16
Qstd (dscf/hr) =	70496829.67

Velocity at the Nozzle, Vn

Dia. of Nozzle	1	An(nozzle): 0.005454
Time of Run	120	
Vn	2.28	

% Isokinetic, %I

%I	100.72

% Isokinetic measured from intermediate values

%I	101.16

Pollutant Mass Emission Rate, PMR, lbs./hr

	Lead	*Mercury*	*VOC*
Mn (g) =	0.0000106	0.000003	0
PMR (lb/hr) =	0.0225	0.0064	0.00000
PMR (lb/MMBtu) =	-0.00065	0.0000	-0.00065

Grains per acf

gr/acf	=	1.87E-06 5.29E-07

Grains per dscf

gr/dscf	=	2.23E-06 6.32E-07

FIELD DATA

K - Factor = 990.00

							8:20
							13:25
1	0.00133	0.036		1.317	174	89	92
2	0.00133	0.036		1.317	174	97	90
3	0.00133	0.036		1.317	174	99	90
4	0.00133	0.036		1.317	174	100	90
5	0.00133	0.036		1.317	174	100	90
6	0.00133	0.036		1.317	174	100	90
7	0.00133	0.036		1.317	174	98	91
8	0.00133	0.036		1.317	174	99	92
9	0.00133	0.036		1.317	174	100	92
10	0.00133	0.036		1.317	174	100	92
11	0.00133	0.036		1.317	174	100	92
12	0.00133	0.036		1.317	174	100	92
13	0.00133	0.036		1.317	174	96	92
14	0.00133	0.036		1.317	174	98	92
15	0.00133	0.036		1.317	174	98	92
16	0.00133	0.036		1.317	174	98	92
17	0.00133	0.036		1.317	174	99	92
18	0.00133	0.036		1.317	174	101	92
19	0.00133	0.036		1.317	174	101	93
20	0.00133	0.036		1.317	174	101	93
21	0.00133	0.036		1.317	174	102	93
22	0.00133	0.036		1.317	174	102	94
23	0.00133	0.036		1.317	174	103	95
24	0.00133	0.036		1.317	174	102	95
25	0.00133	0.036		1.317	174	100	96
26	0.00133	0.036		1.317	174	104	96
27	0.00133	0.036		1.317	174	105	97
28	0.00133	0.036	779.441	1.317	174	109	98
29	0.00133	0.036	700.464	1.317	174	110	98
30	0.00133	0.036		1.317	174	110	99
31	0.00133	0.036		1.317	174	107	99
32	0.00133	0.036		1.317	174	106	99
33	0.00133	0.036		1.317	174	106	99
34	0.00133	0.036		1.317	174	99	98
35	0.00133	0.036		1.317	174	100	100
36	0.00133	0.036		1.317	174	98	98
37	0.00133	0.036		1.317	174	99	97
38	0.00133	0.036		1.317	174	99	97
39	0.00133	0.036		1.317	174	101	97
40	0.00133	0.036		1.317	174	102	98
41	0.00133	0.036		1.317	174	103	98
42	0.00133	0.036		1.317	174	104	98
43	0.00133	0.036		1.317	174	100	98
44	0.00133	0.036		1.317	174	101	99
45	0.00133	0.036		1.317	174	104	98
46	0.00133	0.036		1.317	174	103	98
47	0.00133	0.036		1.317	174	102	98
48	0.00133	0.036		1.317	174	102	98

0.001	0.036	78.977	1.317	174.400		98.073

APPENDIX III FIELD DATA

Nucor HPPBH

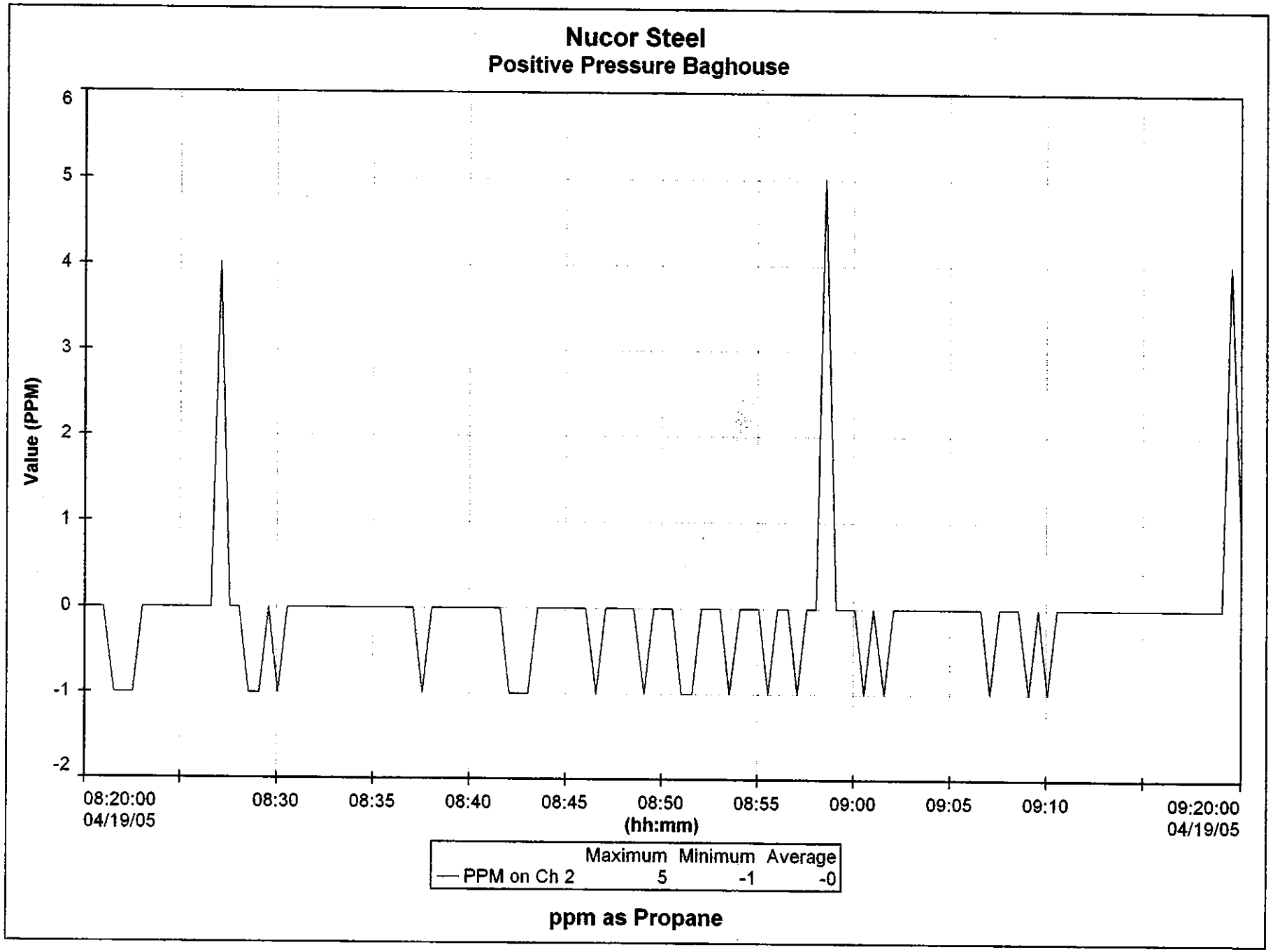
Chamber 2

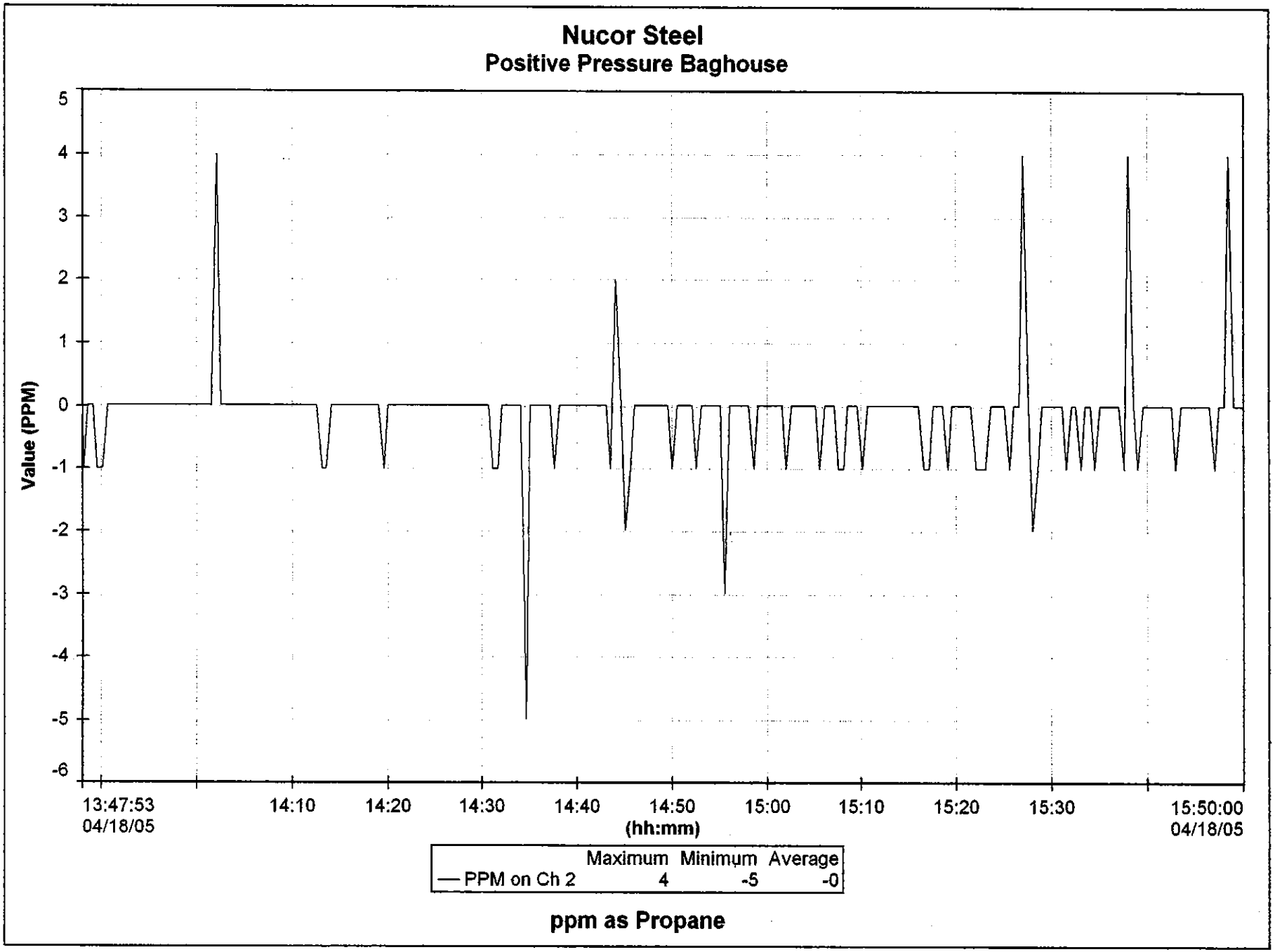
	Cal gas	Response
	0	0.1
8AM	109	109
	38.9	38.8
	63.7	63.2

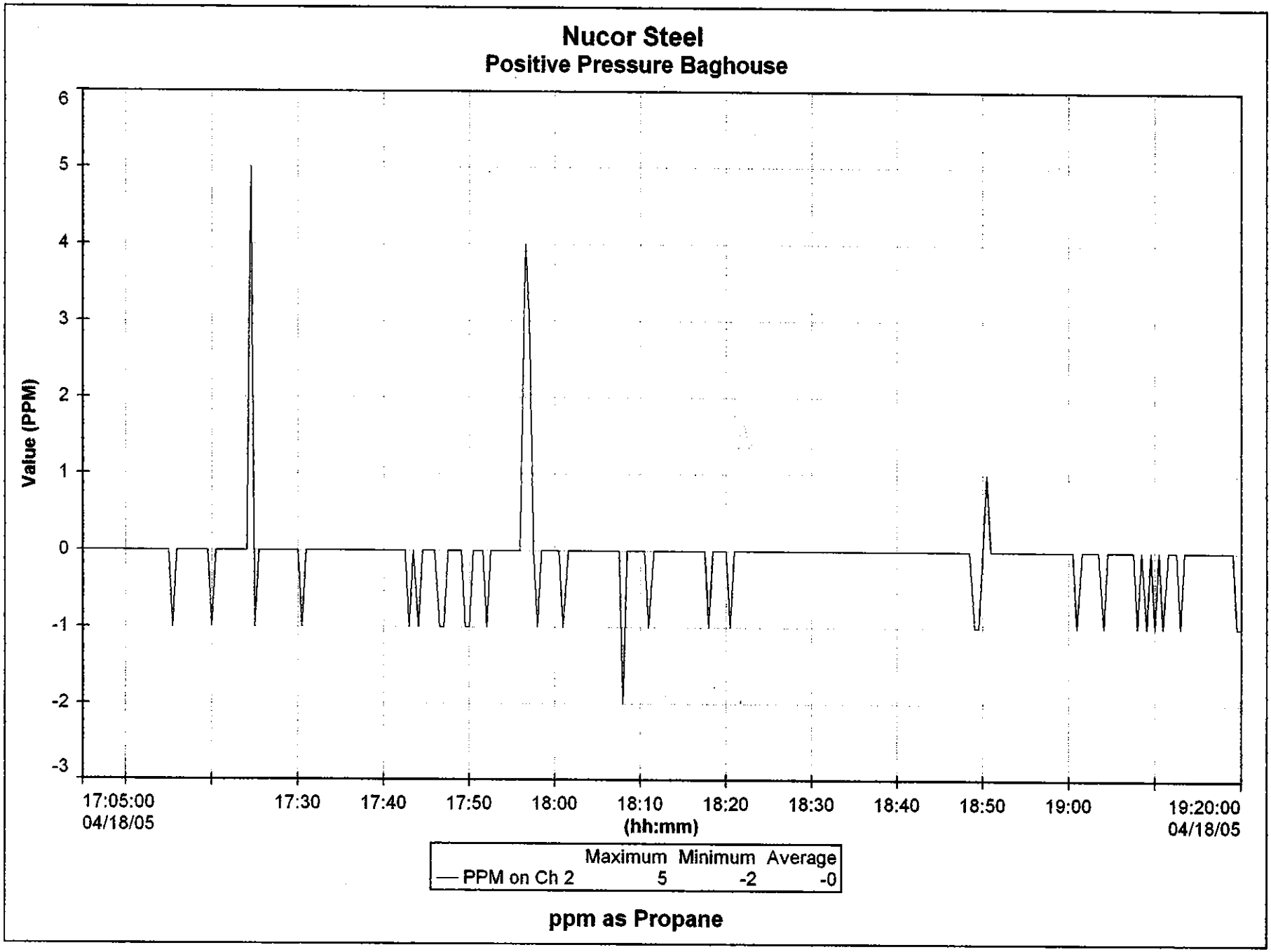
	Cal gas	Response
	0	-0.4
10:30AM	109	109
	38.9	38.2
	63.7	63.4
	0	-0.4
	63.7	63.7
400	0	0.2
	63.7	~~63.4~~ 64.0
833 PM	0	0.4
	63.7	63.4
7:10AM	0	-0.6
	63.7	63.4
~~838~~ 1000	0	-0.4
	63.7	63.4

Mid Hour Flow

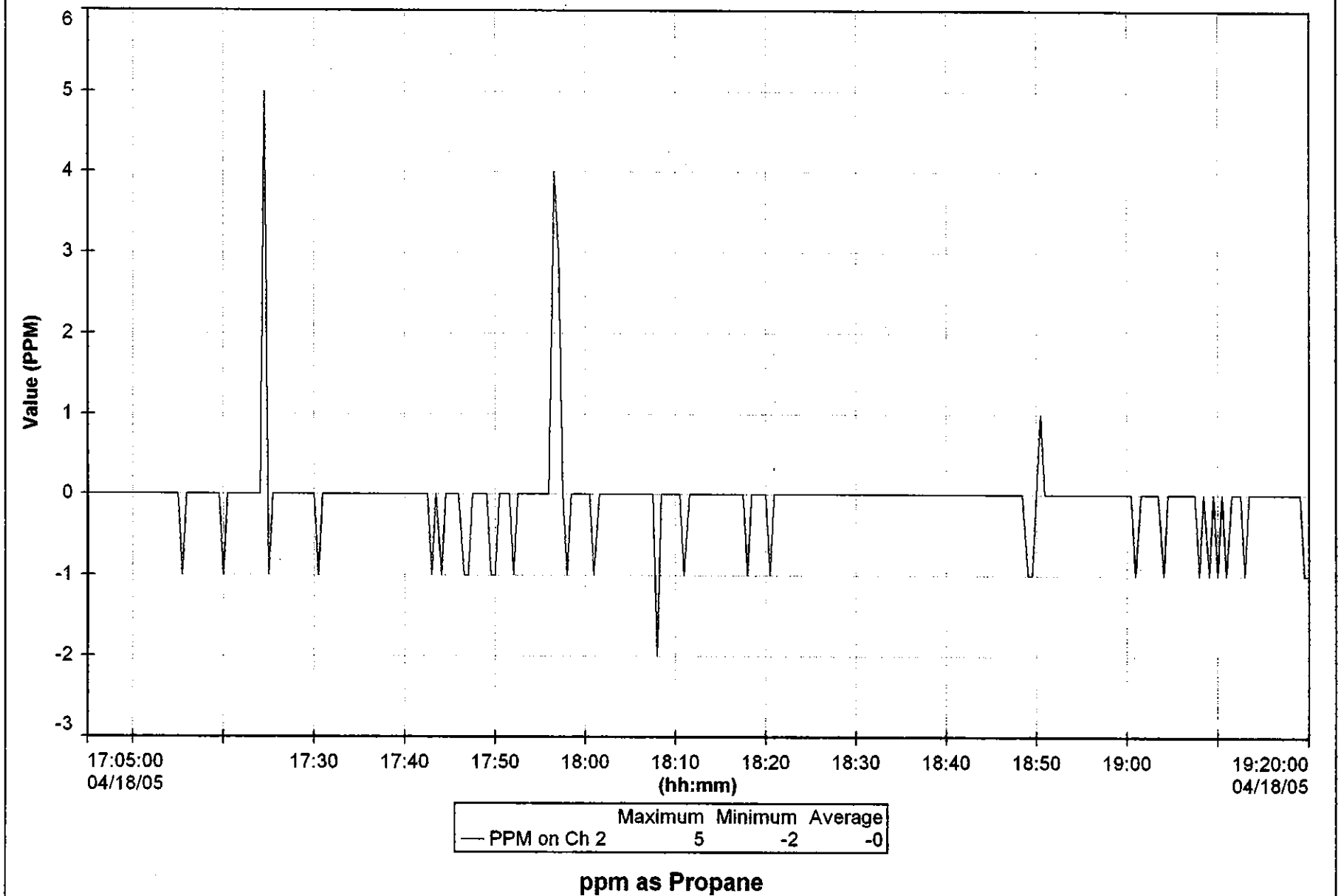
	1 ΔP	1 ST	2 ΔP	2 ST	3 ΔP	3 ST	4 ΔP	4 ST	5 ΔP	5 ST	6 ΔP	6 ST	7 ΔP	7 ST	8 ΔP	8 ST
	1.8	108	1.9	108	1.6	118	1.6	148	1.2	135	1.1	123	1.3	126	1.9	120
	1.9	109	1.9	111	1.7	120	1.8	148	1.7	136	1.4	139	1.4	128	1.7	121
20	1.9	112	1.7	108	1.8	124	1.4	145	1.2	153	1.5	143	1.5	130	1.5	123
	1.7	107	1.7	113	1.5	125	0.9	149	1.2	153	1.0	141	1.3	130	1.5	123


Nucor Steel
Positive Pressure Baghouse
Value (PPM)
6
5
4
3
2
1
0
-1
-2
08:20:00
04/19/05
08:30
08:35
08:40
08:45
08:50
08:55
09:00
09:05
09:10
09:20:00
04/19/05
(hh:mm)
Maximum Minimum Average
PPM on Ch 2 5 -1 -0
ppm as Propane


Nucor Steel
Positive Pressure Baghouse
Value (PPM)
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
13:47:53
04/18/05
14:10
14:20
14:30
14:40
14:50
15:00
15:10
15:20
15:30
15:50:00
04/18/05
(hh:mm)
Maximum Minimum Average
PPM on Ch 2 4 -5 -0
ppm as Propane


Nucor Steel
Positive Pressure Baghouse
Value (PPM)
6
5
4
3
2
1
0
-1
-2
-3
17:05:00
04/18/05
17:30
17:40
17:50
18:00
18:10
18:20
18:30
18:40
18:50
19:00
19:20:00
04/18/05
(hh:mm)
Maximum Minimum Average
PPM on Ch 2 5 -2 -0
ppm as Propane

Nucor Steel
Positive Pressure Baghouse



VELOCITY TRAVERSE POINT DETERMINATION
(EPA Method 1)

Nucor Steel @ **Crawfordsville**
Rectangular Stack
Flow Determination Spacing

Depth-in : 176.04 Dia. (inches): 215.44
Width-in : 277.56 Ports: 8

Points per port:

	2	4	6	8	10	13
1	44.01	22.01	17.60	14.67	8.80	6.77
2	132.03	66.02	52.81	44.01	26.41	20.31
3		110.03	88.02	73.35	44.01	33.85
4		154.04	123.23	102.69	61.61	47.40
5			158.44	132.03	79.22	60.94
6				161.37	96.82	74.48
7					114.43	88.02
8					132.03	101.56
9					149.63	115.10
10						128.64
11						142.19
12						155.73
13						169.27

Spacing	88.02	44.01	35.21	29.34	17.60	13.54

VELOCITY TRAVERSE POINT DETERMINATION
(EPA Method 1)

Nucor Steel @ **Crawfordsville**
Circular Stack
Taverse Points on Diameter:
Stack Dia.(inches)?

Points:

	4	6	8	10	12
0					
1	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00
5		0.00	0.00	0.00	0.00
6		0.00	0.00	0.00	0.00
7			0.00	0.00	0.00
8			0.00	0.00	0.00
9				0.00	0.00
10				0.00	0.00
11					0.00
12					0.00

VELOCITY TRAVERSE POINT DETERMINATION
(EPA Method 1)

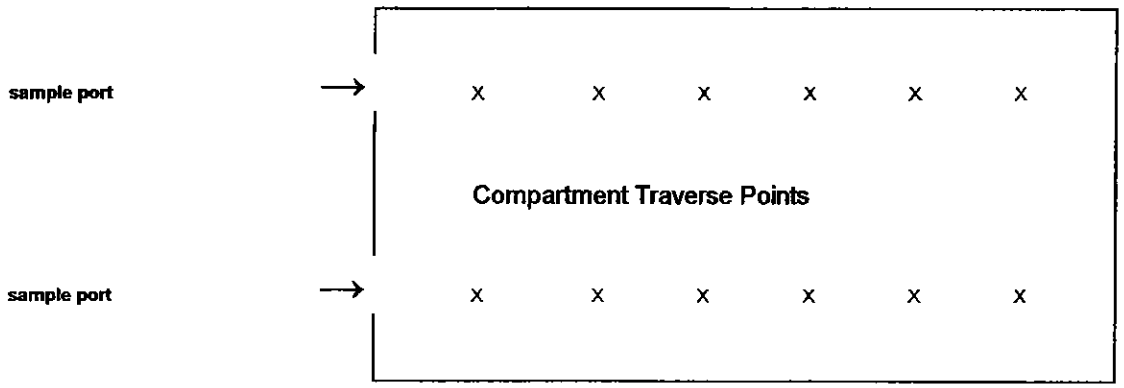
Nucor Steel @ **Crawfordsville**
Rectangular Stack

Depth-in : 366 Dia. (inches): 304.03
Width-in : 260 Ports: 2

Points per port:

	2	4	6	8	10	12
1	91.50	45.75	36.60	30.50	18.30	14.08
2	274.50	137.25	109.80	91.50	54.90	42.23
3		228.75	183.00	152.50	91.50	70.38
4		320.25	256.20	213.50	128.10	98.54
5			329.40	274.50	164.70	126.69
6				335.50	201.30	154.85
7					237.90	183.00
8					274.50	211.15
9					311.10	239.31
10						267.46
11						295.62
12						323.77
13						351.92

Spacing	183.00	91.50	73.20	61.00	36.60	28.15



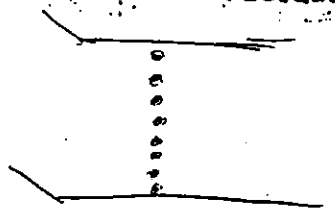
TEST LOCATION: Inlet PM TESTING METHOD: _____ PAGE ___ OF ___

UNIT: PPFF RUN: 1

FIELD DATA SHEET

Client: Nucor	Project No.:
Plant:	Date: 4-18-05
Meter Operator	
Probe Operator	

Cross-Section of Test Location



Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.:	
Liner Material:	

Meter Box No.:	Sample Box No.:	
Meter Yd:	Meter ΔH@:	
K Factor:	Pitot Cp:	
Leak Rate Before:	[cfm] [Lpm]: @	(in. Hg)
Leak Rate After:	[cfm] [Lpm]: @	(in. Hg)
Pitot Leak Check Before: ☑	After; Good: ☑ Bad: ☐	

Duct Dimensions (in.): 14.67' x 23.13'

Static Press. (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

H_2O [ml] [gm]	Silica Gel (gm)	
Total V_{lc}		

Start Time: 1230	Stop Time:

Traverse Point Number	Minpt. Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m [ft^3] [L]	Stack Temp. T_s (°F)	Probe T_p (°F) Set Points	Filter T_f (°F)	Cond. Temp $T_{c(n)}$ (°F)	DGM Inlet $T_{m(in)}$ (°F)	DGM Outlet $T_{m(out)}$ (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp T_t (°F)	Notes
		1.8 (ΔP)	149 (Stack)		1.2 (ΔP)	169 (Stack)		1.4 (ΔP)	168 Stack				Use FD
		1.8	148		1.3	160		1.0	164				R1 PM/PM10
		1.7	147		1.2	168		1.3	160				R1 Metals
		1.8	147		0.9	160		1.1	192				
		1.3	153		1.1	146		1.4	190				
		1.8	158		1.0	166		1.4	168				
		1.7	171		1.0	175		1.8	187				
		1.3	147		0.8	170		1.2	160				
		1.2	151		1.1	168							
		1.3	175		1.1	178							
		1.4	130		1.3	177							
		1.7	175		1.1	174							
	Total	*											
	Average												

DS 001 General
CNVS/TAG R3-4/8/94

* Sum of square roots.

Circle correct bracketed units on data sheet.

* 1427723 acfm
1202591 dscfm

166.2 Stack Temp

TEST LOCATION: Inlet PPFF PM TESTING METHOD: _____ PAGE ___ OF ___

UNIT: Inlet RUN: Recheck midway

FIELD DATA SHEET

Client: Nucor	Project No.:
Plant:	Date: 4/8/05
Meter Operator	
Probe Operator	

Meter Box No.:	Sample Box No.:	
Meter Yd	Meter ΔH@	
K Factor	Pitot Cp	
Leak Rate Before	[cfm] [Lpm] @	[in. Hg]
Leak Rate After	[cfm] [Lpm] @	[in. Hg]
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐ N/A ☐	

Cross-Section of Test Location

R1 check

[N] [UP]

Use for R2

Duct Dimensions (in.): Nozzle

Static Press. (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.:	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

H_2O [ml] [gm]	Silica Gel (gm)
Total V_{lc}	

Start Time: ~2:20 Stop Time:

Traverse Point Number	Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft^3] [L]	Stack Temp. T_s (°F)	Probe T_p (°F) Set Points	Filter T_f (°F)	Cond. Temp T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp T_t (°F)	Notes
		1.8	148		1.2	148		1.4	128				
		1.9	148		1.3	140		1.0	126				
		1.7	147		1.2	148		1.3	134				
		1.7	154		0.9	160		1.1	126				
		1.3	153		1.1	130		1.6	105				
		1.8	150		1.0	146		1.6	120				
		1.7	157		1.0	135		1.8	126				
		1.4	166		0.8	135		1.2	127				
		1.6	151		1.1	130							
		1.8	160		1.1	135							
		1.4	148		1.3	137							
		1.7	148		1.1	134							
	Total												
	Average												

Recheck R1 air flow supposedly ↓ went to 4 fa from 5 fa

DS 001 General
CNVS/TRG R3-4/8/94

* Sum of square roots.

Circle correct bracketed units on data sheet.

1,399,074 ACFM
1,229,121 dscfm

Avg 142 Stack Temp

TEST LOCATION: Inlet

UNIT: PPPF RUN: 2

TESTING FIELD DATA SHEET

METHOD: _____ PAGE ___ OF ___

Client	Project No#:
Plant:	Date: 4-19-06
Meter Operator	
Probe Operator	

Cross-Section of Test Location

[N] [UP]

Use for R2 PM R3 - Method 4

Duct Dimensions (in.)

Static Press. ("H2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.	
Liner Material	

Meter Box No:	Sample Box No:	
Meter Yd	Meter ΔH@	
K Factor	Pitot Cp	
Leak Rate Before	[cfm] [Lpm]	(in. Hg)
Leak Rate After	[cfm] [Lpm]	(in. Hg)
Pitot Leak Check Before: ☑	After; Good: ☑ Bad: ☐	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

H_2O [ml] [gm]	Silica Gel (gm)
Total V_{lc}	

Start Time: 8 AM Stop Time:

Traverse Point Number	Min/pt. Elapsed Time	Velocity Head ΔP's ("H2O)	Orifice Setting ΔH ("H2O)	Gas Sample Volume V_m [ft³] [L]	Stack Temp. T_s (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp T_c (°F)	DGM Inlet T_{in} (°F)	DGM Outlet T_{out} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp T_t (°F)	Notes
		1.7	147		1.1	165		1.4	170				
		1.7	147		1.2	163		0.96	192				
		1.9	146		1.3	169		1.3	190				
		1.8	142		1.7	172		1.1	186				
		1.4	169		0.91	192		1.3	146				
		1.6	179		0.94	180		1.4	158				
		1.8	180		1.2	187		1.5	181				
		1.8	166		1.0	182		1.7	186				
		1.1	181		1.0	180							
		1.3	191		0.99	193							
		1.4	200		1.5	193							
		1.7	192		1.1	193							
	Total									Stack Avg 174.4			
	Average												

DS 001 General
CNVS/TRG R3-4/8/94

* Sum of square roots.

Circle correct bracketed units on data sheet.

1436990 acfm
1,194835 dscfm

TEST LOCATION: Inlet

UNIT: PPFF RUN:

TESTING FIELD DATA SHEET

METHOD: PAGE OF

Client: NUMR	Project No.:
Plant:	Date: 4-19-05
Meter Operator	
Probe Operator	

Cross-Section of Test Location

[N] [UP]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.:	
Liner Material	

Meter Box No.:	Sample Box No.:	
Meter Yd	Meter ΔH@	
K Factor	Pitot Cp	
Leak Rate Before	[cfm] [Lpm] @	(in. Hg)
Leak Rate After	[cfm] [Lpm] @	(in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐	

Duct Dimensions (in.)

Static Press. (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.	

H_2O [ml] [gm]	Silica Gel (gm)	
Total V_{lc}		

Start Time:	Stop Time:

Traverse Point Number	Min/pt. Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting (ΔH's) (in. H_2O)	Gas Sample Volume V_m (ft³) [m³] [L]	Stack Temp. T_s (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp T_t (°F)	Notes
		1.8 P	108 S	1.6 P	144 S		1.3 P	S 121					
		1.9	109	1.8	148		1.4	128					
		1.9	112	1.4	145		1.5	128					
		2.0	108	0.9	149		1.3	130					
		1.7	108	1.2	135		1.5	120					
		1.9	111	1.7	150		1.7	121					
		1.7	113	1.7	153		1.7	121					
		1.7	106	1.2	153		1.5	123					
		1.6	118	1.1	123								
		1.7	120	1.4	139								
		1.8	124	1.5	143								
		1.5	125	1.0	141								
	Total												
	Average												

DS 001 General
CNVS/TRG R3-4/6/94

* Sum of square roots.

Circle correct bracketed units on data sheet.

Check flows

Post 4-19-05

TEST LOCATION: INLET

UNIT: PPFF RUN: 3

PM TESTING FIELD DATA SHEET

METHOD: _____ PAGE ___ OF ___

Client	Project No.:
Plant:	Date: 4-22-05
Meter Operator	
Probe Operator	

Meter Box No.:	Sample Box No.:	
Meter Yd	Meter ΔH@	
K Factor	Pitot Cp	
Leak Rate Before	[cfm] [Lpm] @	(in. Hg)
Leak Rate After	[cfm] [Lpm] @	(in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐	

Cross-Section of Test Location

[N] [UP] Used for (R3 PM/PM10)

Duct Dimensions (in.)

Static Press. (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]

Amb. Temp. (°F)	Bar. Press. [in. Hg] [mbar]
Probe I.D. No.:	
Liner Material	

Filter No.		
Thimble No.		
Nozzle Diameter	Nozzle I.D.:	

H_2O [ml] [gm]	Silica Gel (gm)
Total V_{lc}	

Start Time: 8 AM	Stop Time:

Traverse Point Number	Min/pt. Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Inlet Vol. [ft^3] [L]	Stack Temp. T_s (°F)	Probe T_p (°F) Set Points	Filter T_f (°F)	Cond. Temp T_c (°F)	DGM Inlet T_{min} (°F)	DGM Outlet T_{mout} (°F)	Pump Vacuum (in. Hg)	XAD Trap Temp T_t (°F)	Notes
		1.2	149		1.1	151	0.9	156					
		1.3	153		1.3	150	0.9	160					
		1.7	170		1.3	156	1.0	140					
		1.7	163		1.4	156	1.0	141					
		1.3	150		1.3	136	0.76	141					
		1.1	143		1.3	143	0.8	136					
		1.5	163		1.4	143	1.0	153					
		1.7	161		1.4	147	1.1	150					
		1.1	129		0.8	151							
		1.3	159		0.8	151							
		1.4	168		0.8	152							
		1.7	175		0.9	147							
	Total												
	Average												

DS 001 General
CNVS/TRG R3-4/8/94

* Sum of square roots.

Circle correct bracketed units on data sheet.

(1,335191 acfm
1,151653 dscfm)

Avg 151.57

Temp

FIELD DATA SHEET — PM/PM10 TEST — EPA METHOD 5D/202 — RUN 1 — PAGE 1 OF 2

CLIENT	Nucor Steel	METER BOX ID	80	K FACTOR	989	DUCT DIMENSIONS (in.)	366 x 460
LOCATION	Crawfordsville IN	METER γ	0.9868	METER ΔH@	1.982	PORT LENGTH (in.)	
UNIT	Position Pressure Bbt	PITOT C_P	0.84	PROBE LINER	Teflon	FILTER ID	SILICA ID
DATE	4-18-08	PROJECT #		PROBE ID		NOZZLE ID	1.0	TEDLAR BAG ID	
METER OPERATOR	M. Dicus	BAROMETRIC	30.19	AMBIENT TEMP (°F)		PITOT CHECK PASS ☒ FAIL ☐	O_2 21
PROBE OPERATOR	M. Allen	STATIC PRESSURE (in. H_2O)	0				CO_2 0
VISIBLE EMISSIONS READER	R. Stapper	LEAK RATE BEFORE (cfm)	0	@ (in. Hg)	15	H_2O (mL)	28
CLIENT CONTACT	M Wallin	LEAK RATE AFTER (cfm)	0	@ (in. Hg)	15	SILICA GEL (g)	35
AGENCY CONTACT	S. Friend	START TIME	1250	STOP TIME	1936	TOTAL Vic	63

Diagram of Test Location

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				765.07								
1	6	0.00133	1.3	769.1	166.23	NA	NA	Fuel	100	104	6	
2	12			772.9				Ind	102	102	5	
3	18			776.0					104	102	5	
4	24			779.4					104	101	5	1437.582
5	30			782.3					100	103	5	
6	36			787.1					103	99	6	
7	42			790.6					104	98	6	
8	48			794.5					107	98	6	
9	54			798.1					103	98	6	
10	60			803.4					107	100	6	
11	66			808.6					106	101	6	
12	72		↓	810.9				↓	108	101	6	
13	78		1.08	814.9				75	108	104	6	
14	84		↓	820.0					108	103	6	
15	90			823.3					110	104	6	
16	96			828.9				Body	110	104	6	
17	102			829				Red	110	103	6	
18	108		↓	834				↓	107	103	6	
19	114			837.7			Hot		104	102	6	
20	120			842.0					105	102	6	
21	126			841			Vacuum	80	106	102	6	
22	132			MB					108	103	6	
23	138			851.5					109	102	6	
24	144			855.4					110	102	6	
25	150			859.7					111	107	6	
26	156			863.1					112	106	6	
27	162			868.0					112	107	6	
28	168			871.0					115	107	6	
29	174			875.0					115	107	6	
30	180			879.5					115	108	6	

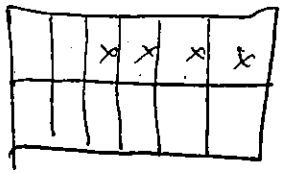
AIR ANALYSIS, Inc

RUN NUMBER 1 POLLUTANT TESTED PM/PM10 EPA METHOD 5D/202 Start Time: 2 of 2

End Time:

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	PBDH
Meter Operator:	MO
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SC
A.E. Reader:	PS
AI Project:	Date: 4.18.08
Barometric Pressure:	30.14
Ambient Temperature:	115

Diagram of Test Location



	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.		Avg.
Silica ID		
Silica wt.		grams
Impingers		mls
Moisture Total		(68) mls
Pretest Pitot Ch.		pass / fail
Postest Pitot Ch.		pass /fail

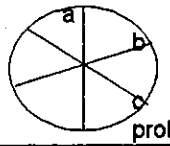
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg.



probe (quartz, glass, SS, Ti)

Meter Y

Meter DeltaH@

Pretest Leak Ch. cfm@

Post test Leak Ch. cfm@

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
31	186	0.00136	1.3	8835	166.20	NA	NA	Fully	117	109	6	
32	192	0.00132	1.3	887.2	166.2				118	110	6	
33	198	0.00132	1.3	8923	166.2				118	110	6	
34	204	0.00132	1.3	895	166.2				118	112	6	
35	210	0.00132	1.3	900	166.2				117	112	6	
36	216	0.00132	1.3	904.74	166.2				120	112	6	
37	222	0.00132	1.3	908.5	166.2				117	113	6	
38	228	0.00132	1.3	912.4	166.2				121	113	6	
39	234	0.00132	1.3	916.4	166.2				121	114	6	
40	240	0.00132	1.3	920.4	166.2				123	114	6	
41	246	0.00132	1.3	924.8	166.2				123	114	6	
42	252	0.00132	1.3	929.1	166.2				121	114	6	
43	258	0.00132	1.3	933.9	166.2				116	114	6	
44	264	0.00132	1.3	937	166.2				117	114	6	
45	270	0.00132	1.3	941.2	166.2				117	112	6	
46	276	0.00132	1.3	945.1	166.2				117	113	6	
47	282	0.00132	1.3	950	166.2				116	112	6	
48	288	0.00132	1.3	952.75	166.2				116	112	6	
19												
20												Filter Number:
21												Filter preweight: 2.9980
22												Filter postweight: 3.0028
23												Total:
24												Beaker ID:
25												Beaker preweight: 65.7916
26												Beaker postweight: 65.7952
27												Total:
28												
29												
30												

(DI) 56.0581 / 56.0532 / 0.0049

(MeCl2) 55.8954 / 55.8953 / 0.0001

DI Blank 55.1330 / 55.1330 / 0

MeCl2 Blank 54.7901 / 54.7901 / 0

AIR ANALYSIS, INC

RUN NUMBER 2 POLLUTANT TESTED PM/PM10 EPA METHOD 5D/202

Start Time: 820
End Time: 1608

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	PPBH
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
V.E. Reader:	RS
AAI Project:	Date: 4-19-05
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location

6	5	4	3	2	1
X	X				
7	8				
X	X				

	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.	0	21

Silica ID	#10, #1
Silica wt.	66.3 grams
Impingers	39 mls
Moisture Total	105.3 mls
Pretest Pitot Ch.	(pass) fail
Postest Pitot Ch.	pass /fail

Nozzle size measurement
a, b, c — nozzle (quartz, glass, SS)
Avg. 1
Instack filter/nozzle
probe (quartz, glass, SS, Ti)

Meter Y	.961
Meter DeltaH@	1.88
Pretest Leak Ch.	0 cfm@ 16
Post test Leak Ch.	cfm@

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft. 961.691	Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
1	6	0.00132	1.32	966.3	174.4	NA	NA	Filley	96	92	7	
2	12	0.00133	1.32	969.5	174.4			1cool	95	92	7	-4 minutes
3	18	0.00133	1.32	974.0	174.4				100	93	7	
4	24	0.00133	1.32	978.0	174.4				100	94	7	
5	30	0.00133	1.32	982.0	174.4				99	95	7	
6	36	0.00133	1.32	985.0	174.4				99	96	7	
7	42	0.00133	1.32	989.1	174.4				98	96	7	
8	48	0.00133	1.32	993.1	174.4				102	96	7	
9	54	0.00133	1.32	997.8	174.4				105	98	7	
10	60	0.00133	1.32	1002.0	174.4				108	98	7	
11	66	0.00133	1.32	1006.0	174.4				109	99	7	
12	72	0.00133	1.32	1009.1	174.4				109	100	7	
13	78	0.00133	1.32	1013.7	174.4				107	102	7	
14	84	0.00132	1.32	1018.0	174.4				110	98	7	
15	90	0.00132	1.32	1021.9	174.4				108	104	7	
16	96	0.00132	1.32	1026	174.4				99	98	7	
17	102	0.00132	1.32	1030.	174.4				100	98	7	
18	108	0.00132	1.32	1034.4	174.4				101	98	7	
19	114	0.00132	1.32	1038.5	174.4				102	99	7	
20	120	0.00133	1.32	1041.3	174.4				102	99	7	Filter Number:
21	126	0.00133	1.32	1045.7	174.4				100	99	7	Filter preweight: 3.0603
22	132	0.00133	1.32	1050	174.4				98	98	7	Filter postweight: 3.0646
23	138	0.00133	1.32	1054.3	174.4				98	98	7	Total: 0.0043
24	144	0.00133	1.32	1058.3	174.4				96	98	7	Beaker ID:
25	150	0.00133	1.32	1062.0	174.4				98	98	7	Beaker preweight: 57.0337
26	156	0.00133	1.32	1067.1	174.4				100	97	7	Beaker postweight: 57.0361
27	162	0.00133	1.32	1069.9	174.4				102	98	7	Total: 0.0024
28	168	0.00133	1.32	1074	174.4				104	99	7	56.3337 Blank
29	174	0.00133	1.32	1079	174.4				103	101	7	56.3337
30	180	0.00133	1.32	1082.5	174.4				104	101	7	

Acetone

DT

53.7406
53.7402
0.0004

McCl

58.8954
58.8953
0.0001

2 of 2

AIR ANALYSIS, L..C

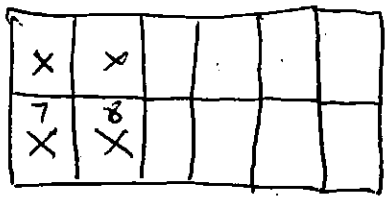
RUN NUMBER 2 POLLUTANT TESTED PM/PM10 EPA METHOD 5D/2D

Start Time:

End Time:

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	PPBH
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
V.E. Reader:	RS
AAI Project:	Date: 4-19-05
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location



	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.	0	Avg. 21
Silica ID		10,1
Silica wt.		39.7 grams
Impingers		mls
Moisture Total		105.3 mls
Pretest Pitot Ch.		pass / fail
Postest Pitot Ch.		pass / fail

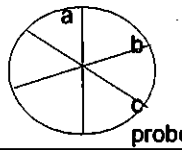
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg.



probe (quartz, glass, SS, Ti)

Meter Y	961
Meter DeltaH@	188
Pretest Leak Ch.	0 cfm@ 16
Post test Leak Ch.	0 cfm@ 15

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft. ✓	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F) 0	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F) ✓	Meter Outlet Temp (F) ✓	Vacuum (inches)	NOTES
31	186	0.00133	1.32	1086.6	NA	NA	NA	74	103	100	7	
32	192	0.0433	1.32	1090.3	174.4			Fruit	102	101	7	
33	198	0.00133	1.32	1094.8	174.4			Cell	100	100	7	
34	204	0.00133	1.32	1098.7	174.4				99	100	7	
35	210	0.00133	1.32	1101.4	174.4				100	100	7	
36	216	0.00133	1.32	1106.85	174.4				101	100	7	
37	222	0.00133	1.32	111.14	174.4				101	99	7	
38	228	0.00133	1.32	115.31	174.4				102	100	7	
39	234	0.00133	1.32	119.69	174.4				101	100	7	
40	240	0.00133	1.32	123.18	174.4				110	101	7	
41	246	0.00133	1.32	127.91	174.4				110	102	7	
42	252	0.00133	1.32	130.99	174.4			Hot	110	102	7	
43	258	0.00133	1.32	134.95	174.4			Ambient	111	103	7	
44	264	0.00133	1.32	139.11	174.4			Air	111	103	7	
45	270	0.00133	1.32	143.28	174.4				111	104	7	
46	276	0.00133	1.32	147.44	174.4				110	103	7	
47	282	0.00133	1.32	151.59	174.4				110	104	7	
48	288	0.00133	1.32	155.968	174.4				110	104	7	
19				1156.96								
20												Filter Number:
21												Filter preweight:
22												Filter postweight:
23												Total:
24												Beaker ID:
25												Beaker preweight:
26												Beaker postweight:
27												Total:
28												
29												
30												

88
-22
66 12

1.f2

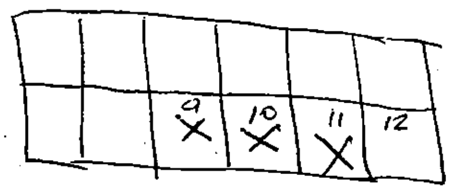
AIR ANALYSIS, INC

RUN NUMBER 3 POLLUTANT TESTED PM/PM10 EPA METHOD 5D/202

Start Time: 833
End Time: 200PM

Company:	Nucor Steel	CO2	O2	Nozzle size measurement
Location:	Crawfordsville	1 0	1 21	a nozzle (quartz, glass, (SS))
Unit Tested:	PPBH	2 0	2 21	b
Meter Operator:	M.D	3 0	3 21	c
Probe Operator:	MA	Avg. 0	Avg. 21	
Client Contact:	MW	Silica ID	2,11	Avg. 1
Agency Contact:	SF	Silica wt.	grams	probe (quartz, glass, SS, Ti)
V.E. Reader:	C. Brown	Impingers	mls	Meter Y 0.961
AAI Project:	Date: 4-22-05	Moisture Total	(672) mls	Meter DeltaH@ 1.88
Barometric Pressure:	29.73	Pretest Pitot Ch.	(pass)/fail	Pretest Leak Ch. 0.0 cfm@ 15
Ambient Temperature:	52	Postest Pitot Ch.	(pass)/fail	Post test Leak Ch. 0.0 cfm@ 15

Diagram of Test Location



Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft. 158.0	Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F) 0	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES Run	
1	6	0.00127	1.1	162.1	151.57	NA	NA	Fully	76	64	7		
2	12	0.00127	1.1	166.0	151.57			iced	76	64	7	ΔP Ts	
3	18	0.00127	1.1	170.0	157.57				78	65	7	1.2 1.3 149	136
4	24	0.00127	1.1	174.5	151.57				77	66	7	1.2 1.3 153	143
5	30	0.00127	1.1	178.1	151.57				77	67	7	1.7 1.4 170	143
6	36	0.00127	1.1	182.1	151.57				78	68	7	1.7 1.4 163	143
7	42	0.00127	1.1	185.6	151.57				74	69	7	1.3 0.8 151	147
8	48	0.00127	1.1	189.6	151.57				77	69	7	1.1 0.8 153	151
9	54	0.00127	1.1	192.8	151.57				78	69	7	1.5 0.8 163	157
10	60	0.00127	1.1	196.6	151.57				80	70	7	1.7 0.9 161	147
11	66	0.00127	1.1	201.1	151.57				83	71	7	1.1 0.9 124	156
12	72	0.00127	1.1	204.9	151.57				81	72	7	1.3 0.9 154	160
13	78	0.00127	1.1	208.4	161.57				78	72	7	1.4 1.0 168	190
14	84	0.00127	1.1	212.4	151.57				80	73	7	1.7 1.0 175	141
15	90	0.00127	1.1	216.0	151.57				80	73	7	1.1 0.76 151	171
16	96	0.00127	1.1	219.1	151.57				84	74	7	1.3 0.8 150	136
17	102	0.00127	1.1	223.1	151.57				84	77	7	1.3 1.0 152	137
18	108	0.00127	1.1	227.6	151.57				89	76	7	1.4 1.1 152	137
19	114	0.00127	1.1	231.4	151.57				89	78	7		
20	120	0.00127	1.1	234.6	151.57				93	78	7	Filter Number:	
21	126	0.00127	1.1	238.5	151.57			Stop 10:50	92	80	7	Filter preweight: 2.4885	
22	132	0.00127	1.1	242.1	151.57			Restart	83	83	7	Filter postweight: 2.4858	
23	138	0.00127	1.1	245.6	151.57			11:30	86	82	7	Total:	
24	144	0.00127	1.1	249.7	151.57				86	82		Beaker ID: —	
25												Beaker preweight: 66.5135	
26												Beaker postweight: 66.5156	
27												Total: 0.0021	
28													
29													
30													

Points 1–12: 9; Points 13–24: 10

No (Poe), 3rd wk of May

1,340,108
1,155,887

R2 1658 - 1926

DI 65.919
65.9153

M.Cl2

54.6505
54.6505

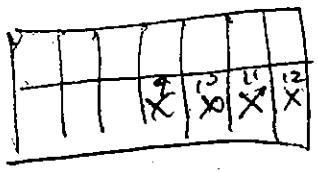
AIR ANALYSIS, INC

RUN NUMBER 3 POLLUTANT TESTED PM/PM10 EPA METHOD 5D/202 Start Time: 833

End Time:

Company:	Nucor Steel		
Location:	CJ 16		
Unit Tested:	PP Bit		
Meter Operator:	MD		
Probe Operator:	MA		
Client Contact:	MW		
Agency Contact:	JF		
V.E. Reader:	CB		
AAI Project:	Date:	4/22	
Barometric Pressure:		29.73	
Ambient Temperature:		52	

Diagram of Test Location



	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.	0	Avg. 21
Silica ID		11
Silica wt.		37.2 grams
Impingers		30 mls
Moisture Total		67.2 mls
Pretest Pitot Ch.		pass / fail
Postest Pitot Ch.		pass /fail

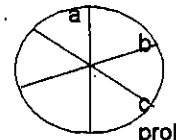
Nozzle size measurement

a 1.0 nozzle (quartz, glass, SS)

b 1.0

c 1.0

Avg. 1.0



probe (quartz, glass, SS, Ti)

Meter Y	0.961
Meter DeltaH@	1.88
Pretest Leak Ch. 0 cfm@	15
Post test Leak Ch. 0 cfm@	15

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
1	150	0.00127	1.1	253.5	151.57	NA	NA	Fully iced	86	81	7	
2	156	0.00127	1.1	258.8	151.57				92	82	7	
3	162	0.00127	1.1	261.0	151.57				96	83	7	
4	168	0.00127	1.1	264.6	151.57				97	85	7	
5	174	0.00127	1.1	268.3	151.57				95	96	7	
6	180	0.00127	1.1	272.2	151.57				93	86	7	
7	186	0.00127	1.1	276.0	151.57				95	87	7	
8	192	0.00127	1.1	279.8	151.57				95	87	7	
9	198	0.00127	1.1	283.5	151.57				97	87	7	
10	204	0.00127	1.1	287.3	151.57				99	87	7	
11	210	0.00127	1.1	291.1	151.57				102	89	7	
12	216	0.00127	1.1	295.3	151.57				104	91	7	
13	222	0.00127	1.1	299.1	151.57				104	92	7	
14	228	0.00127	1.1	302.9	151.57				98	93	7	
15	234	0.00127	1.1	306.7	151.57				93	91	7	
16	240	0.00127	1.1	311.5	151.57				91	90	7	
17	246	0.00127	1.1	314.8	151.57				92	88	7	
18	252	0.00127	1.1	32.25	151.57				95	88	7	
19	258	0.00127	1.1	324.2	151.57				97	88	7	
20	264	0.00127	1.1	326.8	151.57				98	89	7	Filter Number:
21	270	0.00127	1.1	330.2	151.57				97	89	7	Filter preweight:
22	276	0.00127	1.1	333.3	151.57				96	89	7	Filter postweight:
23	282	0.00127	1.1	337.2	151.57				96	89	7	Total:
24	288	0.00127	1.1	341.712	151.57							Beaker ID:
25												Beaker preweight:
26												Beaker postweight:
27												Total:
28												
29												
30												

FIELD DATA SHEET — Metals TESTING — EPA METHOD 29 — RUN 1 — PAGE 1 OF 2

CLIENT	Nucor Steel	METER BOX ID	79	K FACTOR	985	DUCT DIMENSIONS (in.)	346 x 460
LOCATION	Crawfordsville	METER γ	0966	METER ΔH@	1.88	PORT LENGTH (in.)	
UNIT	PPB&A	PITOT C_p	0.84	PROBE LINER	teflon	FILTER ID	SILICA ID 12
DATE	4-18-25	PROJECT #		PROBE ID	—	NOZZLE ID	TEDLAR BAG ID
METER OPERATOR	M Dicus	BAROMETRIC	30.14	AMBIENT TEMP (°F)		PITOT CHECK PASS ☒ FAIL ☐	O_2 21 / CO_2 0
PROBE OPERATOR	M Allen	STATIC PRESSURE (in. H_2O)	0				
VISIBLE EMISSIONS READER	R Stratford	LEAK RATE BEFORE (cfm)	0 @ (in. Hg)	15		H_2O (mL)	30
CLIENT CONTACT	M Wolfe	LEAK RATE AFTER (cfm)	0 @ (in. Hg)	17		SILICA GEL (g)	2517
AGENCY CONTACT	J. Frund	START TIME	1250	STOP TIME	350	TOTAL Vic	55.7

Diagram of Test Location: # 79; 6.966; 1.88

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 537.227	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
1	25	0 1.333	1.33	538.1	166.23	N/A	N/A	Freq	101	104	12	
2	5	0.00137		539.1				leak	97	103	17	
3	7.5	0.00133		540					99	103	17	
4	10	5.29		441					99	102	17	
5	12.5	541.5		443					95	101	17	
6	15	546.2		546.2					95	101	17	
7	17.5			548.0					98	99	17	
8	20			549.3					99	98	17	
9	22.5			551.0					98	97	17	
10	25			552.9					97	98	17	
11	27.5			553.5					97	98	17	
12	30			554.56					97	98	17	Strip check ✓
13	32.5			557.8	166.23				102	96	08	
14	35	0.00137	1.32	555.4	166.23				106	97	8	
15	37.5	0.00137	1.33	561.4	166.2				111	98	8	
16	40	0.00133	1.33	562.6	166.2				111	98	8	
17	42.5	0.00133	1.33	564.8	166.2				111	98	8	
18	45	0.00133	1.33	566.2	166.2				111	98	8	
19	47.5	0.00132	1.33	567.9	166.2				111	99	8	
20	50	0.00133	1.33	569.1	166.2				109	99	8	
21	52.5	0.00133	1.33	570.1	166.2				110	99	8	
22	55	0.00133	1.33	572	166.2				111	100	8	
23	57.5	0.00133	1.33	573.2	166.2				111	100	8	
24	60	0.00133	1.33	576.1	166.2				111	100	8	
25	62.5	0.00133	1.33	577.1	166.2				111	100	9	
26	65	0.00133	1.33	579.5	166.2				112	101	10	
27	67.5	0.00133	1.33	580	166.2				111	101	10	1.1 SCM
28	70	0.00133	1.33	582.7	166.2				111	104	10	900 scm
29	72.5	0.00133	1.33	583	166.2				111	104	6	
30	75	0.00133	1.33	586.2	166.2				111	104	6	

7	6 ✗
8	5 ✗
9	7 ✗
10	3 ✗
11	2 ✗
12 ✗	1

30 — 16 — 548

AIR ANALYSIS, INC

2 of 2

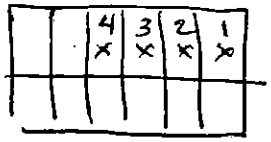
RUN NUMBER 1 POLLUTANT TESTED Metals EPA METHOD 29

Start Time: 1250

End Time: 350

Company:	Nucor
Location:	Crawfordville
Unit Tested:	PP Blr
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
T.E. Reader:	RS
AAI Project:	Date: 4-18
Barometric Pressure:	30.18
Ambient Temperature:	115

Diagram of Test Location



	CO2		O2
1	0	1	21
2	0	2	21
3	0	3	21
Avg.	0	Avg.	21
Silica ID			
Silica wt.		grams	
Impingers		mls	
Moisture Total		mls	
Pretest Pitot Ch.		pass / fail	
Postest Pitot Ch.		pass /fail	

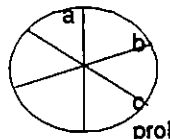
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg. 1



probe (quartz, glass, SS, Ti)

Meter Y	
Meter DeltaH@	
Pretest Leak Ch.	cfm@
Post test Leak Ch.	cfm@

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
							0					
31	775	?	0.9	5875	1466	NA	NA	Fully	111	104	6	
32	80		0.9	5886	1466				112	104	6	
33	825		0.9	5891	1466			Iced	112	104	6	
34	85		0.9	590	1466				112	104	6	
35	895		0.9	591	1466				112	104	6	
36	90		0.9	592.1	1466				112	107	6	
37	925		0.9	593.2	1466				112	107	6	
38	95		0.9	594	1466				112	107	6	
39	975		0.9	5951	1466				111	107	6	
40	100		0.9	597	1466				110	102	6	
41	1025		0.9	598.7	1466				107	103	6	
42	105		0.9	6019	1466				107	103	6	
43	1075		0.9	6025	1466				106	103	6	
44	110		0.9	6039	1466				110	103	6	
45	1125		0.9	6048	1466				110	103	6	
46	115		0.9	6075	1466				110	103	6	
47	1175		0.9	609	1466				110	103	6	
48	120		0.9	610	1466				110	103	6	
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

Filter Number:
Filter preweight:
Filter postweight:
Total:
Beaker ID:
Beaker preweight:
Beaker postweight:
Total:

AIR ANALYSIS, INC

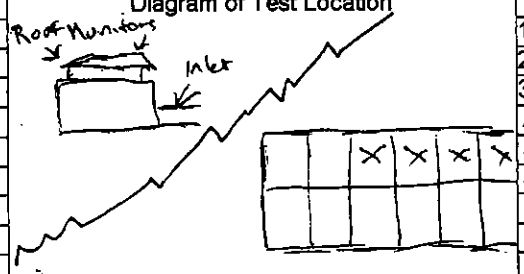
RUN NUMBER 2 POLLUTANT TESTED (PM) Metals EPA METHOD 29

Start Time: 5:05 Loss 2

End Time: 7:20

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	Positive Pressure BH
Meter Operator:	M. Dicer
Probe Operator:	M. Allen
Client Contact:	M Wabber
Agency Contact:	S. Friend
V.E. Reader:	R. Stapleton
AAI Project:	Date: 4-18-05
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location



CO2		O2	
1	0	1	21
2	0	2	21
3	0	3	21
Avg.		Avg.	21
Silica ID		13	
Silica wt.		26.2	grams
Impingers		10	mls
Moisture Total		36.2	mls
Pretest Pitot Ch.		pass / fail	
Postest Pitot Ch.		pass / fail	

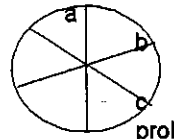
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg. 1



probe (quartz, glass, SS, Ti)

Meter Y

Meter DeltaH@

Pretest Leak Ch. 0 cfm@ 10

Post test Leak Ch. 0 cfm@ 10

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
				610.25			0					
1	2.5	0.00132	1.33	612.28	142	NA	NA	Fully ice	110	104	8	
2	5	0.00132	1.33	613.8	142				111	104	8	
3	7.5	0.00132	1.3	614.8	142				113	104	8	
4	10	0.00132	1.3	617.4	142				113	105	8	
5	12.5	0.00132	1.3	619	142				112	106	8	
6	15	0.00132	1.3	620.9	142				111	106	8	
7	17.5	0.00132	1.3	622.3	142			90	112	107	8	
8	20	0.00132	1.3	623.6	142				113	107	8	
9	22.5	0.00132	1.3	625.1	142				113	107	8	
10	25	0.00132	1.3	627	142				114	107	8	
11	27.5	0.00132	1.3	628.9	142				115	107	8	
12	30	0.00132	1.3	631.1	142				115	107	8	
13	32.5	0.00132	1.3	632.0	142				113	108	8	
14	35	0.00132	1.3	633.6	142				114	108	8	
15	37.5	0.00132	1.3	635.4	142				114	108	8	
16	40	0.00132	1.3	637	142				117	108	8	
17	42.5	0.00132	1.3	638.5	142			85	117	108	8	
18	45	0.00132	1.3	640.6	142				117	108	8	
19	47.5	0.00132	1.3	642.1	142				117	109	8	
20	50	0.00132	1.3	643.8	142				119	110	8	Filter Number:
21	52.5	0.00132	1.3	646.1	142			78	120	110	8	Filter preweight:
22	55	0.00132	1.3	648.5	142				120	110	8	Filter postweight:
23	57.5	0.00132	1.3	651.1	142				120	109	8	Total:
24	60	0.00132	1.3	652	142				119	111	8	Beaker ID:
25	62.5	0.00132	1.3	654	142				116	111	8	Beaker preweight:
26	65	0.00132	1.3	656.1	142				115	112	8	Beaker postweight:
27	67.5	0.00132	1.3	658.7	142				120	112	8	Total:
28	70	0.00132	1.3	659.1	142				120	113	8	
29	72.5	0.00132	1.3	662.1	142				122	114	8	
30	75	0.00132	1.3	663.1	142				123	113	8	

AIR ANALYSIS, 1.

RUN NUMBER 1 POLLUTANT TESTED Metals EPA METHOD 29

Start Time:

End Time:

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	PBLA
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
T.E. Reader:	RS
AI Project:	Date: 4.18.05
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location

CO2	O2
1	1
2	2
3	3
Avg.	Avg.
Silica ID	
Silica wt.	grams
Impingers	mls
Moisture Total	mls
Pretest Pitot Ch.	(pass) / fail
Postest Pitot Ch.	(pass) /fail

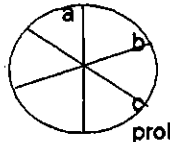
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg.



probe (quartz, glass, SS, Ti)

Meter Y	
Meter DeltaH@	
Pretest Leak Ch.	0 cfm@ 10
Post test Leak Ch.	0 cfm@ 10

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
31	775	0.00132	1.3	664.	142				124	114		
32	80	0.00132	1.3	664.8	142	NA	NA	ICed	124	114		
33	825	0.00132	1.3	665.8	142				126	114		
34	85	0.00132	1.3	667.6	142				126	114		
35	875	0.00132	1.3	669.3	142				126	116		
36	90	0.00132	1.3	671	142				123	115		
37	925	0.00132	1.3	672.5	142			90	123	115		
38	95	0.00132	1.3	673.9	142				123	115		
39	975	0.00132	1.3	676.4	142				123	115		
40	100	0.00132	1.3	678.1	142				123	115		
41	1025	0.00132	1.3	679.3	142				123	115		
42	105	0.00132	1.3	680.3	142			85	121	115		
43	1075	0.00132	1.3	682.5	142				118	115		
44	110	0.00132	1.3	684.5	142				118	115		
45	1125	0.00132	1.3	686.5	142			78	118	115		
46	115	0.00132	1.3	687.5	142				118	115		
47	1175	0.00132	1.3	689.4	142				118	115		
48	120	0.00132	1.3	691.0	142				118	115		
19												
20												Filter Number:
21												Filter preweight:
22												Filter postweight:
23												Total:
24												Beaker ID:
25												Beaker preweight:
26												Beaker postweight:
27												Total:
28												
29												
30												

AIR ANALYSIS, C

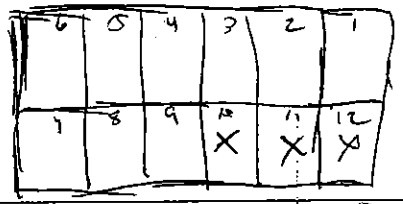
RUN NUMBER 3 POLLUTANT TESTED Metals EPA METHOD 29

Start Time: 820

End Time:

Company:	Nucor Steel
Location:	Crawfordsville
Unit Tested:	PPBH
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
V.E. Reader:	BS
AAI Project:	Date: 4-19-05
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location



	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.		Avg. 21
Silica ID		#14
Silica wt.		21.6 grams
Impingers		10 mls
Moisture Total		31.6 mls
Pretest Pitot Ch.		pass / fail
Postest Pitot Ch.		pass / fail

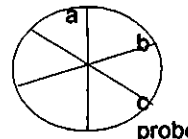
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg. 1



probe (quartz, glass, SS, Ti)

Meter Y	966
Meter DeltaH@	1.88
Pretest Leak Ch.	0 cfm@ 15
Post test Leak Ch.	cfm@

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
				700.464								
1	2.5	0.00133	1.32	702.3	174.4	NA	NA	Freezes	89	92	7	
2	5	0.00133	1.32	703.9	174.4				97	90	7	
3	7.5	0.00133	1.32	705.6	174.4				99	90	7	
4	10	0.00133	1.32	707.1	174.4				100	90	7	
5	12.5	0.00133	1.32	708	174.4				150	90	7	
6	15	0.00133	1.32	710.2	174.4				100	90	7	
7	17.5	0.00133	1.32	711.7	174.4				98	91	7	
8	20	0.00133	1.32	713.4	174.4				99	92	7	
9	22.5	0.00133	1.32	715.4	174.4				150	92	7	
10	25	0.00133	1.32	717.1	174.4				100	92	7	
11	27.5	0.00133	1.32	718.9	174.4				100	92	7	
12	30	0.00133	1.32	720.2	174.4				150	92	7	
13	32.5	0.00133	1.32	722	174.4				96	92	7	
14	35	0.00133	1.32	723.0	174.4				98	92	7	
15	37.5	0.00133	1.32	724.6	174.4				98	92	7	
16	40	0.00133	1.32	726.2	174.4				98	92	7	
17	42.5	0.00133	1.32	728.2	174.4				99	92	7	
18	45	0.00133	1.32	729.4	174.4				101	92	7	
19	47.5	0.00133	1.32	731.5	174.4				101	93	7	
20	50	0.00133	1.32	732.8	174.4				101	93	7	Filter Number:
21	52.5	0.00133	1.32	734.5	174.4				102	93	7	Filter preweight:
22	55	0.00133	1.32	736.1	174.4				102	94	7	Filter postweight:
23	57.5	0.00133	1.32	738.0	174.4				103	95	7	Total:
24	60	0.00133	1.32	739.5	174.4				102	95	7	Beaker ID:
25	62.5	0.00133	1.32	740.9	174.4				100	96	7	Beaker preweight:
26	65	0.00133	1.32	742.5	174.4				104	96	7	Beaker postweight:
27	67.5	0.00133	1.32	745	174.4				105	97	7	Total:
28	70	0.00133	1.32	746.2	174.4				109	98	7	
29	72.5	0.00133	1.32	747.8	174.4				110	98	7	
30	75	0.00133	1.32	749.4	174.4				110	98	7	

24 L

AIR ANALYSIS, LLC

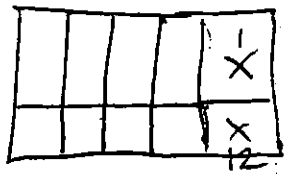
RUN NUMBER 3 POLLUTANT TESTED Metal EPA METHOD 29

Start Time:

End Time: 1:25 PM

Company:	Nucor
Location:	Crawfordsville
Unit Tested:	BOF
Meter Operator:	MD
Probe Operator:	MA
Client Contact:	MW
Agency Contact:	SF
V.E. Reader:	RS
AAI Project:	Date: 4/9/25
Barometric Pressure:	30.15
Ambient Temperature:	115

Diagram of Test Location



	CO2	O2
1	0	21
2	0	21
3	0	21
Avg.	0	Avg. 21
Silica ID		14
Silica wt.		21.6 grams
Impingers		10 mls
Moisture Total		31.6 mls
Pretest Pitot Ch.		pass / fail
Postest Pitot Ch.		pass / fail

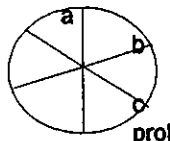
Nozzle size measurement

a nozzle (quartz, glass, SS)

b

c

Avg. 1



probe (quartz, glass, SS, Ti)

Meter Y	0.996
Meter DeltaH@	1.88
Pretest Leak Ch. 0 cfm@	15
Post test Leak Ch. 0 cfm@	15

Traverse Point	Minutes per point	Δ P	ΔH	Meter Cu. ft.	Static Pressure Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Impinger Outlet Temp. (F)	Meter Inlet Temp. (F)	Meter Outlet Temp (F)	Vacuum (inches)	NOTES
31	7.5	0.00133	1.32	753.3	174.4	NA	NA	Fridge ice	107	99	7	
32	80	0.00132	1.32	754.4	174.4				101	99	7	
33	8.25	0.00133	1.32	755.2	174.4				101	99	7	
34	85	0.00133	1.32	758.0	174.4				99	98	7	Stop 9:53 AM
35	8.75	0.00133	1.32	759	174.4				98	97	7	
36	90	0.00133	1.32	759.8	174.4				98	98	7	Restart 12:43
37	9.25	0.00133	1.32	761.3	174.4				99	97	7	
38	95	0.00133	1.32	763	174.4				99	97	7	
39	9.75	0.00133	1.32	764.8	174.4				101	97	7	
40	100	0.00133	1.32	766.7	174.4				102	98	7	
41	10.25	0.00133	1.32	767.9	174.4				103	98	7	
42	105	0.00133	1.32	769.9	174.4				104	98	7	
43	10.75	0.00133	1.32	771.2	174.4				100	98	7	
44	110	0.00133	1.32	772.8	174.4				101	99	7	
45	11.25	0.00133	1.32	774.3	174.4				104	98	7	
46	115	0.00133	1.32	776.1	174.4				103	98	7	
47	11.75	0.00133	1.32	777.9	174.4				102	98	7	
48	120	0.00133	1.32	779.44	174.4				102	98	7	
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

Filter Number:	
Filter preweight:	
Filter postweight:	
Total:	
Beaker ID:	
Beaker preweight:	
Beaker postweight:	
Total:	

APPENDIX IV LABORATORY DATA

PM10 DETERMINATION

FILTER

Filter ID	Run #	Pre-Weight	Post-Weight	Net Gain
1	1	2.9980	3.0028	0.0048
2	2	3.0603	3.0646	0.0043
3	3	2.4858	2.4885	0.0027

Acetone

Beaker ID	Run #	Pre-Weight	Post-Weight	Net Gain
a	1	65.7916	65.7952	0.0036
b	2	57.0337	57.0361	0.0024
j	3	66.5135	66.5156	0.0021
Acetone Beaker (50mls)		**56.3337**	**56.3336**	**0.0000**

TOTAL

Run #	Filter Net Gain	Acetone Net Gain	Totals
1	0.0048	0.0036	0.0084
2	0.0043	0.0024	0.0067
3	0.0027	0.0021	0.0048

ΔAir Analysis. Inc.

NUCOR Steel
Project Number: 302

CONDENSIBLE DETERMINATION

H2O

Beaker ID	Run #	Pre-Weight	Post-Weight	Net Gain	
e	1	56.0532	56.0581	0.0049	
f	2	53.7402	53.7404	0.0002	
l	3	65.9153	65.9190	0.0037	0.0029
Blank Beaker (500mls H2O)		**55.133**	**55.133**	**0.0000**	0.967

MeCl2

Beaker ID	Run #	Pre-Weight	Post-Weight	Net Gain	
c	1	65.7523	65.7524	0.0001	
d	2	55.8953	55.8956	0.0003	
k	3	54.6505	54.6505	0.0000	0.0001
Blank Beaker (50mls MeCl2)		**54.9354**	**54.9354**	**0.0000**	0.033

TOTAL

1	0.0049	0.0001	0.005
2	0.0002	0.0003	0.0005
3	0.0037	0	0.0037

Air Analysis, Inc.

3904 Clarks Creek Road
Plainfield, IN 46168

Project Number: 302-NUCOR STEEL

Lead & Mercury

EPA Method 29 Analysis

Analytical Report
5031

el1

Element One, Inc.
5022-C Wrightsville Av., Wilmington, NC 28403
910-793-0128 FAX: 910-792-6853 e1lab@e1lab.com

The following data for Analytical Report 5031
has been reviewed for completeness, accuracy,
adherence to method protocol,
and compliance with quality assurance guidelines.

Quality Assurance Review by:

Melissa Lawrence, QA Officer
May 7, 2005

Report Reviewed and Finalized By:

Ken Smith, Laboratory Director
May 7, 2005

el$_1$

SUMMARY OF RESULTS

el$_1$

Summary of Analysis

Summary of Mercury Analysis

Run Number		Average Total Catch, µg	Front half µg	H_2O_2/HNO_3 µg	Empty Imp. µg	$KMnO_4$ µg
Run 1	#1	2.54	< 0.1	1.32	0.71	0.51
	#2		< 0.1	1.32	0.72	0.51
Run 2	#1	5.48	0.11	1.19	< 0.21	4.18
	#2		0.10	1.18	< 0.21	4.18
Run 3	#1	3.40	0.17	1.38	< 0.2	1.85
	#2		0.17	1.38	< 0.2	1.83
Reagent Blank	#1	< 0.4	< 0.1	< 0.3	< 0.2	< 0.4
	#2		< 0.1	< 0.3	< 0.2	< 0.4

Summary of Metals Analysis

Element	Run 1 Total µg	Run 2 Total µg	Run 2 Total µg	Run 3 Total µg	Reagent Blank Total µg
Lead	< 0.5	5.75	5.52	11.1	< 0.5

ANALYTICAL NARRATIVE

el$_1$

Element One Analytical Narrative

Client	Air Analysis, Inc.	Element One #:	5031
Client ID:	302- Nucor Steel	Analyst:	DBW, CML, IJJ
Method:	M29	Date Received	4/22/05
Analytes	Pb, & Hg	Dates Analyzed	4/28-5/07/05

Summary of Analysis

The Method 29 samples were digested, prepared, and analyzed according to Method 29 protocol. Samples were analyzed for mercury on a PerkinElmer FIMS-100 CVAA mercury analyzer. The other metals were analyzed on a PerkinElmer ELAN 6100 ICP-MS.

Detection Limits

The FIMS-100 CVAA instrument reporting limit for mercury was 0.004 µg per aliquot analyzed. The ICP-MS instrument reporting limit is 2.5µg/L for lead.

Analysis QA/QC

Duplicate analyses relative percent difference (RPD), spike sample recovery, and second source calibration verification data are summarized in the Quality Control Section. All QA/QC data was within the criteria of the method.

Additional Comments

The reported results have not been corrected for any blank or spike recovery values. Nothing unusual was noticed with any of the samples or analyses.

QUALITY CONTROL SUMMARY

el$_1$

Summary of Quality Control Data

Mercury Duplicate Analysis RPD

Run Number	Front half	H_2O_2/HNO_3	Empty Imp	$KMnO_4$
Run 1	NA	0.1%	1.9%	0.3%
Run 2	6.3%	0.8%	NA	0.0%
Run 3	0.7%	0.0%	NA	1.1%
Reagent Blank	NA	NA	NA	NA

Mercury Spike Recoveries

Run Number		Front half	H_2O_2/HNO_3	Empty Imp	KMnO4
Run 3	# 1	103%	101%	102%	95%
	# 2	104%	101%	102%	95%

Metals Duplicate Analysis RPD and Spike Recoveries

Element	Run 2 RPD	Run 3 Recovery
Lead	4.0%	75%

Second Source Calibration Check Recoveries

Element	0.25 ppb	1 ppb	100 ppb	200 ppb
Lead		104%	99%	95%

ANALYTICAL DATA

el$_1$

elementOne **AIR TESTING SAMPLE SUBMISSION FORM** **Lab ID: 5031**

DUE DATE: 5/6/05

Project ID/ Number: Nucor Steel / 302

Client: **Air Analysis, Inc**	Date / Time Received: 4/22/05 / 0945

HNO_3 Lot:	HF Lot:	HCl Lot:	**Ref. Method:**
Volume Marked Y / N	Volume Loss Y / N / ?	pH < 2.0 Y / N	**29**

	Sample Identification		Sample Identification
1	Run 1		
2	Run 2		
3	Run 2 Duplicate		
4	Run 3		
5	Run 3 Spike		
6	Reagent Blank		

Analyses Requested: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, Zn & Hg

	Front Half		Back Half			HNO_3 (A)		$KMnO_4$ (B)		HCl (C)	
SAMPLE	BV, ml	FV, ml	BV, ml	Used	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml
1	54ml	100ml	290	145	50	109	200	400	500		
2/3	52ml	↓	270	135	↓	107	210	430	↓		
4/5	56ml	↓	310	155	↓	113	200	375	↓		
6	100ml	↓	200 H_2O_2 100 HNO_3	150	↓	200ml	200	100ml $KMnO_4$ 33ml DI	Calculate as 400ml		

Comments:

Element One, Inc. Form 118 - Revision 6.0

Sample Submission Form by PAS
4/23/2005 2:39:07 PM

Sample/Batch Report

Daph Woodman 4-29-05

User Name: daphne.woodman
Computer Name: ICPMS1
Sample File: C:\elandata\Sample\xx.sam
Report Date/Time: Friday, April 29, 2005 10:13:01

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
14		5031-1	Air Analysis, Inc.						
15		5031-2	Air Analysis, Inc.						
16	d	5031-2	Air Analysis, Inc	QC Duplicate					
17		5031-4	Air Analysis, Inc.						
18	s	5031-4	Air Analysis, Inc	Spike - 1					
19		5031-6	Air Analysis, Inc.						
20	x10	5031-1	Air Analysis, Inc.						
21	x500	5031-1	Air Analysis, Inc.						
22	x10	5031-2	Air Analysis, Inc.						
23	x10d	5031-2	Air Analysis, Inc	QC Duplicate					
24	x1000	5031-2	Air Analysis, Inc.						
25	x1000d	5031-2	Air Analysis, Inc	QC Duplicate					
26	x10	5031-4	Air Analysis, Inc.						
27	x10s	5031-4	Air Analysis, Inc	Spike - 1					
28	x1000	5031-4	Air Analysis, Inc.						
29	x1000s	5031-4	Air Analysis, Inc	Spike - 1					
30		5031-6	Air Analysis, Inc.						
5		QC Std #2							
31		200 ppb Ag							
32		5031-1	Air Analysis, Inc.						
33	x1000	5031-1	Air Analysis, Inc.						
34		5031-4	Air Analysis, Inc.						
35	s	5031-4	Air Analysis, Inc	Spike - 1					
38		2.5 ppb Se							
39	x10000	5031-1	Air Analysis, Inc.						
40	x2	5031-4	Air Analysis, Inc.						
41	x2s	5031-4	Air Analysis, Inc	Spike - 1					

Dataset Report

User Name: daphne.woodman
Computer Name: ICPMS1
Dataset File Path: c:\elandata\dataset\042805-1\
Report Date/Time: Friday, April 29, 2005 10:13:31

Daph Woodman 4-29-05

Autosampler Position: 3

The Dataset

Time	Sample ID	Batch ID	Read Type	Description	Init. Quant	Prep. Vol.	Aliquot. Vol.	Diluted V
16:41:22 Thu 28-Apr-05	Blank		Blank					
16:44:19 Thu 28-Apr-05	Standard 1		Standard #1					
16:47:16 Thu 28-Apr-05	Standard 2		Standard #2					
16:50:14 Thu 28-Apr-05	Standard 3		Standard #3					
16:53:11 Thu 28-Apr-05	QC Std 1		QC Std #1					
16:56:08 Thu 28-Apr-05	QC Std 2		QC Std #2					
16:59:05 Thu 28-Apr-05	QC Std 3		QC Std #3					
17:02:02 Thu 28-Apr-05	QC Std 4		QC Std #4					
17:05:00 Thu 28-Apr-05	QC Std 6		QC Std #6					
17:07:58 Thu 28-Apr-05	QC Std 7		QC Std #7					
17:10:56 Thu 28-Apr-05	QC Std 8		QC Std #8					
17:13:55 Thu 28-Apr-05	QC Std 9		QC Std #9					
17:16:54 Thu 28-Apr-05	QC Std 10		QC Std #10					
17:19:52 Thu 28-Apr-05	5031-1		Sample	Air Analysis, Inc.				
17:22:48 Thu 28-Apr-05	5031-2		Sample	Air Analysis, Inc.				
17:25:44 Thu 28-Apr-05	5031-2	d	QC Duplicate	Air Analysis, Inc.				
17:28:40 Thu 28-Apr-05	5031-4		Sample	Air Analysis, Inc.				
17:31:37 Thu 28-Apr-05	5031-4	s	Spike - 1	Air Analysis, Inc.				
17:34:33 Thu 28-Apr-05	5031-6		Sample	Air Analysis, Inc.				
17:37:30 Thu 28-Apr-05	5031-1	x10	Sample	Air Analysis, Inc.				
17:40:27 Thu 28-Apr-05	5031-1	x500	Sample	Air Analysis, Inc.				
17:43:25 Thu 28-Apr-05	5031-2	x10	Sample	Air Analysis, Inc.				
17:46:23 Thu 28-Apr-05	5031-2	x10d	QC Duplicate	Air Analysis, Inc.				
17:49:20 Thu 28-Apr-05	QC Std 1		QC Std #1					
17:52:17 Thu 28-Apr-05	QC Std 4		QC Std #4					
17:55:15 Thu 28-Apr-05	5031-2	x1000	Sample	Air Analysis, Inc.				
17:58:14 Thu 28-Apr-05	5031-2	x1000d	QC Duplicate	Air Analysis, Inc.				
18:01:11 Thu 28-Apr-05	5031-4	x10	Sample	Air Analysis, Inc.				
18:04:08 Thu 28-Apr-05	5031-4	x10s	Spike - 1	Air Analysis, Inc.				
18:07:04 Thu 28-Apr-05	5031-4	x1000	Sample	Air Analysis, Inc.				
18:10:01 Thu 28-Apr-05	5031-4	x1000s	Spike - 1	Air Analysis, Inc.				
18:12:57 Thu 28-Apr-05	5031-6		Sample	Air Analysis, Inc.				
18:15:53 Thu 28-Apr-05	QC Std 1		QC Std #1					
18:18:50 Thu 28-Apr-05	QC Std 4		QC Std #4					
09:03:24 Fri 29-Apr-05	QC Std #2		QC Std #2					
09:06:22 Fri 29-Apr-05	200 ppb Ag		Sample					
09:09:19 Fri 29-Apr-05	5031-1		Sample	Air Analysis, Inc.				
09:12:16 Fri 29-Apr-05	5031-1	x1000	Sample	Air Analysis, Inc.				
09:15:14 Fri 29-Apr-05	5031-4		Sample	Air Analysis, Inc.				
09:18:12 Fri 29-Apr-05	5031-4	s	Spike - 1	Air Analysis, Inc.				
09:27:07 Fri 29-Apr-05	QC Std 1		QC Std #1					
09:30:04 Fri 29-Apr-05	QC Std 4		QC Std #4					
09:41:50 Fri 29-Apr-05	2.5 ppb Se		Sample					

09:44:47 Fri 29-Apr-05	5031-1	x10000	Sample	Air Analysis, Inc.
09:47:44 Fri 29-Apr-05	QC Std 1		QC Std #1	
09:50:40 Fri 29-Apr-05	QC Std 4		QC Std #4	
09:53:38 Fri 29-Apr-05	5031-4	x2	Sample	Air Analysis, Inc.
09:56:35 Fri 29-Apr-05	5031-4	x2s	Spike - 1	Air Analysis, Inc.
10:05:25 Fri 29-Apr-05	QC Std 1		QC Std #1	
10:08:22 Fri 29-Apr-05	QC Std 4		QC Std #4	

elementOne **ICP-MS RUN SHEET** **5031**

Analyst: __DBW____ Date: 4-28-05 **Solid Samples** ☐ / *Liquid Samples*

Dph Wed 4-29-05

A/S Loc	Batch # for sample sets	Sample Lab ID	Sample Description	Type Sample QC Spike QC Dup QC Reg Blank	Spike concentratio	Prep Volume (ml)	Aliquot (ml)	Diluted to Volume (ml)	Units
12			LRB	S		100X2			
13			LRB	SS	Table #1	100X2			
14			5031-1	S		100X2			
15			5031-2	S		100X2			
16			5031-2	SD		100X2			
17			5031-4	S		100X2			
18			5031-4	SS	Table #1	100X2			
19			5031-6	S		100X2			
20			5031-1	S		100X2	1.0	10	
21			5031-1	S		100X2	0.02	10	
22			5031-2	S		100X2	1.0	10	
23			5031-2	SD		100X2	1.0	10	
24			5031-2	S		100X2	0.01	10	
25			5031-2	SD		100X2	0.01	10	
26			5031-4	S		100X2	1.0	10	
27			5031-4	SS	Table #1	100X2	1.0	10	
28			5031-4	S		100X2	0.01	10	
29			5031-4	SS	Table #1	100X2	0.01	10	
30			5031-6	S		100X2			
Dilutions and Rechecks									
5			QC Std #2						

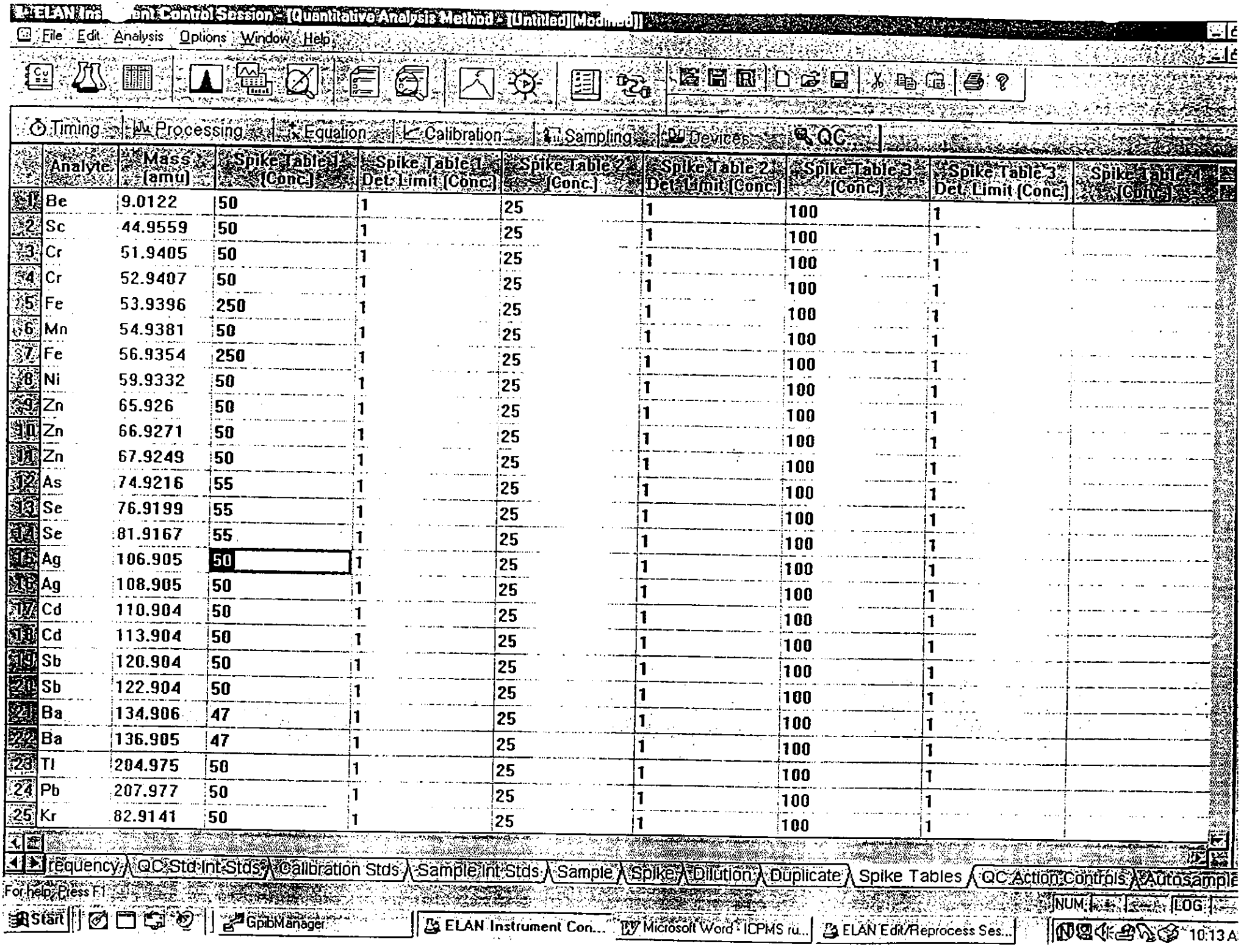
elementOne **ICP-MS RUN SHEET** **5031**

Analyst: __DBW____ Date: 4-28-05 **Solid Samples** ☐ / *Liquid Samples*

31			200 ppb Ag						
32			5031-1	S		100X2			
33			5031-1	S		100X2	0.01	10	
34			5031-4	S		100X2			
35			5031-4	SS	Table #1	100X2			
38			2.5 ppb Se						
39			5031-1	S		100X2	(0.01/10)*(1.0/10)		
40			5031-4	S		100X2	5.0	10	
41			5031-4	SS	Table #1	100X2	5.0	10	

Spikes are post at 0.02 mL of 25ppm spiking solutions lot 021405-ABC & F in a final volume of 10ml.

Submitted for QC:	Date: 4-29-05	Time: 10:15	By: DLJ	QC Review:	Date:	Time:	By:
Re-Test Required:	No:	Yes:	Comments:				
Resubmitted for QC:	Date:	Time:	By:	QC Review:	Date:	Time:	By:


ELAN Instrument Control Session - [Quantitative Analysis Method - [Untitled][Modified]]
File Edit Analysis Options Window Help
Timing Processing Equation Calibration Sampling Device QC
Analyte | Mass (amu) | Spike Table 1 (Conc.) | Spike Table 1 Det. Limit (Conc.) | Spike Table 2 (Conc.) | Spike Table 2 Det. Limit (Conc.) | Spike Table 3 (Conc.) | Spike Table 3 Det. Limit (Conc.) | Spike Table 4 (Conc.)
1 Be 9.0122 50 1 25 1 100 1
2 Sc 44.9559 50 1 25 1 100 1
3 Cr 51.9405 50 1 25 1 100 1
4 Cr 52.9407 50 1 25 1 100 1
5 Fe 53.9396 250 1 25 1 100 1
6 Mn 54.9381 50 1 25 1 100 1
7 Fe 56.9354 250 1 25 1 100 1
8 Ni 59.9332 50 1 25 1 100 1
9 Zn 65.926 50 1 25 1 100 1
10 Zn 66.9271 50 1 25 1 100 1
11 Zn 67.9249 50 1 25 1 100 1
12 As 74.9216 55 1 25 1 100 1
13 Se 76.9199 55 1 25 1 100 1
14 Se 81.9167 55 1 25 1 100 1
15 Ag 106.905 50 1 25 1 100 1
16 Ag 108.905 50 1 25 1 100 1
17 Cd 110.904 50 1 25 1 100 1
18 Cd 113.904 50 1 25 1 100 1
19 Sb 120.904 50 1 25 1 100 1
20 Sb 122.904 50 1 25 1 100 1
21 Ba 134.906 47 1 25 1 100 1
22 Ba 136.905 47 1 25 1 100 1
23 Tl 204.975 50 1 25 1 100 1
24 Pb 207.977 50 1 25 1 100 1
25 Kr 82.9141 50 1 25 1 100 1
Frequency QC Std Int Stds Calibration Stds Sample Int Stds Sample Spike Dilution Duplicate Spike Tables QC Action Controls Autosample
For help, Press F1
NUM LOG
Start GpibManager ELAN Instrument Con... Microsoft Word - ICPMS ru... ELAN Edit/Reprocess Ses... 10:13 A

Sample_ID	Date	Time	Mean_Sig	Mean_ST	Mean_SA	Units	Alq.	Vol.	Sig 1	Std_U 1	Smp_U 1	Sig 2	Std_U 2	Smp_U 2
Calib Blank	4/28/2005	11:51:28	0.0027957			µg			0.0027957					
STD1=.004ug	4/28/2005	11:52:31	0.00088695			µg			0.00088695					
STD2=.04ug	4/28/2005	11:53:34	0.0089693			µg			0.0089693					
STD3=.08ug	4/28/2005	11:54:40	0.01892292			µg			0.01892292					
4=.12ug	4/28/2005	11:55:46	0.0278251			µg			0.0278251					
5=.16ug	4/28/2005	11:56:53	0.03692484			µg			0.03692484					
STD6=.2ug	4/28/2005	11:58:01	0.0455162			µg			0.0455162					
Reagent Blank	4/28/2005	11:59:37	0.00006637	0.00029396	0.00029396	µg			0.00018154	0.00080407	0.00080407	-0.0000487	-0.0002161	-0.0002161
0.004 = DL	4/28/2005	12:04:02	0.00083476	0.00369569	0.00369569	µg			0.00083476	0.00369569	0.00369569			
0.080 = QC STD 2	4/28/2005	12:05:09	0.01819567	0.07973295	0.07973295	µg			0.01819567	0.07973295	0.07973295			
0.080 = QC STD 3	4/28/2005	12:06:16	0.01918385	0.08401424	0.08401424	µg			0.01918385	0.08401424	0.08401424			
REAGENT BLANK	4/28/2005	12:07:20	0.0001008	0.0004465	0.0004465	µg			0.0001008	0.0004465	0.0004465			
0.004 = DL	4/28/2005	13:05:58	0.00091281	0.00404106	0.00404106	µg	4	320	0.00091281	0.00404106	0.00404106			
0.080 = QC STD 2	4/28/2005	13:07:05	0.018561	0.08131632	0.08131632	µg	4	320	0.018561	0.08131632	0.08131632			
REAGENT BLANK	4/28/2005	13:08:09	0.00017973	0.00079603	0.00079603	µg	4	320	0.00017973	0.00079603	0.00079603			
5031-A-1	4/28/2005	13:11:18	0.0032265	0.01426418	0.71320938	µg	4	200	0.00319531	0.01412658	0.70632926	0.00325768	0.01440179	0.7200895
5031-A-2/3	4/28/2005	13:12:54	-0.0000197	-0.0000873	-0.0045839	µg	4	210	0.00000564	0.00002499	0.00131206	-0.000045	-0.0001996	-0.0104799
5031-A-4	4/28/2005	13:14:31	0.00006509	0.00028833	0.01441653	µg	4	200	0.00005423	0.0002402	0.01201049	0.00007596	0.00033645	0.01682257
5031-A-5-SPK	4/28/2005	13:16:08	0.01865649	0.08173009	4.08650492	µg	4	200	0.01863246	0.08162594	4.08129741	0.01868053	0.08183424	4.09171243
5031-A-6	4/28/2005	13:17:45	0.0000854	0.00037826	0.01891321	µg	4	200	0.00014164	0.00062734	0.03136735	0.00002916	0.00012918	0.00645908
5031-B-1	4/28/2005	13:19:23	0.00092502	0.00409507	0.51188429	µg	4	500	0.00092631	0.00410077	0.51259666	0.00092373	0.00408937	0.51117193
5031-B-2/3	4/28/2005	13:21:01	0.0075846	0.03344455	4.18056904	µg	4	500	0.00758551	0.03344851	4.18106397	0.0075837	0.03344059	4.18007411
5031-B-4	4/28/2005	13:22:39	0.00333682	0.01475095	1.8438695	µg	4	500	0.00335493	0.01483085	1.8538563	0.00331871	0.01467106	1.83388269
5031-B-5-SPK	4/28/2005	13:24:14	0.02075617	0.09081603	11.3520047	µg	4	500	0.0207409	0.09075004	11.3437551	0.02077144	0.09088203	11.3602542
0.004 = DL	4/28/2005	13:26:27	0.00095026	0.00420676	0.00420676	µg	4	500	0.00095026	0.00420676	0.00420676			
0.080 = QC STD 2	4/28/2005	13:27:34	0.01870361	0.08193424	0.08193424	µg	4	500	0.01870361	0.08193424	0.08193424			
REAGENT BLANK	4/28/2005	13:28:38	0.00017892	0.00079246	0.00079246	µg	4	500	0.00017892	0.00079246	0.00079246			
5031-B-6	4/28/2005	13:30:10	-0.0000175	-0.0000775	-0.0077595	µg	4	400	-0.0000377	-0.0001672	-0.0167234	0.00000271	0.00001204	0.00120446
5031-BH-1	4/28/2005	13:31:42	0.00411573	0.01818582	1.31847217	µg	4	290	0.00411293	0.01817348	1.31757768	0.00411853	0.01819816	1.31936667
5031-BH-2/3	4/28/2005	13:33:15	0.00398705	0.01761861	1.1692563	µg	4	270	0.00400269	0.01768752	1.1939081	0.00397142	0.01754969	1.1846045
5031-BH-4	4/28/2005	13:34:48	0.00403354	0.01782355	1.38132522	µg	4	310	0.00403328	0.01782239	1.38123549	0.0040338	0.0178247	1.38141494
5031-BH-5-SPK	4/28/2005	13:36:21	0.02251897	0.09842692	7.62808634	µg	4	310	0.02248398	0.098276	7.61639036	0.02255396	0.09857783	7.63978232
5031-BH-6	4/28/2005	13:37:55	0.00011609	0.00051418	0.03856375	µg	4	300	0.00020353	0.00090142	0.06760673	0.00002865	0.00012694	0.00952078
0.004 = DL	4/28/2005	13:46:30	0.0008969	0.00397067	0.00397067	µg	4	200	0.0008969	0.00397067	0.00397067			
0.080 = QC STD 2	4/28/2005	13:47:37	0.01866102	0.08174971	0.08174971	µg	4	200	0.01866102	0.08174971	0.08174971			
REAGENT BLANK	4/28/2005	13:48:41	0.00018943	0.00083901	0.00083901	µg	4	200	0.00018943	0.00083901	0.00083901			
0.004 = DL	4/28/2005	14:41:32	0.00094513	0.00418406	0.00418406	µg	4	700	0.00094513	0.00418406	0.00418406			
0 = QC STD 3	4/28/2005	14:42:39	0.01914398	0.08384159	0.08384159	µg	4	700	0.01914398	0.08384159	0.08384159			
GENT BLANK	4/28/2005	14:43:44	0.00025959	0.00114968	0.00114968	µg	4	700	0.00025959	0.00114968	0.00114968			
Calib Blank	4/28/2005	15:30:36	0.00315633			µg			0.00315633					
STD1=.004ug	4/28/2005	15:31:40	0.00110669			µg			0.00110669					
STD2=.04ug	4/28/2005	15:32:44	0.01024893			µg			0.01024893					
STD3=.08ug	4/28/2005	15:33:49	0.02107251			µg			0.02107251					
STD4=.12ug	4/28/2005	15:34:55	0.03059855			µg			0.03059855					
STD5=.16ug	4/28/2005	15:36:02	0.04119103			µg			0.04119103					
STD6=.2ug	4/28/2005	15:37:10	0.05061039			µg			0.05061039					
Reagent Blank	4/28/2005	15:38:46	0.00037005	0.00137381	0.00137381	µg			0.0006621	0.00245827	0.00245827	0.00007799	0.00028936	0.00028936
0.004 = DL	4/28/2005	15:42:25	0.00110223	0.00409474	0.00409474	µg			0.00110223	0.00409474	0.00409474			
0.080 = QC STD 2	4/28/2005	15:43:31	0.02159506	0.08245496	0.08245496	µg			0.02159506	0.08245496	0.08245496			
0.080 = QC STD 3	4/28/2005	15:44:37	0.02113913	0.08066424	0.08066424	µg			0.02113913	0.08066424	0.08066424			
REAGENT BLANK	4/28/2005	15:45:41	0.00043178	0.00160263	0.00160263	µg			0.00043178	0.00160263	0.00160263			
5025/5031-FH-BLK	4/28/2005	15:47:14	0.00018098	0.00067154	0.01678865	µg	4	100	0.00016452	0.00061044	0.01526112	0.00019745	0.00073264	0.01831618
5025/5031-FH-BLK-S	4/28/2005	15:48:47	0.01905613	0.07251101	4.53193813	µg	1.6	100	0.01898927	0.07225007	4.51562971	0.01912298	0.07277194	4.54824655
5025/5031-FH-6	4/28/2005	15:56:49	0.00067602	0.00251008	0.06275211	µg	4	100	0.00081606	0.0030305	0.0757625	0.00053598	0.00198966	0.04974172
5031-FH-2/3	4/28/2005	16:00:04	0.00115552	0.00429304	0.10732621	µg	4	100	0.001192	0.00442875	0.11071893	0.00111905	0.00415733	0.10393349
5031-FH-4	4/28/2005	16:01:37	0.00187075	0.0069568	0.17392018	µg	4	100	0.00187688	0.00697966	0.17449163	0.00186461	0.00693394	0.17334873
0.004 = DL	4/28/2005	16:02:42	0.00113023	0.00419891	0.00419891	µg	4	100	0.00113023	0.00419891	0.00419891			
0.080 = QC STD 2	4/28/2005	16:03:50	0.02169196	0.08283586	0.08283586	µg	4	100	0.02169196	0.08283586	0.08283586			
REAGENT BLANK	4/28/2005	16:04:54	0.00041923	0.00155603	0.00155603	µg	4	100	0.00041923	0.00155603	0.00155603			
Calib Blank	4/28/2005	17:17:54	0.0033103			µg	4	200	0.0033103					
STD1=.004ug	4/28/2005	17:18:57	0.00098543			µg	4	200	0.00098543					
STD2=.04ug	4/28/2005	17:20:02	0.01046968			µg	4	200	0.01046968					
STD3=.08ug	4/28/2005	17:21:07	0.02137058			µg	4	200	0.02137058					
STD4=.12ug	4/28/2005	17:22:13	0.03152574			µg	4	200	0.03152574					
STD5=.16ug	4/28/2005	17:23:20	0.04216271			µg	4	200	0.04216271					
STD6=.2ug	4/28/2005	17:24:28	0.05159739			µg	4	200	0.05159739					
Reagent Blank	4/28/2005	17:29:02	0.00047997	0.00187354	0.00187354	µg	4	200	0.00097793	0.00381736	0.00381736	-0.0000179	-0.0000702	-0.0000702
0.004 = DL	4/28/2005	17:30:07	0.00099915	0.00390014	0.00390014	µg	4	200	0.00099915	0.00390014	0.00390014			
0.080 = QC STD 2	4/28/2005	17:31:14	0.02166576	0.08354377	0.08354377	µg	4	200	0.02166576	0.08354377	0.08354377			
0.080 = QC STD 3	4/28/2005	17:32:21	0.02162116	0.08337398	0.08337398	µg	4	200	0.02162116	0.08337398	0.08337398			
REAGENT BLANK	4/28/2005	17:33:25	0.00047467	0.00185343	0.00185343	µg	4	200	0.00047467	0.00185343	0.00185343			
1-FH-1	4/28/2005	17:36:36	0.00072609	0.00283471	0.07086785	µg	4	100	0.00075169	0.00293462	0.07336573	0.00070048	0.00273479	0.06836997
5031-FH-5-SPK	4/28/2005	17:38:13	0.0233621	0.08999521	2.24988044	µg	4	100	0.02328248	0.08969269	2.2423174	0.02344173	0.09029773	2.25744347
0.004 = DL	4/28/2005	17:50:33	0.00096775	0.00377764	0.00377764	µg	4	200	0.00096775	0.00377764	0.00377764			
0.080 = QC STD 2	4/28/2005	17:51:40	0.02139496	0.0825127	0.0825127	µg	4	200	0.02139496	0.0825127	0.0825127			
REAGENT BLANK	4/28/2005	17:52:44	0.00044525	0.0017386	0.0017386	µg	4	200	0.00044525	0.0017386	0.0017386			

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Da Thursday, April 28, 2005 16:41:22
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	301321.5		ppb
|-	Sc	45	172316.1		ppb
|>	Rh	103	304097.6		ppb
|>	Ho	165	764832.7		ppb
|-	Pb	208	4539.8		ppb
	Kr	83	85.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Da Thursday, April 28, 2005 16:44:19
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	319751.5		ppb
|-	Sc	45	176723.4		ppb
|>	Rh	103	314488.6		ppb
|>	Ho	165	796905.2		ppb
|-	Pb	208	38668.7	1.00228	ppb
	Kr	83	93.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Da Thursday, April 28, 2005 16:47:16
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	317483.4		ppb
|-	Sc	45	176370.7		ppb
|>	Rh	103	311507.7		ppb
|>	Ho	165	810360.2		ppb
|-	Pb	208	3390275	98.31932	ppb
	Kr	83	98.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Da Thursday, April 28, 2005 16:50:14
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	305887		ppb
|-	Sc	45	174635.5		ppb
|>	Rh	103	301683.5		ppb
|>	Ho	165	787823.9		ppb
|-	Pb	208	16756078	500.3361	ppb
	Kr	83	156.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Thursday, April 28, 2005 16:53:11
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	297494		ppb
|-	Sc	45	167883.5		ppb
|>	Rh	103	303691.4		ppb
|>	Ho	165	766543.9		ppb
|-	Pb	208	13934.3	0.28809	ppb
	Kr	83	101.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Da Thursday, April 28, 2005 16:56:08
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	305435.9		ppb
|-	Sc	45	173215		ppb
|>	Rh	103	311801.2		ppb
|>	Ho	165	795795.3		ppb
|-	Pb	208	39711.4	1.03458	ppb
	Kr	83	101.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Da Thursday, April 28, 2005 16:59:05
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	306121.3		ppb
|-	Sc	45	173202.1		ppb
|>	Rh	103	305183.3		ppb
|>	Ho	165	784793.1		ppb
|-	Pb	208	6369395	190.8724	ppb
	Kr	83	116.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Thursday, April 28, 2005 17:02:02
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	309125.4		ppb
|-	Sc	45	174380.4		ppb
|>	Rh	103	310074.6		ppb
|>	Ho	165	795036.7		ppb
|-	Pb	208	3338269	98.6743	ppb
	Kr	83	111		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Da Thursday, April 28, 2005 17:05:00
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	312453.2		ppb
|-	Sc	45	158734.3		ppb
|>	Rh	103	256238.9		ppb
|>	Ho	165	719536.7		ppb
|-	Pb	208	11479.4	0.23565	ppb
	Kr	83	114.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Da Thursday, April 28, 2005 17:07:58
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	327002.7		ppb
|-	Sc	45	160274.9		ppb
|>	Rh	103	261928.6		ppb
|>	Ho	165	723367.1		ppb
|-	Pb	208	8542.5	0.13824	ppb
	Kr	83	107.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 9
Sample Da Thursday, April 28, 2005 17:13:55
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	357592.8		ppb
|-	Sc	45	180103.9		ppb
|>	Rh	103	297508.6		ppb
|>	Ho	165	800582.1		ppb
|-	Pb	208	21550.4	0.49375	ppb
	Kr	83	51		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 10
Sample Da Thursday, April 28, 2005 17:16:54
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	345234.6		ppb
|-	Sc	45	169546.2		ppb
|>	Rh	103	283028.8		ppb
|>	Ho	165	770042.5		ppb
|-	Pb	208	1590206	48.45306	ppb
	Kr	83	57.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-1
Sample Da Thursday, April 28, 2005 17:19:52
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	237235		ppb
|-	Sc	45	723105.4		ppb
|>	Rh	103	212828.3		ppb
|>	Ho	165	662696.9		ppb
|-	Pb	208	3567.3	-0.01259	ppb
	Kr	83	2348.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-2
Sample Da Thursday, April 28, 2005 17:22:48
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	242987.7		ppb
|-	Sc	45	537601.5		ppb
|>	Rh	103	242332.8		ppb
|>	Ho	165	846931.1		ppb
|-	Pb	208	1039289	28.74923	ppb
	Kr	83	1485.5		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-2
Sample Da Thursday, April 28, 2005 17:25:44
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	264368.7		ppb
|-	Sc	45	468424.1		ppb
|>	Rh	103	270463.3		ppb
|>	Ho	165	908751.7		ppb
|-	Pb	208	1071745	27.61421	ppb
	Kr	83	1494.5		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-6
Sample Da Thursday, April 28, 2005 17:34:33
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	393244.1		ppb
|-	Sc	45	546936.3		ppb
|>	Rh	103	317327.9		ppb
|>	Ho	165	846917.5		ppb
|-	Pb	208	38712.8	0.93624	ppb
	Kr	83	255		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Thursday, April 28, 2005 17:49:20
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	278090.9		ppb
|-	Sc	45	175091.7		ppb
|>	Rh	103	306105.1		ppb
|>	Ho	165	769206.5		ppb
|-	Pb	208	3496.6	-0.03268	ppb
	Kr	83	78.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Thursday, April 28, 2005 17:52:17
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	286013.6		ppb
|-	Sc	45	181138.1		ppb
|>	Rh	103	315440.6		ppb
|>	Ho	165	801484.9		ppb
|-	Pb	208	3339358	97.91067	ppb
	Kr	83	94.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Friday, April 29, 2005 09:47:44
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	233671		ppb
|-	Sc	45	185997		ppb
|>	Rh	103	351048.4		ppb
|>	Ho	165	852118.7		ppb
|-	Pb	208	3723.6	-0.03685	ppb
	Kr	83	88.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 29, 2005 09:50:40
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	243776.8		ppb
|-	Sc	45	190097.1		ppb
|>	Rh	103	359745.8		ppb
|>	Ho	165	870101.9		ppb
|-	Pb	208	3587950	96.9022	ppb
	Kr	83	87.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-4
Sample Da Friday, April 29, 2005 09:53:38
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	193517.6		ppb
|-	Sc	45	329617.2		ppb
|>	Rh	103	256536.4		ppb
|>	Ho	165	844853.4		ppb
|-	Pb	208	1000061	27.7146	ppb
	Kr	83	1106.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5031-4
Sample Da Friday, April 29, 2005 09:56:35
Sample De Air Analysis, Inc.
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	189413		ppb
|-	Sc	45	316656.6		ppb
|>	Rh	103	266233.3		ppb
|>	Ho	165	877750		ppb
|-	Pb	208	2443374	65.37028	ppb
	Kr	83	1146.1		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Da Friday, April 29, 2005 10:05:25
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	213197.4		ppb
|-	Sc	45	183149.4		ppb
|>	Rh	103	355426.7		ppb
|>	Ho	165	849427.2		ppb
|-	Pb	208	6087.8	0.02923	ppb
	Kr	83	85		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Da Friday, April 29, 2005 10:08:22
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Inter	Conc. Mea	Report Unit
	Li	6	215622.9		ppb
|-	Sc	45	187456.9		ppb
|>	Rh	103	366168.5		ppb
|>	Ho	165	879440.2		ppb
|-	Pb	208	3558382	95.07217	ppb
	Kr	83	84.7		ppb

APPENDIX V CHAIN OF CUSTODY

Air Analysis, Inc
3904 Clarks Creek Road
Plainfield, IN 46168
PH: 317-837-8514
FAX: 317-837-8518

Chain of Custody Form

Date: 4-21-05

Job Number: 302

Invoice to: Air Analysis, Inc
3904 Clarks Creek Road
Plainfield, IN 46168

Report to: Mike Dicen @ above address
Fax Results to 317-837-8518

Additional Notes: ATP has blanks for this job. Nucor Steel test.

Sample ID	Number of Containers	Description	Container P or G	Sample Date	Analysis to perform
R1	1	Filter	P	4-18	Method 29
R2	1	Filter	P	4-18	Full Metals
R3	1	Filter	P	4-19	Analysis
Blank	1	Filter	P		
R1	1	Probe/Nozzle/Line	P	4-18	
R2	1	Rinses	P	4-18	
R3	1	↓	P	4-19	
R1	1	Impingers 1-2	P	4-18	
R2	1	Rinses	P	4-18	
R3	1	↓	P	4-19	
R1	1	Impinger 3	P	4-18	
R2	1	Rinses	P	4-18	
R3	1	↓	P	4-19	

SAMPLER DATE:

SHIPMENT METHOD: Fed Ex

AIRBILL NUMBER:

Required Turnaround: 24 HR | 48 HR | 5 BUSINESS DAYS | 10 BUSINESS DAYS | OTHER Normal

RELINQUISHED BY	MD	Date	4-21	RELINQUISHED BY		Date		COURIER	
Company	Air Analysis	Time	3P	Company		Time			
RECEIVED BY		Date		RECEIVED BY		Date			
Company		Time		Company		Time			

Air Analysis, Inc
3904 Clarks Creek Road
Plainfield, IN 46168
PH: 317-837-8514
FAX: 317-837-8518

Chain of Custody Form

Date:

Job Number:

Invoice to: Air Analysis, Inc
3904 Clarks Creek Road
Plainfield, IN 46168

Report to: Mike Dicen @ above address
Fax Results to 317-837-8518

Additional Notes

Sample ID	Number of Containers	Description	Container P or G	Sample Date	Analysis to perform
R1	1	Filter	P	4-18	Metals Method
R2	1	Filter	P	4-18	29
R3	1	Filter	P	4-18	↓
Blank	1	Filter	P	NA	↓
R1	1	Probe/Nozzle	P		↓
R2, R3	2	Rinse	P		↓
R3	1	Impingers 1-2	P		↓
R1	1	↓			↓
R2	1	↓			↓
R3	1	↓			↓

SAMPLER DATE:

SHIPMENT METHOD

AIRBILL NUMBER

Required Turnaround: 24 HR | 48 HR | 5 BUSINESS DAYS | 10 BUSINESS DAYS | OTHER ____

RELINQUISHED BY		Date		RELINQUISHED BY		Date		COURIER
Company		Time		Company		Time		
RECEIVED BY		Date		RECEIVED BY		Date		
Company		Time		Company		Time		

Air Analysis, Inc 3904 Clarks Creek Road Plainfield, IN 46168 PH: 317-837-8514 FAX: 317-837-8518	Chain of Custody Form Date: 4-21-05	Job Number: 302 Invoice to: Air Analysis, Inc 3904 Clarks Creek Road Plainfield, IN 46168

Sample ID	Number of Containers	Description	Container P or G	Sample Date	Analysis to perform	Report to: Mike Dicen @ above address Fax Results to 317-837-8518 Additional Notes
R1	1	Impingers 4-5	G	4-18	Method 29	ATP has blanks
R2	1	KMnO4	G	4-18	Full Metals	used for this job
R3	1	↓	G	4-19	Analysis	

SAMPLER DATE: MD

SHIPMENT METHOD: Fed Ex

AIRBILL NUMBER:

Required Turnaround: 24 HR | 48 HR | 5 BUSINESS DAYS | 10 BUSINESS DAYS | OTHER

RELINQUISHED BY	MD	Date	4-21	RELINQUISHED BY		Date		COURIER
Company		Time	4	Company		Time		
RECEIVED BY		Date		RECEIVED BY		Date		
Company		Time		Company		Time		

AGA
Member of the Linde Gas Group

Linde

(800)
532-7474
www.iemiinc.com

Certificate of Analysis
EPA Protocol
Performed according to EPA-600/R-97/121, Procedure G1

B163418

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	6647 EPA C3H8/N2 1-99 PPM	**Blend Tolerance:**	5 % Relative
Production #:	100061496	**Store/Use Temp:**	35 to 90 F
Batch #:	02499M2180MC	**Blend Type:**	EPA Protocol
Cylinder #:	CC41701	**Cyl. Pressure:**	2000 psig
Expiration Date:	12/23/2005	**Balance Gas:**	Nitrogen
Shelf Life:	36 months	**CGA:**	350
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	38	38.9 +/- 0.4 ppm	12/23/2002
7727-37-9	Nitrogen		Balance	12/23/2002

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
74-98-6	Propane	CC206 , GMIS	3.113 ppm	12/31/2003
7727-37-9	Nitrogen	CC154126 , GMIS	Bal	12/19/2004

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	12/22/2002

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jim Healy

James R Healy

HiQ Analysis Certificate

AGA
Member of the Linde Gas Group

Linde

ME MONITORING INSTRUMENTS

(800) 532-7474

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	6647	**Blend Tolerance:**	5 % Relative
EPA C3H8/N2 1-99 PPM		**Blend Type:**	EPA Protocol
Production #:	100077553	**Cyl. Pressure:**	2000 psig
Lot #:	02499M3020ZE	**Balance Gas:**	Nitrogen
Cylinder #:	CC13911	**CGA:**	350
Expiration Date:	12/15/2006	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	64	63.7 +/- 0.6 ppm	12/15/2003
7727-37-9	Nitrogen		Balance	12/15/2003

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
74-98-6	Propane	CC100454 , GMIS	10.52 ppm	06/05/2005
74-98-6	Propane	CC154126 , GMIS	101.0 ppm	06/05/2005

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	11/11/2003

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

B17112B

Analytical report approved by Jim Healy

James R Healy

HiQ Analysis Certificate

AGA
Member of the Linde Gas Group

Linde

IEMI MONITORING INSTRUMENTS (800) 532-7474
www.iemilnc.com

Certificate of Analysis
EPA Protocol
Performed according to EPA-600/R-97/121, Procedure G1

B16343 B

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:
AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:
AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	4004 EPA PROPANE/N2 100-999 PPM	**Blend Tolerance:**	5 % Relative
Production #:	100061487	**Store/Use Temp:**	35 to 90 F
Batch #:	02499M2170GF	**Blend Type:**	EPA Protocol
Cylinder #:	CC42922	**Cyl. Pressure:**	2000 psig
Expiration Date:	12/23/2005	**Balance Gas:**	Nitrogen
Shelf Life:	36 months	**CGA:**	350
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	108	109 +/- 1 ppm	12/23/2002
7727-37-9	Nitrogen		Balance	12/23/2002

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
74-98-6	Propane	CC73695 , GMIS	1021 ppm	06/14/2004
7727-37-9	Nitrogen	CC154126 , GMIS	Bal	12/19/2004

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	12/22/2002

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jim Healy

James R Healy

HiQ Analysis Certificate

CALIBRATION CHECK
Orsat Test) per EUTIC Guideline GD-28
04-18-05

Nucor Steel
Crawfordsville

	Run 1	Run 2	Run 3	Average
Y as =	0.993	0.912	0.904	0.933

Average result must be within 5% of Y

Result (%)	3.79%

PASS POST CAL

Dry Gas Meter Calibration Data	
ID :	80
Y :	0.961
Delta H :	1.90

RUN 1	Volume	Delta H	DGM(Inlet)	DGM(Outlet)
1		1.307	100	101
2	Nucor Steel	1.307	102	102
3	04-18-05	1.307	104	102
4	(Post Test) per EUTIC Guideline GD-28	1.307	104	101
5		1.307	100	101
6		1.307	103	99
7		1.307	104	99
8		1.307	107	93
9		1.307	108	99
10		1.307	107	103
11		1.307	106	101
12		1.307	108	101
13		1.307	107	104
14		1.307	108	105
15		1.307	110	104
16		1.307	110	104
17		1.307	110	103
18		1.307	107	103
19		1.307	106	103
20		1.307	109	102
21		1.307	108	102
22		1.307	109	102
23		1.307	109	102
24		1.307	110	102
25		1.307	1111	102
26		1.307	112	106
27		1.307	112	107
28	952.750	1.307	115	107
29	785.070	1.307	115	108
30		1.307	110	108

Volume	Avg. Dh		Avg. Meter T(F)
187.680	1.31		121.80

Barometric Pressure:	30.14	Meter Y:	0.961
Test Time:	240	Delta Ha:	1.60

Yqa =	0.993

RUN 2	Volume	Delta H	DGM(Inlet)	DGM(Outlet)
1	Nucor Steel	1.32	76	64
2	04-18-05	1.32	76	64
3	(Post Test) per EUTIC Guideline GD-28	1.32	78	65
4		1.32	77	66
5		1.32	77	67
6		1.32	76	68
7		1.32	74	68
8		1.32	77	69
9		1.32	78	66
10		1.32	80	78
11		1.32	83	72
12		1.32	81	72
13		1.32	78	73
14		1.32	78	73
15		1.32	80	73
16		1.32	80	73
17		1.32	84	74
18		1.32	84	77
19		1.32	89	78
20		1.32	89	78
21		1.32	83	78
22		1.32	92	80
23		1.32	83	93
24		1.32	86	82
25		1.32	85	82
26		1.32	85	81
27	1,156.399	1.32	92	82
28	961.591	1.32	96	83
29		1.32	97	85
30		1.32	95	85

Volume	Avg. Dh		Avg. Meter T(F)
195.279	1.32		79.78

Barometric Pressure:	30.14	Meter Y:	0.961
Test Time:	280	Delta Ha:	1.690

Yqa =	0.912

RUN 3	Volume	Delta H	DGM(Inlet)	DGM(Outlet)
1		1.14	76	64
2	Nucor Steel	1.14	76	64
3	04-18-05	1.14	78	65
4	Crawfordsville	1.14	77	66
5		1.14	77	67
6		1.14	78	68
7		1.14	74	69
8		1.14	77	69
9		1.14	78	66
10		1.14	80	70
11		1.14	83	72
12		1.14	81	72
13		1.14	78	73
14		1.14	78	73
15		1.14	80	73
16		1.14	80	73
17		1.14	84	74
18		1.14	84	77
19		1.14	89	76
20		1.14	89	78
21		1.14	83	78
22		1.14	92	80
23		1.14	83	93
24		1.14	86	82
25		1.14	85	82
26		1.14	85	81
27	341.712	1.14	92	82
28	158.030	1.14	96	83
29		1.14	97	85
30		1.14	95	85

Volume	Avg. Dh		Avg. Meter T(F)
180.712	1.14		79.70

Barometric Pressure:	30.14	Meter Y:	0.961
Test Time:	200	Delta Ha:	1.690

Yqa =	0.904

CALIBRATION CHECK
(Post Test) per EMTC Guideline GD-26
04/15/05

Nucor Steel
Crawfordsville

Y qa =	1.039	0.943	0.956	0.979

Average result must be within 5% of Y

Result (%): -1.31%

PASS POST CAL

ID :	79
Y :	0.998
Delta H :	1.89

RUN #	Volume	Delta H	DGM (Inlet)	DGM (Outlet)
1		1.305	101	104
2	Nucor Steel	1.305	99	103
3	04/15/05	1.305	99	103
4	(Post Test) per EMTC Guideline GD-26	1.305	99	102
5		1.305	98	101
6		1.305	98	101
7		1.305	98	99
8		1.305	97	98
9		1.305	97	97
10		1.305	97	96
11		1.305	102	96
12		1.305	100	96
13		1.305	111	98
14		1.305	111	97
15		1.305	111	98
16		1.305	111	98
17		1.305	111	98
18		1.305	111	98
19		1.305	109	99
20		1.305	110	99
21		1.305	111	100
22		1.305	111	100
23		1.305	111	100
24		1.305	111	103
25		1.305	112	104
26	Dry Gas Meter Reading	1.305	111	104
27		1.305	111	104
28	910.000	1.305	111	104
29	897.227	1.305	111	104
30		1.305	111	104

Volume	Avg. Dh		Avg. Meter T(F)
72.773	1.31		103.17

Barometric Pressure:	30.14	Meter Y:	0.998
Test Time:	120	Delta Ha:	1.89

Yqa = 1.039

RUN #	Volume	Delta H	DGM (Inlet)	DGM (Outlet)
1		1.34	99	99
2	Nucor Steel	1.34	97	98
3	04/18/05	1.34	99	99
4	(Post Test) per EMTC Guideline GD-26	1.34	100	99
5		1.34	100	99
6		1.34	100	99
7		1.34	98	96
8		1.34	99	97
9		1.34	100	97
10		1.34	100	97
11		1.34	100	97
12		1.34	99	97
13		1.34	98	97
14		1.34	98	97
15		1.34	98	97
16		1.34	98	97
17		1.34	99	97
18		1.34	101	97
19		1.34	101	98
20		1.34	101	98
21		1.34	102	98
22		1.34	102	98
23		1.34	101	98
24		1.34	102	98
25		1.34	100	98
26		1.34	104	98
27	691.000	1.34	105	97
28	610.250	1.34	109	98
29		1.34	110	98
30		1.34	110	98

Volume	Avg. Dh		Avg. Meter T(F)
80.750	1.34		98.87

Barometric Pressure:	30.14	Meter Y:	0.998
Test Time:	120	Delta Ha:	1.890

Yqa = 0.943

RUN #	Volume	Delta H	DGM (Inlet)	DGM (Outlet)
1		1.32	89	92
2	Nucor Steel	1.32	97	98
3	04/18/05	1.32	99	99
4	Crawfordsville	1.32	100	99
5		1.32	100	99
6		1.32	100	99
7		1.32	98	96
8		1.32	99	97
9		1.32	100	97
10		1.32	100	97
11		1.32	100	97
12		1.32	100	97
13		1.32	99	97
14		1.32	98	97
15		1.32	98	97
16		1.32	98	97
17		1.32	98	97
18		1.32	101	97
19		1.32	101	98
20		1.32	101	98
21		1.32	102	98
22		1.32	102	94
23		1.32	103	95
24		1.32	102	95
25		1.32	100	96
26		1.32	104	98
27	770.441	1.32	105	97
28	700.464	1.32	109	98
29		1.32	110	98
30		1.32	110	98

Volume	Avg. Dh		Avg. Meter T(F)
70.977	1.32		98.87

Barometric Pressure:	30.13	Meter Y:	0.998
Test Time:	120	Delta Ha:	1.880

Yqa = 0.956

GRASEBY NUTECH
EPA Method 5
Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: C:\Documents and Settings\michael dicen\My Documents\[meter box#80cal.XLS]3PTCQCAL
Revised: 8/1/97 Version: 1.01

Model #: mst
Serial #: 90680.00

Date: ——————>
Barometric Pressure: ——————> 30.05 (in. Hg)
Theoretical Critical Vacuum:—> 14.17 (in. Hg)

!!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!!

——— DRY GAS METER READINGS ———									-CRITICAL ORIFICE READINGS-					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	– Ambient Temperature –		
Delta H	Time	Initial	Final	Total	Inlet	Outlet	Inlet	Outlet	Serial#	Coefficient	Vacuum	Initial	Final	Average
(in H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(in Hg)	(deg F)	(deg F)	(deg F)
1.62	5.00	832.500	836.070	3.570	56.0	56.0	57.0	57.0	3	0.533	18.5	58.0	57.0	57.5
1.62	5.00	836.070	839.610	3.540	57.0	57.0	58.0	57.0	3	0.533	18.5	57.0	57.0	57.0
1.62	5.00	839.610	843.186	3.576	58.0	57.0	58.0	57.0	3	0.533	18.5	57.0	57.0	57.0

********** RESULTS **********

— DRY GAS METER —		——— ORIFICE ———			– DRY GAS METER –		——— ORIFICE ———		
VOLUME	VOLUME	VOLUME	VOLUME	VOLUME	CALIBRATION FACTOR Y		CALIBRATION FACTOR Delta H@		
CORRECTED	CORRECTED	CORRECTED	CORRECTED	NOMINAL	Value	Variation	Value	Value	Variation
Vm(std)	Vm(std)	Vcr(std)	Vcr(std)	Vcr	(number)	(number)	(in H2O)	(mm H2O)	(in H2O)
(cu ft)	(liters)	(cu ft)	(liters)	(cu ft)					
3.678	104.2	3.523	99.8	3.439	0.958	-0.004	1.884	47.87	0.002
3.642	103.1	3.525	99.8	3.438	0.968	0.006	1.881	47.77	-0.001
3.677	104.1	3.525	99.8	3.438	0.958	-0.003	1.881	47.77	-0.001
		Average Y ——>			0.961		1.882	47.80	<—— Average dH@

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: _____

Date: 01 / 03 / 2005

GRASEBY NUTECH
EPA Method 5
Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: C:\Documents and Settings\michael dicen\My Documents\[meter box#79cal.XLS]3PTCQCAL
Revised: 8/1/97 Version: 1.01

Model #: mst
Serial #: 90679.00

Date: ---------->
Barometric Pressure: ----------> 30.05 (in. Hg)
Theoretical Critical Vacuum:---> 14.17 (in. Hg)

!!!!!!!!
IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!!

---------- DRY GAS METER READINGS ---------- **-CRITICAL ORIFICE READINGS-**

Delta H (in H2O)	Time (min)		Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Outlet (deg F)	Final Temps. Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature – Initial (deg F)	Final (deg F)	Average (deg F)
1.62		5.00	660.800	664.310	3.510	56.0	55.0	57.0	55.0	3	0.533	18.0	57.0	57.0	57.0
1.62		5.00	664.310	667.970	3.660	57.0	55.0	58.0	56.0	3	0.533	18.0	57.0	57.0	57.0
1.62		5.00	667.970	671.429	3.459	58.0	56.0	60.0	56.0	3	0.533	18.0	57.0	58.0	57.5

********** **RESULTS** **********

— DRY GAS METER — **——— ORIFICE ———** **-- DRY GAS METER –** **——— ORIFICE ———**

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	CALIBRATION FACTOR Y Value (number)	Variation (number)	CALIBRATION FACTOR Delta H@ Value (in H2O)	Value (mm H2O)	Variation (in H2O)	
3.622	102.6	3.525	99.8	3.438	0.973	0.007	1.888	47.96	0.001	
3.771	106.8	3.525	99.8	3.438	0.935	-0.031	1.886	47.91	-0.001	
3.557	100.7	3.523	99.8	3.439	0.990	0.024	1.886	47.91	-0.001	
		Average Y ---->			0.966		1.887	47.93	<---- Average dH@	

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: _____ **Date:** 01 / 03 / 2005

ΔAir Analysis, Inc.

3904 Clarks Creek Road
Plainfield, Indiana 46168
(317) 837-8514
(317) 837-8518 fax

Pitot Tube Calibration

Reference: 40CFR 60, Appendix A, Method 2, Section 2.1

External Tubing Diameter:	**0.95 centimeters**
Base to Opening Plane Distance (Pa):	**1.2 centimeters**
Base to Opening Plane Distance (Pb):	**1.2 centimeters**

	Measured	Allowable
Pa/Dt	1.26cm	1.05Dt ≤ P ≤ 1.50Dt (0.9975cm – 1.42cm)
Pb/Dt	1.26cm	1.05Dt ≤ P ≤ 1.50Dt (0.9975cm – 1.42cm)
Angle α 1	1 deg	α 1 and α 2 ≤ 10.0°
Angle α 2	1 deg	α 1 and α 2 ≤ 10.0°
Angle β 1	0 deg	β 1 and β 2 ≤ 5.0°
Angle β 2	0 deg	β 1 and β 2 ≤ 5.0°
z (cm)	0.0	z is less than 0.32cm (1/8th")
w (cm)	0.0	w is less than 0.08cm (1/32nd")
	If all criteria are met, Pitot Coefficient is 0.84	**Pitot Coefficient: 0.84**

Calibrated By: Marcus Allen **Date Calibrated:** January 3, 2005

Thermocouple Test

Control factor	*Mercury Thermometer F*	*Probe Response*
ICE	41°	39°
AMBIENT	59°	58°
BOILING/ HOT H20	140°	139°

Test performed by: Marcus Allen **Date of test:** January 3, 2005

APPENDIX VII VISIBLE EMISSIONS DATA

CARL KOONTZ ASSOCIATES
SMOKE SCHOOL TRAINING FORM

NAME RONALD STAPERT RUN # 1 SUNGLASSES YES

COMPANY AIR ANALYSIS INC COURSE LOCATION IND-1 IND.

DATE 3-24-05 SKY [illegible] WIND [illegible] DISTANCE & DIRECTION TO STACK

WHITE

																					ERROR
1	0	5	10	(15)	20	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	1	1
2	0	5	10	15	20	(25)	30	(35)	40	45	50	55	60	65	70	7							
3	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	7							
4	0	(5)	10	15	20	(25)	30	35	40	45	50	55	60	65	70	7							
5	(0)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	7							
6	0	(5)	(10)	15	20	25	30	35	40	45	50	55	60	65	70	7							
7	0	(5)	10	15	20	25	30	35	40	45	50	55	60	65	70								
8	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70								
9	0	5	10	15	20	(25)	30	35	40	45	50	55	60	65	70								
10	0	5	10	15	20	25	30	(35)	40	45	50	55	60	65	70								
11	0	5	10	15	20	25	30	35	40	45	(50)	55	60	65	70								
12	0	5	10	15	20	25	30	35	40	45	50	55	(60)	65	70								
13	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70								
14	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70								
15	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	15	2
16	0	5	10	15	(20)	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	16	2
17	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	17	2
18	0	5	10	15	(20)	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	18	2
19	0	5	10	15	20	25	30	(35)	40	45	50	55	60	65	70	75	80	85	90	95	100	19	2
20	0	5	10	15	20	25	30	35	40	45	(50)	55	60	65	70	75	80	85	90	95	100	20	2
21	0	5	10	15	20	25	(30)	35	40	45	50	55	60	65	70	75	80	85	90	95	100	21	2
22	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	22	2
23	(0)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	23	2
24	0	(5)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	24	2
25	0	5	10	(15)	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	25	2

DEVIATION 11 — 2.2

BLACK

26	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	26	2
27	0	5	10	15	20	25	30	(35)	40	45	50	55	60	65	70	75	80	85	90	95	100	27	2
28	0	5	10	15	20	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	28	2
29	0	(5)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	29	2
30	0	5	10	15	(20)	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	30	2
31	0	5	10	15	20	25	(30)	35	40	45	50	55	60	65	70	75	80	85	90	95	100	31	2
32	0	5	10	15	20	25	30	35	40	45	(50)	55	60	65	70	75	80	85	90	95	100	32	2
33	0	5	10	15	20	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	33	2
34	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	34	2
35	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	35	2
36	0	5	10	15	20	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	36	2
37	0	5	10	15	(20)	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	37	2
38	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	38	2
39	0	5	10	(15)	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	39	2
40	0	5	10	15	20	25	30	(35)	40	45	50	55	60	65	70	75	80	85	90	95	100	40	2
41	0	5	10	15	20	25	30	35	40	45	(50)	55	60	65	70	75	80	85	90	95	100	41	2
42	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	42	2
43	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	43	2
44	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	(90)	95	100	44	2
45	0	5	10	15	20	(25)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	45	2
46	0	5	10	(15)	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	46	2
47	0	5	10	15	(20)	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	47	2
48	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	48	2
49	0	5	10	15	(20)	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	49	2
50	0	5	(10)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	50	2

I hereby certify that the above readings are my own. [signature]

DEVIATION 15 — 3.0

CARL KOONTZ ASSOCIATES
of Nashville, Tennessee
This is to acknowledge that
RONALD STAPERT
successfully participated in Visible Emissions training on MAR 24 2005
and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.
Carl Koontz
Instructor

Visible Emissions Observations Form

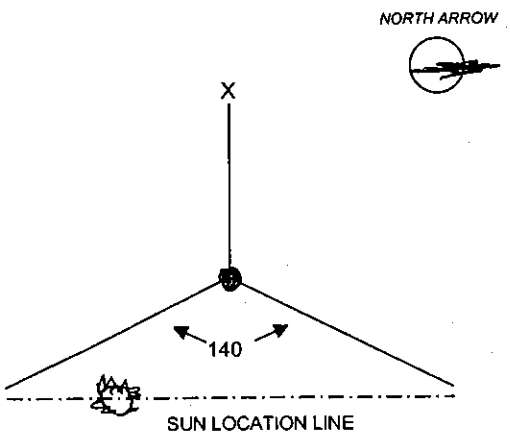
RUN NUMBER 1

SOURCE NAME: NUCOR STEEL
OBSERVATION DATE: 4-18-05
START TIME: 12:47 PM
STOP TIME: 1:47

ADDRESS:
CITY: CRAWFORDSVILLE
STATE: IN
ZIP:
PHONE:
SOURCE ID NUMBER: EAF & AOD
PROCESS EQUIPMENT: STEEL MELT ROOF MONI
OPERATING MODE:
CONTROL EQUIPMENT:
OPERATING MODE:
DESCRIBE EMISSION POINT (Stack Exit Dimensions): [redacted]
ROOF MOUNT VENT
HEIGHT ABOVE GROUND LEVEL: START 160 STOP
HEIGHT RELATIVE TO OBSERVER: START 120 STOP
DISTANCE FROM OBSERVER: START 500' STOP
DIRECTION FROM OBSERVER: START 30° STOP
DESCRIBE EMISSIONS: START CLEAR STOP
EMISSION COLOR: START CLEAR STOP
PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT
WATER DROPLETS PRESENT: (NO) YES
IF WATER DROPLET PLUME: ATTACHED (DETACHED)
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP
DESCRIBE BACKGROUND: START LIGHT BLUE STOP
BACKGROUND COLOR: START LIGHT BLUE STOP
SKY CONDITIONS: START MOSTLY SUNNY STOP
WIND SPEED (MPH): START 5 STOP 10 MPH
WIND DIRECTION: START NW STOP
AMBIENT TEMPERATURE (F): START 70° STOP 74°
WET BULB TEMP.
RH PERCENT

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point
• = Observer's Position
☼ = Sun
= Wind
= Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0
NUMBER OF READINGS ABOVE: 0 WERE 0
RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0
OBSERVER'S NAME (PRINT): RONALD STAPERT
OBSERVER'S SIGNATURE: Ronald Stapert
DATE: 4-18-05
ORGANIZATION: Air Test Professionals, Inc. (ATP)
CERTIFIED BY
DATE: 4-24-05
Carl Koontz Associates
Comments:

MBCT's ROOF MONI

Visible Emissions Observations Form

RUN NUMBER 1

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 12:47

STOP TIME: 1:15

ADDRESS:

CITY: CRAWFORDSVILLE | STATE: IN | ZIP:

PHONE:

SOURCE ID NUMBER: EAF & AOD

PROCESS EQUIPMENT: BAGHOUSE 1 EAST BAG HOUSE

OPERATING MODE:

CONTROL EQUIPMENT: ROOF MONI

OPERATING MODE:

DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MONT. VENT

HEIGHT ABOVE GROUND LEVEL: START 150' ✓ STOP

HEIGHT RELATIVE TO OBSERVER: START 110' ✓ STOP

DISTANCE FROM OBSERVER: START 800 ✓ STOP

DIRECTION FROM OBSERVER: START 35° ✓ STOP

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR ✓ STOP

PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES

IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

BACKGROUND COLOR: START LIGHT BLUE STOP

SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 MPH STOP

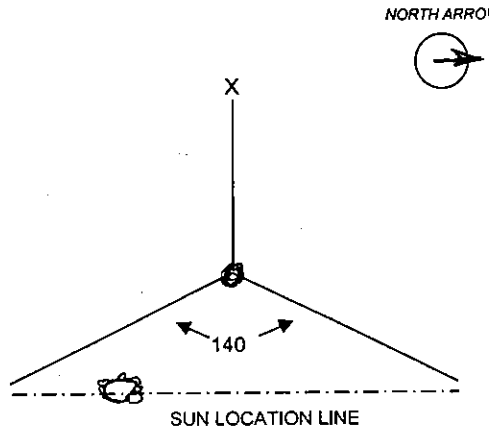
WIND DIRECTION: START NW STOP ✓

AMBIENT TEMPERATURE (F): START 70° STOP 72°

WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

• = Observer's Position = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert DATE: 4-18-05

ORGANIZATION: AIR ANALYSIS
~~Air Test Professionals, Inc.~~ (ATP)

CERTIFIED BY: DATE: 3-24-05
Carl Koontz Associates

Comments:

EAST BAG. H. (1)

Visible Emissions Observations Form

RUN NUMBER: 1

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 12:47

STOP TIME: 2:15

ADDRESS

CITY: CRAWFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER: EAF & AOD

PROCESS EQUIPMENT: WEST BAGHOUSE ROOF MON | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MOUNT, VENT

HEIGHT ABOVE GROUND LEVEL: START 150' STOP | HEIGHT RELATIVE TO OBSERVER: START 110 STOP ✓

DISTANCE FROM OBSERVER: START 800 STOP ✓ | DIRECTION FROM OBSERVER: START 30° STOP ✓

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

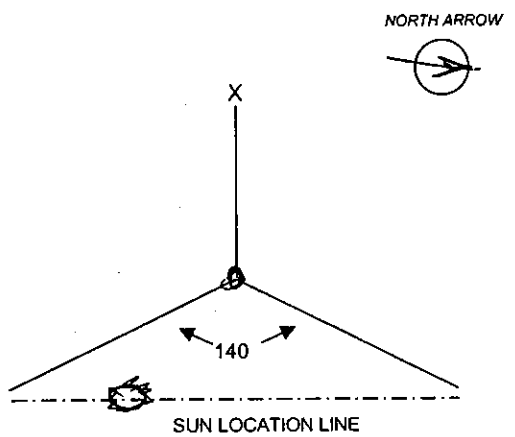
BACKGROUND COLOR: START LIGHT BLUE STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP ✓ | WIND DIRECTION: START NW STOP ✓

AMBIENT TEMPERATURE (F): START 70 STOP 72° | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4 18 05

ORGANIZATION: AIR ANALYSIS
Air Test Professionals, Inc. (ATP)

CERTIFIED BY | DATE: 3-24-05
Carl Koontz Associates

Comments:

WEST BAGH ①

Visible Emissions Observations Form

RUN NUMBER: 1

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 12:47

STOP TIME: 1:15

ADDRESS:

CITY: CRAWFORDSVILLE | STATE: IN | ZIP:

PHONE: | SOURCE ID NUMBER: EAF & AOD

PROCESS EQUIPMENT: BAG HOUSE #2 | OPERATING MODE:

CONTROL EQUIPMENT: | OPERATING MODE:

DESCRIBE EMISSION POINT (Stack Exit Dimensions): 25' X 25' STACK

HEIGHT ABOVE GROUND LEVEL: START 170' STOP | HEIGHT RELATIVE TO OBSERVER: START 130' STOP

DISTANCE FROM OBSERVER: START 1100 STOP ✓ | DIRECTION FROM OBSERVER: START 60° STOP ✓

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES ✓ | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

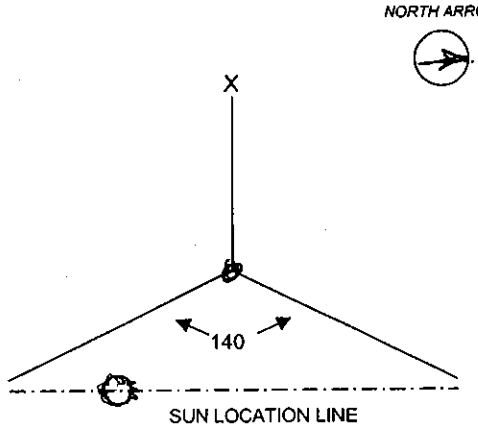
BACKGROUND COLOR: START LIGHT BLUE STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP ✓ | WIND DIRECTION: START NW STOP ✓

AMBIENT TEMPERATURE (F): START 70° STOP 72° | WET BULB TEMP | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind
• = Observer's Position | = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: Air Test Professionals, Inc. (ATP)

CERTIFIED BY: | DATE: 3-24-05

Carl Koontz Associates

Comments:

BAG HOUSE #2

Visible Emissions Observations Form

RUN NUMBER: 1

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4 18-05	START TIME: 2:15 / STOP TIME: 2 45
ADDRESS		
CITY: CRAWFORDVILLE	STATE: IN	ZIP
PHONE	SOURCE ID NUMBER: EAF & AOD	
PROCESS EQUIPMENT: EAST #1 BAG HOUSE ROOF MON.	OPERATING MODE	
CONTROL EQUIPMENT	OPERATING MODE	
DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MOUNT VENT		
HEIGHT ABOVE GROUND LEVEL: START 150 STOP	HEIGHT RELATIVE TO OBSERVER: START 110' STOP ✓	
DISTANCE FROM OBSERVER: START 800' STOP	DIRECTION FROM OBSERVER: START 35° STOP ✓	
DESCRIBE EMISSIONS: START CLEAR STOP ✓		
EMISSION COLOR: START CLEAR STOP	PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT	
WATER DROPLETS PRESENT: (NO) YES	IF WATER DROPLET PLUME: ATTACHED (DETACHED)	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓		
DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓		
BACKGROUND COLOR: START LIGHT BLUE STOP ✓	SKY CONDITIONS: START MOSTLY SUNNY STOP	
WIND SPEED (MPH): START 5 To 10 STOP ✓	WIND DIRECTION: START NW STOP ✓	
AMBIENT TEMPERATURE (F): START 76 STOP	WET BULB TEMP. / R.H. PERCENT	

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
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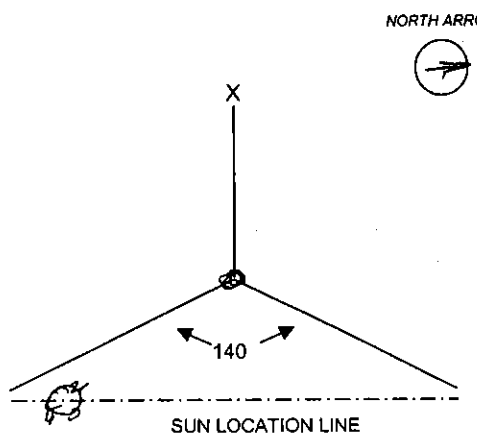
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point; • = Observer's Position; ☼ = Sun; = Wind →; = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert DATE: 4 18-05

ORGANIZATION: AIR ANALYSIS
~~Air Test Professionals, Inc. (ATP)~~

CERTIFIED BY: DATE:
Carl Koontz Associates

Comments:

EAST BAG HOUSE (2R)

Visible Emissions Observations Form

RUN NUMBER 1 & 2

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 2:15

STOP TIME: 2:45

ADDRESS:

CITY: CRAWFORDSVILLE | STATE: IN | ZIP:

PHONE:

SOURCE ID NUMBER: EAF & AOD

PROCESS EQUIPMENT: BAG HOUSE WEST #1 ROOF MON.

OPERATING MODE:

CONTROL EQUIPMENT:

OPERATING MODE:

DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MONT VENT

HEIGHT ABOVE GROUND LEVEL: START 150 STOP

HEIGHT RELATIVE TO OBSERVER: START 110' STOP

DISTANCE FROM OBSERVER: START 800 STOP

DIRECTION FROM OBSERVER: START 300° STOP

DESCRIBE EMISSIONS: START CLEAR ✓ STOP ✓

EMISSION COLOR: START CLEAR STOP ✓

PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES

IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

BACKGROUND COLOR: START LIGHT BLUE STOP ✓

SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP ✓

WIND DIRECTION: START NW STOP ✓

AMBIENT TEMPERATURE (F): START 76 STOP 77°

WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
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26	0	0	0	0	56				
27	0	0	0	0	57				
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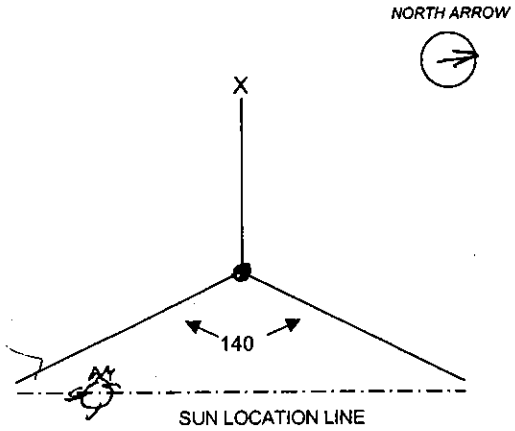
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: AIR ANALYSIS
Air Test Professionals, Inc. (ATP)

CERTIFIED BY | DATE
Carl Koontz Associates

Comments:

WEST BAG H. #1 (2) R.

Visible Emissions Observations Form

RUN NUMBER: 1

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4 18 - 05	START TIME: 2:15	STOP TIME: 2:45

ADDRESS

CITY: CRAWFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER: EAF & AOD

PROCESS EQUIPMENT: BAG HOUSE #2 | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): 25'X25' STACK

HEIGHT ABOVE GROUND LEVEL: START 170' STOP ✓ | HEIGHT RELATIVE TO OBSERVER: START 130' STOP ✓

DISTANCE FROM OBSERVER: START 1100' STOP ✓ | DIRECTION FROM OBSERVER: START 60° STOP ✓

DESCRIBE EMISSIONS: START CLEAR ✓ STOP

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

BACKGROUND COLOR: START LIGHT BLUE STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP ✓ | WIND DIRECTION: START NW STOP

AMBIENT TEMPERATURE (F): START 76 STOP 77 | WET BULB TEMP | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
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26	0	0	0	0	56				
27	0	0	0	0	57				
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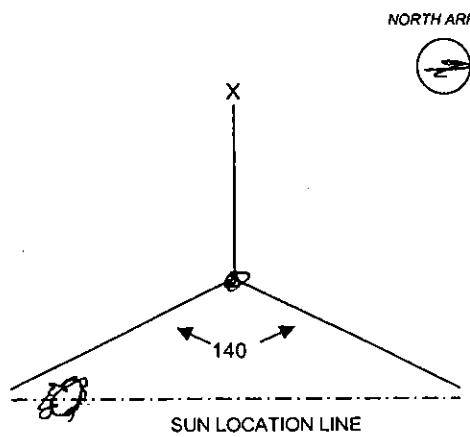
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind
• = Observer's Position | = Plume
☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4 18 - 05

ORGANIZATION: Air Test Professionals, Inc. (ATP)

CERTIFIED BY | DATE: 3-24-05

Carl Koontz Associates

Comments:

BAG HOUSE #2 (2)

Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4-18-05	START TIME: 2:45 / STOP TIME: 3:15

ADDRESS

CITY: CARMFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER: EAF EAOD

PROCESS EQUIPMENT: WEST BAG HOUSE ROOF MON | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MOUNT VENT

HEIGHT ABOVE GROUND LEVEL: START ~~150~~ 0' STOP ✓ | HEIGHT RELATIVE TO OBSERVER: START ~~150~~ 0' STOP

DISTANCE FROM OBSERVER: START 800 STOP ✓ | DIRECTION FROM OBSERVER: START 30° STOP

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP

DESCRIBE BACKGROUND: START 20' ALONG TOP STOP

BACKGROUND COLOR: START LIGHT BLUE STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 0-5 STOP ✓ | WIND DIRECTION: START NW STOP

AMBIENT TEMPERATURE (F): START 79 STOP | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
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26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 3-18-05

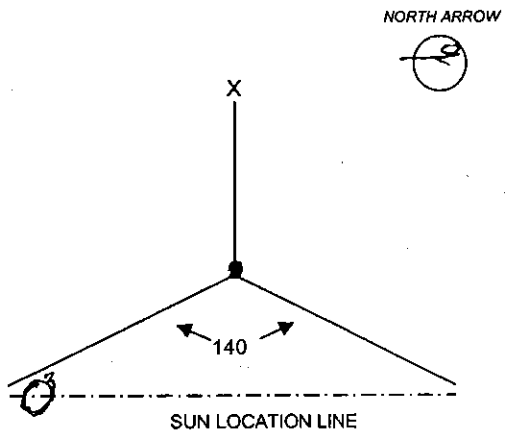
ORGANIZATION: AIRANALYSIS ~~Air Test Professionals, Inc.~~ (ATP)

CERTIFIED BY | DATE: 3-24-05

Carl Koontz Associates

Comments:

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

BAG HOUSE #1 W

Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4 18 05

START TIME: 245

STOP TIME: 315

ADDRESS

CITY: CRAWFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAST BAGHOUSE I | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MOUNT VENT

HEIGHT ABOVE GROUND LEVEL: START 150 STOP | HEIGHT RELATIVE TO OBSERVER: START 110 STOP

DISTANCE FROM OBSERVER: START 800 STOP | DIRECTION FROM OBSERVER: START 35° STOP ✓

DESCRIBE EMISSIONS: CLEAR

START ~~ROOF MOUNT VENT~~ STOP ✓

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES ✓ | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

BACKGROUND COLOR: START LIGHT BLUE STOP | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP | WIND DIRECTION: START NW STOP

AMBIENT TEMPERATURE (F): START 79 STOP | WET BULB TEMP | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
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27	0	0	0	0	57				
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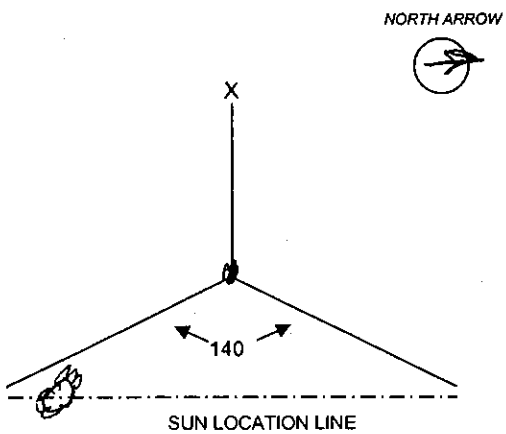
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: AIR ANALSIS

~~Air Test Professionals, Inc.~~ (ATP)

CERTIFIED BY | DATE: 3-24-05

Carl Koontz Associates

Comments:

BAG HOUSE 1 E

Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 2445

STOP TIME: 3 15

ADDRESS

CITY: CARMFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER: BAR E A00

PROCESS EQUIPMENT: BAG HOUSE #2 | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): 25' X 25' STACK

HEIGHT ABOVE GROUND LEVEL: START 120' STOP — | HEIGHT RELATIVE TO OBSERVER: START 130' STOP —

DISTANCE FROM OBSERVER: START 1100 STOP ✓ | DIRECTION FROM OBSERVER: START 330° STOP —

DESCRIBE EMISSIONS: START CLEAR ✓ STOP ✓

EMISSION COLOR: START CLEAR STOP ✓ | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: NO YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START STOP

DESCRIBE BACKGROUND: START LIGHT BLUE STOP

BACKGROUND COLOR: START LIGHT BLUE STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP

WIND SPEED (MPH): START 5-10 STOP ✓ | WIND DIRECTION: START NW STOP

AMBIENT TEMPERATURE (F): START 79 STOP ✓ | WET BULB TEMP | RH PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
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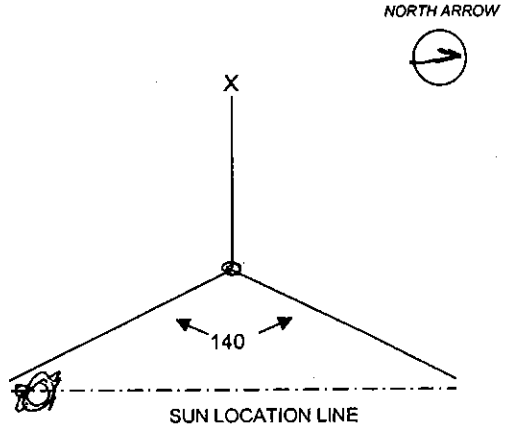
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: Air Test Professionals, Inc. (ATP)

CERTIFIED BY | DATE: 4-18-05

Carl Koontz Associates

Comments:

BAG HOUSE #2

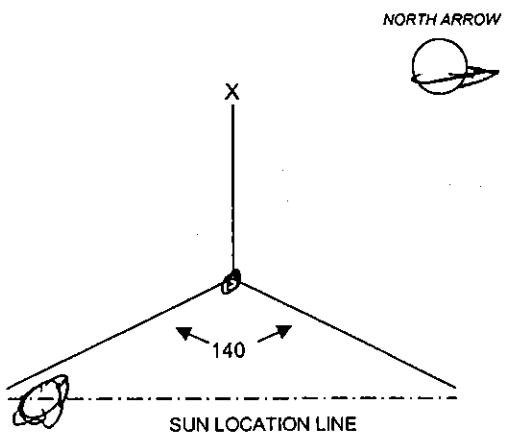
Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4-18-05	START TIME: 3:45 / STOP TIME: 4:45
ADDRESS		
CITY: CRAWFORDSVILLE / STATE: IN / ZIP		
PHONE	SOURCE ID NUMBER: BAP & AOD	
PROCESS EQUIPMENT: ROOFMON BAGHOUSE WEST	OPERATING MODE	
CONTROL EQUIPMENT	OPERATING MODE	
DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOF MOUNT VENT		
HEIGHT ABOVE GROUND LEVEL: START 150' STOP ✓	HEIGHT RELATIVE TO OBSERVER: START 110' STOP ✓	
DISTANCE FROM OBSERVER: START 800' STOP ✓	DIRECTION FROM OBSERVER: START 30° STOP ✓	
DESCRIBE EMISSIONS: START CLEAR STOP ✓		
EMISSION COLOR: START CLEAR STOP ✓	PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT	
WATER DROPLETS PRESENT: (NO) YES	IF WATER DROPLET PLUME: ATTACHED (DETACHED)	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP ✓		
DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓		
BACKGROUND COLOR: START LIGHT BLUE STOP ✓	SKY CONDITIONS: START MOSTLY SUNNY STOP	
WIND SPEED (MPH): START 5-10 STOP ✓	WIND DIRECTION: START NW STOP ✓	
AMBIENT TEMPERATURE (F): START 80 STOP ✓	WET BULB TEMP / R.H. PERCENT	

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; • = Observer's Position; ☼ = Sun; = Wind →; = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: AIR ANALYSIS
~~Air Test Professionals~~, Inc. (ATP)

CERTIFIED BY | DATE: 3-24-05
Carl Koontz Associates

Comments:

Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 4-18-05

START TIME: 345

STOP TIME: 445

ADDRESS

CITY: CRAWFORDSVILLE | STATE: IN | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: BAG HOUSE #2 | OPERATING MODE

CONTROL EQUIPMENT: 25' ~~X 25' STACK~~ | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): 25'X25' STACK

HEIGHT ABOVE GROUND LEVEL: START 170' STOP ✓ | HEIGHT RELATIVE TO OBSERVER: START 130 STOP ✓

DISTANCE FROM OBSERVER: START 1100 STOP ✓ | DIRECTION FROM OBSERVER: START 60° STOP ✓

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR STOP | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED (DETACHED)

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓

DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓

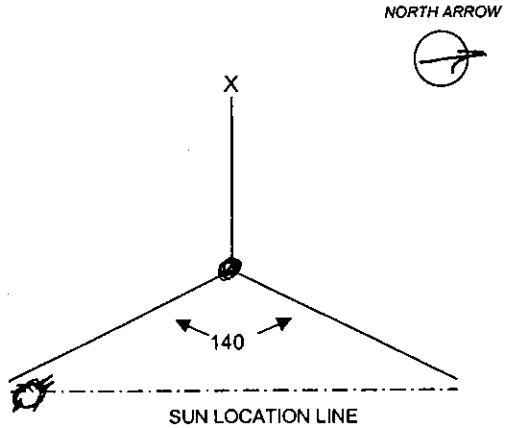
BACKGROUND COLOR: START Light Blue STOP ✓ | SKY CONDITIONS: START MOSTLY SUNNY STOP —

WIND SPEED (MPH): START 5-10 STOP ✓ | WIND DIRECTION: START NW STOP

AMBIENT TEMPERATURE (F): START 80° STOP ✓ | WET BULB TEMP. | R.H. PERCENT

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

• = Observer's Position | = Plume

☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert | DATE: 4-18-05

ORGANIZATION: Air Test Professionals, Inc. (ATP)

CERTIFIED BY: Carl Koontz Associates | DATE: 3-24-05

Comments:

BAG HOUSE #2

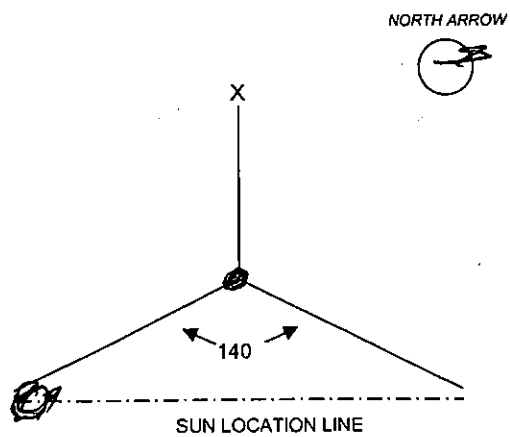
Visible Emissions Observations Form

RUN NUMBER

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4 18. 05	START TIME: 345 / STOP TIME: 445
ADDRESS		
CITY: CARMFORDSVILLE / STATE: IN / ZIP		
PHONE / SOURCE ID NUMBER		
PROCESS EQUIPMENT: EAST BAGHOUSE / OPERATING MODE		
CONTROL EQUIPMENT / OPERATING MODE		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): ROOFMOUNT VENT		
HEIGHT ABOVE GROUND LEVEL: START 150' STOP / HEIGHT RELATIVE TO OBSERVER: START 110' STOP		
DISTANCE FROM OBSERVER: START 800' STOP / DIRECTION FROM OBSERVER: START 35° STOP		
DESCRIBE EMISSIONS: START CLEAR STOP		
EMISSION COLOR: START CLEAR STOP / PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT		
WATER DROPLETS PRESENT: NO YES / IF WATER DROPLET PLUME: ATTACHED DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' ALONG TOP STOP		
DESCRIBE BACKGROUND: START LIGHT BLUE STOP		
BACKGROUND COLOR: START LIGHT BLUE STOP / SKY CONDITIONS: START MOSTLY SUNNY STOP		
WIND SPEED (MPH): START 5-10 STOP / WIND DIRECTION: START STOP		
AMBIENT TEMPERATURE (F): START 80° STOP 80° / WET BULB TEMP. / R.H. PERCENT		

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; • = Observer's Position; ☼ = Sun; = Wind; = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Ronald Stapert

OBSERVER'S SIGNATURE: Ronald Stapert DATE: 4-18-05

ORGANIZATION: AIR ANALYSIS ~~Air Test Professionals, Inc. (ATP)~~

CERTIFIED BY: DATE: 3-24-05

Carl Koontz Associates

Comments:

RUN 2

NUCOR STEEL 4-19-05 2:45 - 3:45

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
BAG HOUSE #2	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT
START 25'x25' STACK STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 170' STOP ✓	START 130' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 1600 STOP ✓	START 60° STOP ✓

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' STOP ✓

DESCRIBE BACKGROUND
START BLUE STOP ✓

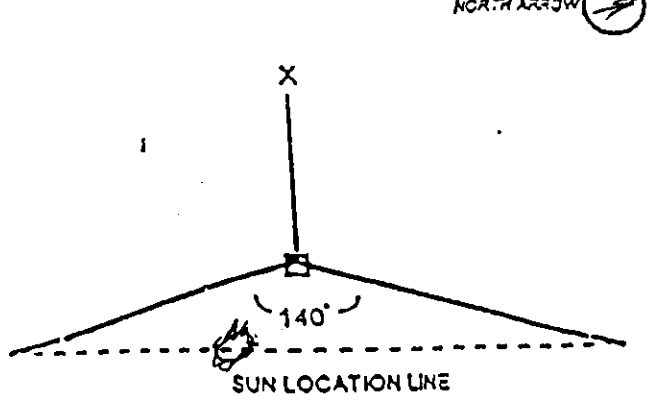
BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 10-15 STOP 10-15	START SE STOP

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP 80°	—	—

1	0	0	0	0	31
2	0	0	0	0	32
3	0	0	0	0	33
4	0	0	0	0	34
5	0	0	0	0	35
6	0	0	0	0	36
7	0	0	0	0	37
8	0	0	0	0	38
9	0	0	0	0	39
10	0	0	0	0	40
11	0	0	0	0	41
12	0	0	0	0	42
13	0	0	0	0	43
14	0	0	0	0	44
15	0	0	0	0	45
16	0	0	0	0	46
17	0	0	0	0	47
18	0	0	0	0	48
19	0	0	0	0	49
20	0	0	0	0	50
21	0	0	0	0	51
22	0	0	0	0	52
23	0	0	0	0	53
24	0	0	0	0	54
25	0	0	0	0	55
26	0	0	0	0	56
27	0	0	0	0	57
28	0	0	0	0	58
29	0	0	0	0	59
30	0	0	0	0	60

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert DATE 4/19/05

ORGANIZATION AIR TEST PROFESSIONAL INC

CERTIFIED BY CARL KOONTZ DATE 3-24-05

Comments:

BAG H #2

RUN 2

NUCOR STEEL

4-19-05 2:45-3:45

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
#1 WEST BAG HOUSE ROOF MONI.	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT: ROOF MOUNT VENT

START STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150' STOP ✓	START 110' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800' STOP ✓	START 30° STOP ✓

DESCRIBE EMISSIONS

START CLEAR ✓ STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND

START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

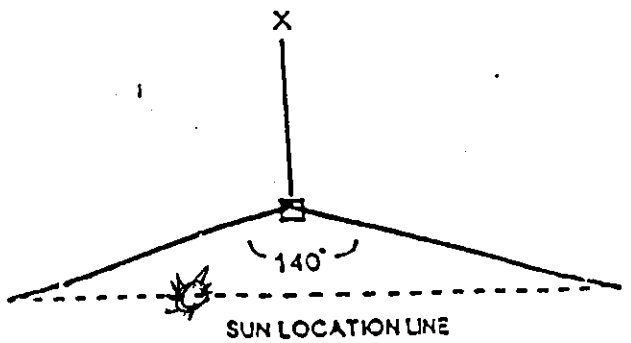
WIND SPEED	WIND DIRECTION
START 10-15 STOP ✓	START SE STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80 STOP ✓	—	—

1	0	0	0	0	31							
2	0	0	0	0	32							
3	0	0	0	0	33							
4	0	0	0	0	34							
5	0	0	0	0	35							
6	0	0	0	0	36							
7	0	0	0	0	37							
8	0	0	0	0	38							
9	0	0	0	0	39							
10	0	0	0	0	40							
11	0	0	0	0	41							
12	0	0	0	0	42							
13	0	0	0	0	43							
14	0	0	0	0	44							
15	0	0	0	0	45							
16	0	0	0	0	46							
17	0	0	0	0	47							
18	0	0	0	0	48							
19	0	0	0	0	49							
20	0	0	0	0	50							
21	0	0	0	0	51							
22	0	0	0	0	52							
23	0	0	0	0	53							
24	0	0	0	0	54							
25	0	0	0	0	55							
26	0	0	0	0	56							
27	0	0	0	0	57							
28	0	0	0	0	58							
29	0	0	0	0	59							
30	0	0	0	0	60							

SOURCE LAYOUT SKETCH

NORTH ARROW



AVERAGE OPACITY FOR HIGHEST PERIOD 0	NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS

MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAFERT

OBSERVER'S SIGNATURE	DATE
Ronald Stafert	4/19/05

ORGANIZATION: AIR ANALYSIS INC

CERTIFIED BY	DATE
CARL KOONTZ	3 24 06

Comments:

BAG H. #1 WEST

RUN 2

NUCOR STEEL 4-19-05 3:45 3:45

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
BAGH #1 EAST BAG HOUSE ROOF MON	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT · ROOF MOUNT VENT ·

START STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150' STOP ✓	START 116' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800 STOP ✓	START 35° STOP ✓

DESCRIBE EMISSIONS

START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
(NO) ☐ YES ☐	ATTACHED ☐ (DETACHED) ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

START 20' ALONG T STOP —

DESCRIBE BACKGROUND

START BLUE ✓ STOP ✓

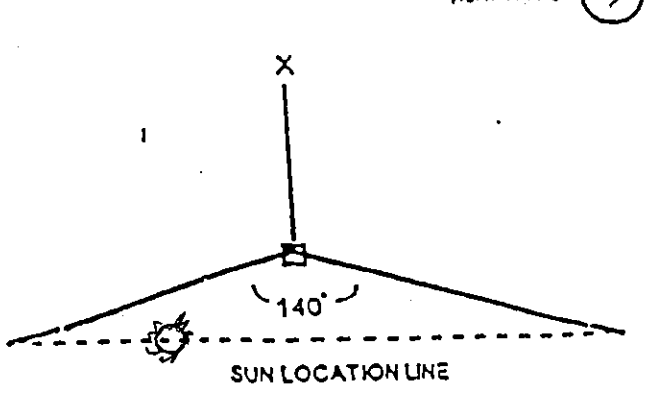
BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP ✓

WIND SPEED	WIND DIRECTION
START 10 - 15 STOP ✓	START S/E STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP 80°	—	—

1	0	0	0	0	31							
2	0	0	0	0	32							
3	0	0	0	0	33							
4	0	0	0	0	34							
5	0	0	0	0	35							
6	0	0	0	0	36							
7	0	0	0	0	37							
8	0	0	0	0	38							
9	0	0	0	0	39							
10	0	0	0	0	40							
11	0	0	0	0	41							
12	0	0	0	0	42							
13	0	0	0	0	43							
14	0	0	0	0	44							
15	0	0	0	0	45							
16	0	0	0	0	46							
17	0	0	0	0	47							
18	0	0	0	0	48							
19	0	0	0	0	49							
20	0	0	0	0	50							
21	0	0	0	0	51							
22	0	0	0	0	52							
23	0	0	0	0	53							
24	0	0	0	0	54							
25	0	0	0	0	55							
26	0	0	0	0	56							
27	0	0	0	0	57							
28	0	0	0	0	58							
29	0	0	0	0	59							
30	0	0	0	0	60							

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD 0	NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS

MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE	DATE
Ronald Stapert	4/19/05

ORGANIZATION AIR ANALYSIS INC

CERTIFIED BY	DATE
CARL KOONTZ	3-24-05

Comments:

BAG H. #1 EAST

NUCOR STEEL

4-19-05

(1,45 – 2,45) RUN 2
(12,45 – 1,15)
~~10,50 – 11,50~~

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	BAR & ADD

PROCESS EQUIPMENT	OPERATING MODE
EAST BAGHOUSE ROOF MON	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT: ROOF MONNT VENT
START ✓ STOP ✓

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150' STOP ✓	START 110' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800' STOP ✓	START 35° STOP ✓

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
(NO) ☐ YES ☐	ATTACHED ☐ (DETACHED) ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' ALONG TOP ✓ STOP ✓

DESCRIBE BACKGROUND
START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY ✓ STOP ✓

WIND SPEED	WIND DIRECTION
START 10-15 STOP ✓	START SE STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP 80°	—	—

1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
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28	0	0	0	0	58	0	0	0	0
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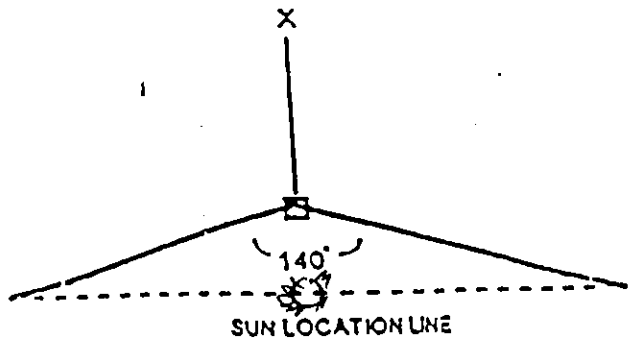
SOURCE LAYOUT SKETCH

NORTH ARROW



AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT)
RONALD STAPPERT

OBSERVER'S SIGNATURE Ronald Stappert DATE 4/19/0

ORGANIZATION AIR ANALYSIS INC

CERTIFIED BY CARL KOONTZ DATE 3-24-0

Comments:

#1
EAST BAGHOUSE

NUCOR STEEL 4-19-05

1:45 2:15
12:45 1:15
10:20 - 11:20

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	EAFE AOD

PROCESS EQUIPMENT	OPERATING MODE
WEST BAG HOUSE ROOFMON	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT: ROOF MOUNT VENT

START STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150' STOP ✓	START 110' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800' STOP ✓	START 30 STOP ✓

DESCRIBE EMISSIONS

START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

START 20' ALONG TOP ✓ STOP ✓

DESCRIBE BACKGROUND

START BLUE STOP ✓

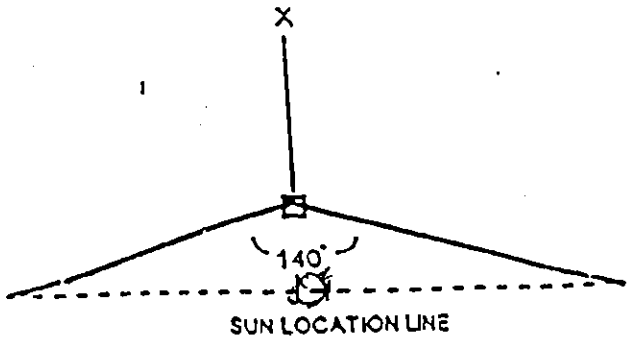
BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 10-15 STOP ✓	START SE STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP 80°	—	—

SOURCE LAYOUT SKETCH

NORTH ARROW



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6	0	0	0	0	36	0	0	0	0
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25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS

MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPART

OBSERVER'S SIGNATURE Ronald Stapart DATE 4/19/05

ORGANIZATION AIR ANALYSIS

CERTIFIED BY CARL KOONTZ DATE 3-24-05

Comments:

WEST BAG H, #1

NUCOR STEEL

4-19-05

(1,45 - 2,15) RUN 2

(12:45 - 1:15)

~~10:30 11:20~~

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	EAF & AOD

PROCESS EQUIPMENT	OPERATING MODE
BAG HOUSE #2	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT
START 25' X 25' STACK STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 170' STOP	START 130' STOP

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 1160 STOP	START 60° STOP

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' STOP ✓

DESCRIBE BACKGROUND
START BLUE STOP ✓

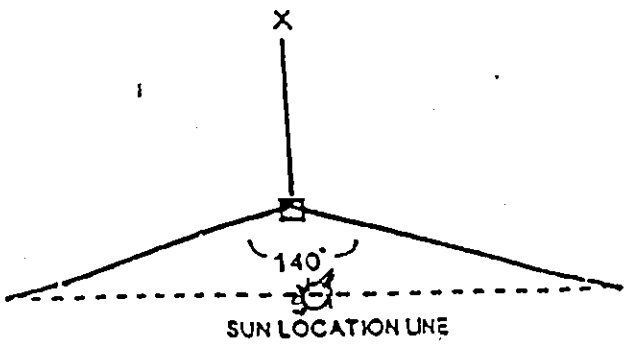
BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 10-15 STOP ✓	START SE STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP ✓	—	—

SOURCE LAYOUT SKETCH

NORTH ARROW



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28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	
30	0	0	0	0	60	0	0	0	

AVERAGE OPACITY FOR HIGHEST PERIOD 0	NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE	DATE
Ronald Stupert	4/19/05

ORGANIZATION AIR TEST PROFESSIONAL INC

CERTIFIED BY	DATE
CARL KOOTZ	3-24-05

Comments:

BAG-Ho #1

IKON 2

9:20-9:50

NUCOR STEEL

4-19-05 8:20 - 8:50

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
BAG HOUSE #2	BAF & BOP

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT
START 25'X25' STOP STACK

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 170' STOP	START 130' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 100 STOP ✓	START 55° STOP ✓

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' UP STOP ✓

DESCRIBE BACKGROUND
START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP —

WIND SPEED	WIND DIRECTION
START 5 STOP ✓	START S STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 65° STOP 68°	—	—

1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
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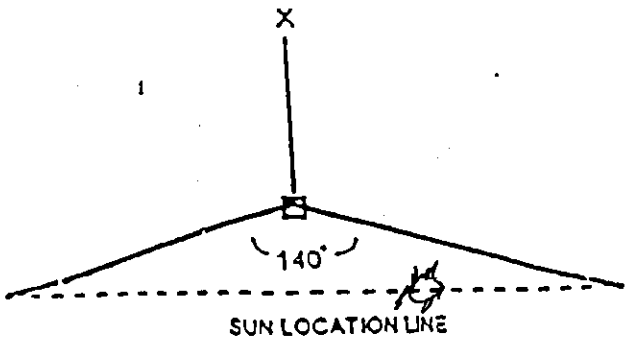
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH

NORTH ARROW ↑



AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert DATE 4/19/1

ORGANIZATION AIR TEST PROFESSIONALS INC

CERTIFIED BY CARL IKOWITZ DATE 3-24-0

Comments:

BAG H. #2

NUCOR STEEL

4-19-05

(9:20 - 9:50) RUN 2

(8:20 8:50)

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	BAF & AOD

PROCESS EQUIPMENT	OPERATING MODE

CONTROL EQUIPMENT	OPERATING MODE
EAST BAG HOUSE MON.	

DESCRIBE EMISSION POINT: ROOF MONT VENT.

START STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150' STOP ✓	START 110' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800 STOP ✓	START 35 STOP ✓

DESCRIBE EMISSIONS

START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

START 20' ALONG TOP OF VENT ✓ STOP

DESCRIBE BACKGROUND

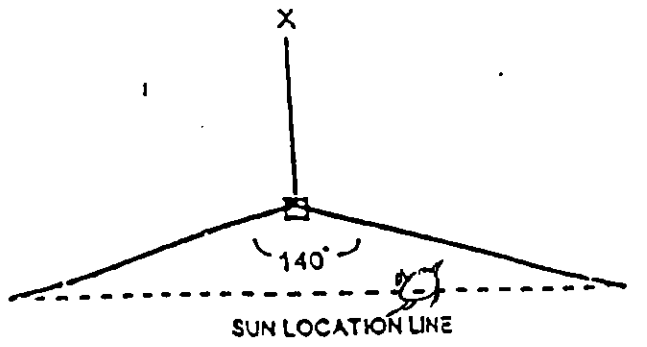
START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 5 STOP ✓	START S STOP

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 65° STOP 68°	—	

SOURCE LAYOUT SKETCH



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2	0	0	0	0	32	0	0	0	0	
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26	0	0	0	0	56	0	0	0	0	
27	0	0	0	0	57	0	0	0	0	
28	0	0	0	0	58	0	0	0	0	
29	0	0	0	0	59	0	0	0	0	
30	0	0	0	0	60	0	0	0	0	

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS

MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert DATE 4/19/1

ORGANIZATION AIR ANALYSIS

CERTIFIED BY CARL KOONTZ DATE 3-24-05

Comments:

BAG H. #1 EAST

NUCOR STEEL

4-19-05

RUN 2

8:20 - 8:50

9:20 - 9:50

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	EAF & AOD

PROCESS EQUIPMENT	OPERATING MODE
WEST BAG HOUSE ROOF MON	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT
START ROOF MONT VENT STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 150 STOP ✓	START 110' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 800 STOP ✓	START 30° STOP ✓

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' ALONG TO STOP

DESCRIBE BACKGROUND
START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 5 STOP ✓	START S STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 65° STOP 68°	—	—

1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
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13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
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27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
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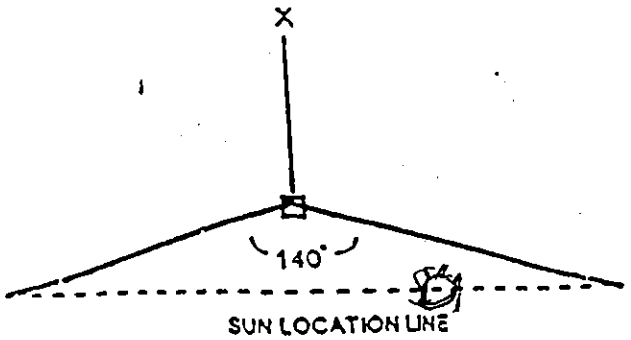
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH

NORTH ARROW



AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT)
RONALD STAPERT.

OBSERVER'S SIGNATURE
Ronald Stapert

DATE 4 19 k

ORGANIZATION
AIR ANALYSIS

CERTIFIED BY
CARL KOONTZ

DATE 3-24 0

Comments:

BAG #1
WEST

RUN 2

NUCOR STEEL 4-19-05 8:20 - 9:20

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER
	BAF & MOP

PROCESS EQUIPMENT	OPERATING MODE
STEEL MELT ROOF MON.	

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT: ROOF MOUNT VENT.

START STOP

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 160' STOP ✓	START 120' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 500' STOP ✓	START 30 STOP ✓

DESCRIBE EMISSIONS

START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ☐
START CLEAR STOP ✓	FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

START 20' ALONG TOP STOP ✓

DESCRIBE BACKGROUND

START BLUE STOP ✓

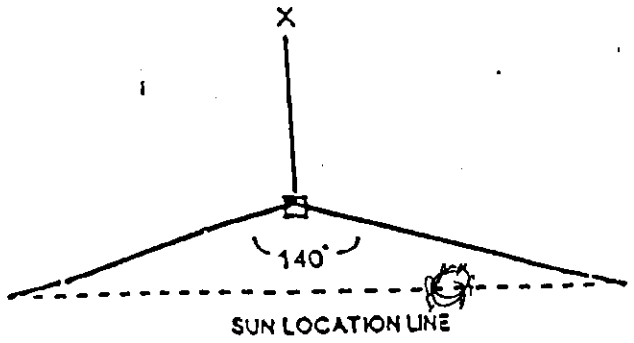
BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP

WIND SPEED	WIND DIRECTION
START 5 STOP ✓	START S STOP

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 65° STOP 68°		

SOURCE LAYOUT SKETCH

NORTH ARROW ➔



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2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert DATE 4/19/

ORGANIZATION AIR TEST PROFESSIONALS INC.

CERTIFIED BY CARL KOONTZ DATE 3-24-0

Comments:

MELT HOUSE

JUN 02 05 03:52p

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 04-22-05	**START TIME** 0900	**STOP TIME** 1000

ADDRESS

CITY Crawfordsville **STATE** IN **ZIP**

PHONE **SOURCE ID NUMBER**

PROCESS EQUIPMENT (WEST) EAF's & AOD **OPERATING MODE**

CONTROL EQUIPMENT (WEST) BBFF BAGHOUSE #1 **OPERATING MODE**

DESCRIBE EMISSION POINT
START Roof Monitor EXIT STOP Roof Monitor EXIT

HEIGHT ABOVE GROUND LEVEL
START 120' STOP 120'

HEIGHT RELATIVE TO OBSERVER
START ~~120'~~ STOP ~~120'~~

DISTANCE FROM OBSERVER
START 550' STOP 550'

DIRECTION FROM OBSERVER
START W STOP W

DESCRIBE EMISSIONS
START N/A STOP N/A

EMISSION COLOR
START N/A STOP N/A

PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT
NO ☒ YES ☐

IF WATER DROPLET PLUME:
ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START Roof Monitor EXIT STOP R.M. EXIT

DESCRIBE BACKGROUND
START Sky STOP Sky

BACKGROUND COLOR
START Gray STOP Gray

SKY CONDITIONS
START Overcast STOP Overcast

WIND SPEED
START 0-5 STOP 0-5

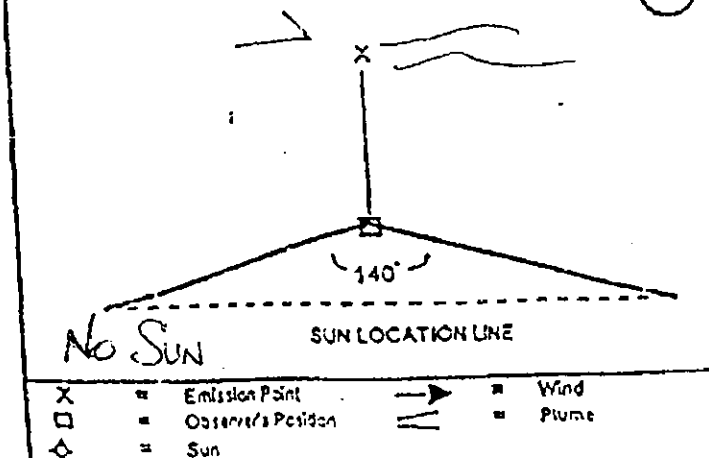
WIND DIRECTION
START N STOP N

AMBIENT TEMPERATURE
START 55° STOP 57°

WET BULB TEMP. **R.H. PERCENT**

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; ☐ = Observer's Position; ◇ = Sun; → = Wind; = = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Carlos Brown

OBSERVER'S SIGNATURE **DATE** 04/22/05

ORGANIZATION ATP

CERTIFIED BY: Carl Koontz **DATE**

Comments:

p. 3

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 04-22-05 | **START TIME:** 1030 | **STOP TIME:** 1200

ADDRESS:

CITY: Crawfordsville | **STATE:** | **ZIP:**

PHONE: | **SOURCE ID NUMBER:**

PROCESS EQUIPMENT: EAF'S & AOD | **OPERATING MODE:**

CONTROL EQUIPMENT: (WEST) BOFF. BAGHOUSE # 1 | **OPERATING MODE:** Normal

DESCRIBE EMISSION POINT
START Roof Monitor STOP Roof Monitor

HEIGHT ABOVE GROUND LEVEL: START 120' STOP 120' | **HEIGHT RELATIVE TO OBSERVER:** START 120' STOP 120'

DISTANCE FROM OBSERVER: START 550' STOP 550' | **DIRECTION FROM OBSERVER:** START W STOP W

DESCRIBE EMISSIONS
START N/A STOP N/A

EMISSION COLOR: START N/A STOP N/A | **PLUME TYPE:** CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT: NO X YES ☐ | **IF WATER DROPLET PLUME:** ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START R.M. EXIT STOP RM. EXIT

DESCRIBE BACKGROUND
START SKY STOP SKY

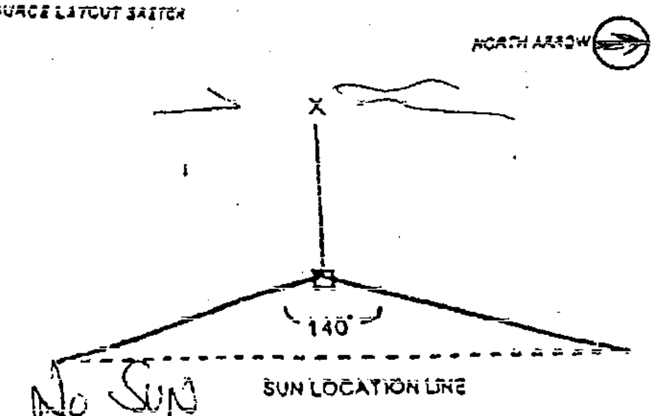
BACKGROUND COLOR: START Gray STOP Gray | **SKY CONDITIONS:** START Overcast STOP Overcast

WIND SPEED: START 0-5 STOP 0-5 | **WIND DIRECTION:** START N STOP N

AMBIENT TEMPERATURE: START STOP | **WET BULB TEMP.** | **R.H. PERCENT**

min \ sec	0	15	30	45	min \ sec	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point
☐ = Observer's Position
✧ = Sun
→ = Wind
⊂ = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Carlos Brown

OBSERVER'S SIGNATURE: [signature] | **DATE:** 04-22-05

ORGANIZATION: ATP

CERTIFIED BY: Carl Koontz | **DATE:**

Comments:

Visible Emissions Observations Form

RUN NUMBER: 3

SOURCE NAME	Nucor Steel
ADDRESS	
CITY	Crawfordsville
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & AOD
OPERATING MODE	
CONTROL EQUIPMENT	(WEST) PPF Baghouse #1
OPERATING MODE	
DESCRIBE EMISSION POINT START	R. Monitor
DESCRIBE EMISSION POINT STOP	R. Monitor
HEIGHT ABOVE GROUND LEVEL START	120'
HEIGHT ABOVE GROUND LEVEL STOP	120'
HEIGHT RELATIVE TO OBSERVER START	120'
HEIGHT RELATIVE TO OBSERVER STOP	120'
DISTANCE FROM OBSERVER START	550'
DISTANCE FROM OBSERVER STOP	550'
DIRECTION FROM OBSERVER START	W
DIRECTION FROM OBSERVER STOP	W
DESCRIBE EMISSIONS START	N/A
DESCRIBE EMISSIONS STOP	N/A
EMISSION COLOR START	N/A
EMISSION COLOR STOP	N/A
PLUME TYPE	CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	NO ☒ YES ☐
IF WATER DROPLET PLUME:	ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	S of Monitor EXIT
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	R.M. EXIT
DESCRIBE BACKGROUND START	Sky
DESCRIBE BACKGROUND STOP	Sky
BACKGROUND COLOR START	Grey
BACKGROUND COLOR STOP	Grey
SKY CONDITIONS START	Overcast
SKY CONDITIONS STOP	Overcast
WIND SPEED START	0-5
WIND SPEED STOP	0-5
WIND DIRECTION START	N
WIND DIRECTION STOP	N
AMBIENT TEMPERATURE START	
AMBIENT TEMPERATURE STOP	
WET BULB TEMP.	
R.H. PERCENT	

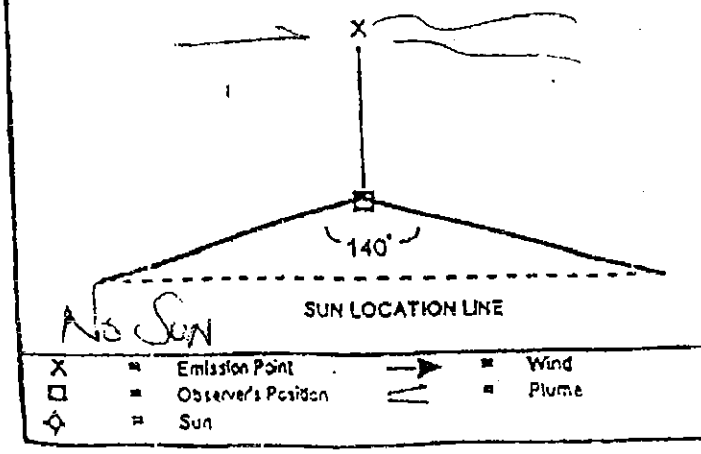
OBSERVATION DATE: 04-22-05

START TIME: 1230

STOP TIME: 1300

sec / min	0	15	30	45	min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS MINIMUM: MAXIMUM:

OBSERVER'S NAME (PRINT): Marcus Brown

OBSERVER'S SIGNATURE:

DATE: 04/22/05

ORGANIZATION: ATP

CERTIFIED BY: Chris Koontz

DATE:

Comments:

Visible Emissions Observations Form

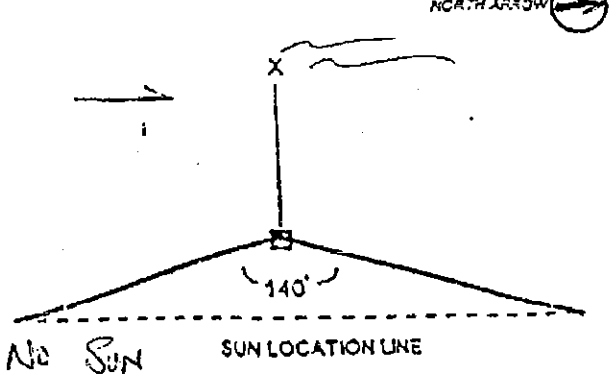
RUN NUMBER: 3

SOURCE NAME	Nucor Steel
ADDRESS	
CITY	Connersville
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF & Aod
OPERATING MODE	
CONTROL EQUIPMENT	PPPF Baghouse #1 (EAST)
OPERATING MODE	Normal
DESCRIBE EMISSION POINT START	Roof Monitors
DESCRIBE EMISSION POINT STOP	Roof Monitors
HEIGHT ABOVE GROUND LEVEL START	120'
HEIGHT ABOVE GROUND LEVEL STOP	120'
HEIGHT RELATIVE TO OBSERVER START	120'
HEIGHT RELATIVE TO OBSERVER STOP	120'
DISTANCE FROM OBSERVER START	500'
DISTANCE FROM OBSERVER STOP	520'
DIRECTION FROM OBSERVER START	W
DIRECTION FROM OBSERVER STOP	W
DESCRIBE EMISSIONS START	N/A
DESCRIBE EMISSIONS STOP	N/A
EMISSION COLOR START	N/A
EMISSION COLOR STOP	N/A
PLUME TYPE	CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	NO ☒ YES ☐
IF WATER DROPLET PLUME:	ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	Monitor Exits
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	Monitor Exits
DESCRIBE BACKGROUND START	Sky
DESCRIBE BACKGROUND STOP	Sky
BACKGROUND COLOR START	Gray
BACKGROUND COLOR STOP	Gray
SKY CONDITIONS START	Overcast
SKY CONDITIONS STOP	Overcast
WIND SPEED START	0-5
WIND SPEED STOP	0-5
WIND DIRECTION START	N
WIND DIRECTION STOP	N
AMBIENT TEMPERATURE START	55°
AMBIENT TEMPERATURE STOP	57°
WET BULB TEMP.	
R.H. PERCENT	

OBSERVATION DATE: 04-22-05 START TIME: 0900 STOP TIME: 1000

min \ sec	0	15	30	45	min \ sec	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; ☐ = Observer's Position; ◇ = Sun; → = Wind; = = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Chris Brown

OBSERVER'S SIGNATURE:

DATE: 04/22/05

ORGANIZATION: ATP

CERTIFIED BY: Dan Koontz

DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME Nucor Steel

OBSERVATION DATE 04-22-05

START TIME 1030

STOP TIME 1200

ADDRESS

CITY Crawfordsville STATE IN ZIP

PHONE SOURCE ID NUMBER

PROCESS EQUIPMENT EAF's 1 & 2 OPERATING MODE

CONTROL EQUIPMENT PPFF Baghouse (EAST) # 1 OPERATING MODE

DESCRIBE EMISSION POINT
START Roof Monitors STOP Roof Monitors

HEIGHT ABOVE GROUND LEVEL
START 120' STOP 120'

HEIGHT RELATIVE TO OBSERVER
START 120' STOP 120'

DISTANCE FROM OBSERVER
START 500' STOP 500'

DIRECTION FROM OBSERVER
START W STOP W

DESCRIBE EMISSIONS
START N/A STOP N/A

EMISSION COLOR
START N/A STOP N/A

PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐

WATER DROPLETS PRESENT
NO ☒ YES ☐

IF WATER DROPLET PLUME:
ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START R.M. EXIT STOP R.M. EXIT

DESCRIBE BACKGROUND
START SKY STOP SKY

BACKGROUND COLOR
START Gray STOP Gray

SKY CONDITIONS
START Overcast STOP Overcast

WIND SPEED
START 0-5 STOP 0-5

WIND DIRECTION
START N STOP N

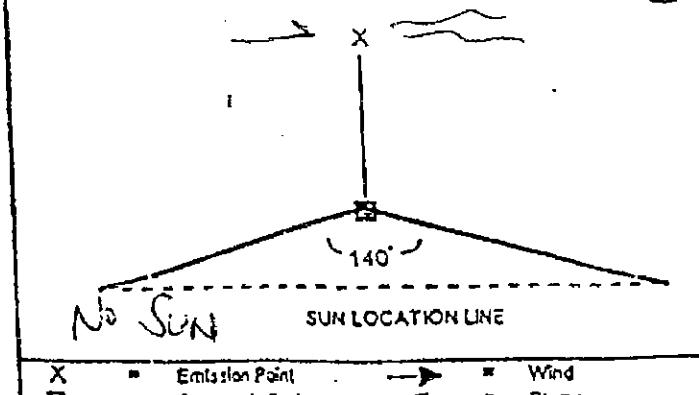
AMBIENT TEMPERATURE
START 58° STOP

WET BULB TEMP.

R.H. PERCENT

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point → = Wind
□ = Observer's Position ≈ = Plume
◇ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Carlos Brown

OBSERVER'S SIGNATURE [signature] DATE 04 22 05

ORGANIZATION ATP

CERTIFIED BY Carl Krontz DATE

Comments:

Visible Emissions Observations Form

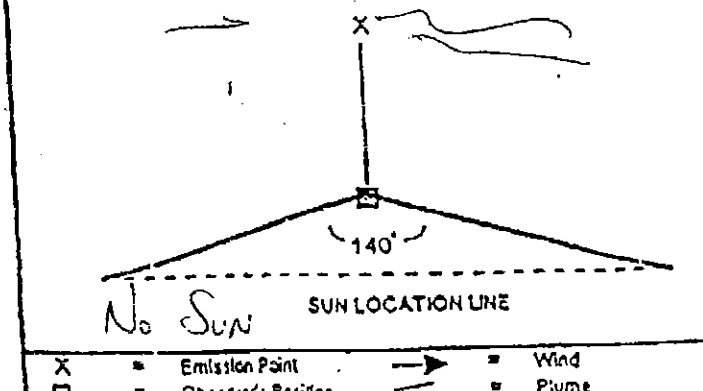
RUN NUMBER: 3

SOURCE NAME	Nucor Steel
ADDRESS	
CITY	Crawfordsville
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & Add
OPERATING MODE	
CONTROL EQUIPMENT	PPFF Baghouse #1 (East)
OPERATING MODE	
DESCRIBE EMISSION POINT START	Roof Monitor
DESCRIBE EMISSION POINT STOP	Roof Monitor
HEIGHT ABOVE GROUND LEVEL START	120'
HEIGHT ABOVE GROUND LEVEL STOP	120'
HEIGHT RELATIVE TO OBSERVER START	120'
HEIGHT RELATIVE TO OBSERVER STOP	120'
DISTANCE FROM OBSERVER START	500'
DISTANCE FROM OBSERVER STOP	500'
DIRECTION FROM OBSERVER START	W
DIRECTION FROM OBSERVER STOP	W
DESCRIBE EMISSIONS START	N/A
DESCRIBE EMISSIONS STOP	N/A.
EMISSION COLOR START	N/A
EMISSION COLOR STOP	N/A
PLUME TYPE	CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	NO ☒ YES ☐
IF WATER DROPLET PLUME	ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	R.M. EXIT
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	R.M. EXIT
DESCRIBE BACKGROUND START	Sky
DESCRIBE BACKGROUND STOP	Sky
BACKGROUND COLOR START	Gray
BACKGROUND COLOR STOP	Gray
SKY CONDITIONS START	Overcast
SKY CONDITIONS STOP	Overcast
WIND SPEED START	0-5
WIND SPEED STOP	0-5
WIND DIRECTION START	N
WIND DIRECTION STOP	N
AMBIENT TEMPERATURE START	
AMBIENT TEMPERATURE STOP	
WET BULB TEMP.	
R.H. PERCENT	

OBSERVATION DATE: 04-22-05
START TIME: 1230
STOP TIME: 1300

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point
☐ = Observer's Position
◇ = Sun
→ = Wind
= = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Travis Brown

OBSERVER'S SIGNATURE:

DATE: 04/22/05

ORGANIZATION: ATP

CERTIFIED BY: Carl Koontz

DATE:

Comments:

APPENDIX VIII **SUBMITTED PROTOCOL**

COMPLIANCE TEST PROTOCOL
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Date Prepared: March 7, 2005 **Proposed Test Date:** To Be Determined

Plant Address and Location: 4537 South Nucor Street, Crawfordsville, IN

1. Source Information

AFS: _____ Id Number: _____ Permit Number: 107-16823-00038
Company: Nucor Steel
Mail Address: 4537 South Nucor Street
City: Crawfordsville, Indiana Zip: 47933
Co.Contact: Mark Washer Phone: (765) 364-1323

Check program if applicable:

FESOP: _____
Title V: X
SSOA: _____

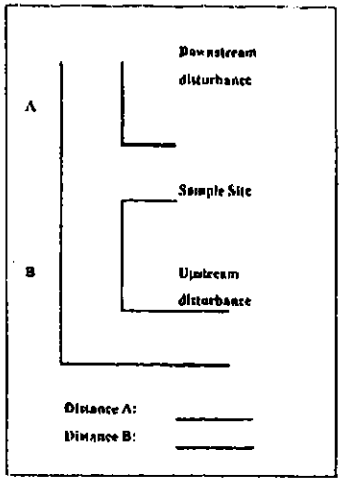
AGENCY USE ONLY	Date Rec'd:	
Inspector:	Reviewer:	Date Appr:

2. Tester Information

Name: Air Test Professionals, Inc.
Address: 1201 N. Graham Ave.
Contact: Carlos M. Brown Phone: 317-345-1723
Pre-Test Inspection Complete? Yes

3. Process Information

Unit to Test: Meltshop EAF Baghouse #1
Max. Rated Capacity: 502 tons/hour
Proposed Operating Speed: Normal (MAX)
Pollution Control Equipment: 2 Pos. Pressure Baghouses
Process Description: EAFs & AOD & other units melt scrap steel for processing
Fuel Type: N/A



4. Test Information

		# Runs	Time/Run
Methods 1-4		3	120 MIN
Method 5			
Method 6			
Method 29	Lead & Mercury	3	120 min
Method 25A	VOC	3	60 min
Other Testing:			

5. Sampling Strategy

a. Describe any deviations from the standard test method.
None

b. Describe method used to determine quantity of raw materials
Plant personnel will keep record production

6. Sample Site Location

Does sample port location meet 40 CFR 60, Appx A, Method 1 Section 1.2 requirements: Yes/No: _____ If No. Explain _____
Sampling performed in representative number of compartments in the positve pressure baghouse

Number of sample points for MS: N/A
Diameter at sample site: _____ Stack height: _____
Approx. stack gas flow (ACFM): _____
Approx. gas temp. (degF): _____
Approx. gas moisture (%): _____

Reason for test:

State Agreed Order: Yes/No: _____ Operating permit: Yes/No: Yes
Construction Permit: Yes/No: _____ Compliance w 326 _____
NSPS 40 CFR 60 Subpart: _____ Other _____
Title V: _____
Other (i.e. EPA, CD, state, 114) _____

326 IAC 3-2.1 requires this completed form and fee to be submitted 35 days prior to proposed test date to.
(FEE NOT APPLICABLE IF FESOP OR TITLE V)

Questions may be directed to 317-232-8338, FAX : 317-233-6865

Compliance Data Section
Office of Air Management
Indiana Department of Environmental Management
100 North Senate
PO BOX 6015
Indianapolis, IN 46206-6015

APPENDIX IX PRODUCTION DATA

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

PM/PM10 - Run 1 - 4/18/05 - 12:50 - 18:38

	Heat No	Grade			Start			
South EAF	159264	1005T1	142.1	130.7	12:32	45.6	20.8	13.6
	159265	1005S1	142.2	114.6	13:18	59.7	21	27.4
	159266	1005T1	131.8	131	14:17	37.8	20.9	8.7
	159267	1005S1	130.8	115.5	14:55	41.7	21.1	11.5
	159268	1005T1	130.5	131	15:37	36.9	20.6	9
	159269	1005T1	132.8	131.6	16:14	37.6	21.2	10
	159270	1005T1	132.4	131.2	16:51	37.9	21.3	8.2
	159271	1005T1	136.8	130.2	17:29	47.3	20.7	18.2
	159272	1005T1	137.5	129.5	18:17	40.9	21.3	10.3
	159273	1005T1	64	131	18:57	34.4	31.6	17.7
	159274	1005T1	130.5	130.5	19:32	41.1	21.2	10.4
	159275	1005S1	130.9	115.8	20:13	44.2	21	13.3
North EAF	254837	40951	130.3	118.4	12:47	79.1	27.5	33.8
	254838	40951	132.7	121.7	14:06	70.8	27.8	26.5
	254839	40951	108.4	119	15:17	81.4	27.6	42
	254840	40951	112.8	116.5	16:39	82.5	39	42.8
	254841	40951	112.3	116.5	18:01	82.7	27.6	47.5
	254842	40951	114.1	117.2	19:24	135.9	86.7	92.4
	254843	40951	129.3	118	21:40	219.5	27.1	179.9
AOD	254835	40951	121	130	12:17	84		
	254836	40951	122	131.5	13:41	70		
	254837	40951	119	124.4	14:51	84		
	254838	40951	122	128.3	16:15	75		
	254839	40951	119	123.4	17:40	85		
	254840	40951	117	117.5	19:02	82		
	254841	40951	117	119	20:23	79		

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

PM/PM10 - Run 2 - 4/19/05 - 8:20 - 16:08

Select	Heat No.	Grade			Start			
South EAF	159290	1005T1	134	130.6	8:15	42.1	21.3	12.7
	159291	1005T1	136.6	130.2	8:57	45.4	21.6	14.9
	159292	1005T1	136.3	127.1	9:42	67.4	21.4	37.6
	159293	1005T1	137.6	129.9	10:50	45.9	25.8	14.6
	159294	1005T1	153.1	129.6	11:36	106.7	79.6	76.4
	159295	1005T1	140.5	129.3	13:22	39.5	21.8	9.4
	159296	1005T1	138.4	129.3	14:02	59.5	21.2	28.6
	159297	1005T1	137	129.9	15:01	39.4	21.1	9.1
	159298	1005S1	136.7	115.2	15:41	41.9	21	10
	159299	1005T1	136.6	130.5	16:23	39.1	20.6	9.4
North EAF	254850	40951	125.1	123.4	7:55	65.5	27.7	23.6
	254851	40951	128.1	121.5	9:00	121.3	27.8	77.4
	254852	40951	125.5	114.3	11:01	98.6	27.7	56.2
	254853	40951	126.8	118.5	12:40	54.5	27.7	13.1
	254854	40951	128.6	114.5	13:34	70.3	27.2	30
	254855	40951	133	119	14:45	84.2	40.5	40.2
	254856	1050	151.9	121.8	16:09	97.1	24.9	57.1
	254857	1050	142.2	121.9	17:46	72.6	24.3	35.8
AOD	254849	40951	120	124.7	8:20	64		
	254850	40951	124	127.2	9:24	89		
	254851	40951	122	124.8	10:33	120		
	254852	40951	114.5	118.7	12:03	92		
	254853	40951	119	122.1	14:05	98		
	254854	40951	115	118.3	15:43	77		
	254855	40951	112	124.4	17:00	72		
	254856	1050	122	122.9	18:13	67		
	254857	1050	122	121.9	19:19	35		
	254858	1050	122.5	122.9	19:54	32		
	254859	1050	123	123.3	20:26	161		

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

PM/PM10 - Run 3 - 4/22/05 - 8:33 - 14:14

Select	Heat No.	Grade			Start			
South EAF	159361	1008W3	126	132	7:21	76.3	23.4	59.7
	159362	1008W3	141.2	132.8	8:08	41.2	21.8	9.1
	159363	1008W3	148.4	131.8	9:19	45.4	22.4	13.1
	159364	1008W3	140.7	131.1	10:04	91.7	31.6	59.2
	159365	1026A2	141.1	125.4	11:36	43.4	21.9	12
	159366	1026A2	135.1	129.4	12:19	45.7	21.3	14.9
	159367	1026A2	135	130.1	13:05	48.4	21.8	17.1
	159368	1026A2	135.9	129.9	13:53	43.8	21.6	13
	159369	1026A2	139.6	125.7	14:37	41.4	21.7	10.6
North EAF	254910	1001S8	131.2	123.9	6:30	49	23.3	12.1
	254911	1001S8	132.2	125.4	9:19	46.3	23.2	12.2
	254912	1001S8	138	126.3	10:06	58.5	30.2	23.2
	254913	1001S8	133.6	126.2	11:04	43.3	23.2	9.7
	254914	1001S8	132.1	126.7	11:47	54.7	23	18.5
	254915	1001S8	134.3	126.8	12:42	44.8	23.3	11.6
	254916	1001S8	133.7	126.2	13:27	48.8	27.9	13.9
	254917	1005S1	139.6	107.2	14:16	58.4	22.3	24
AOD	254908	1001S8	125	127.9	8:16	41		
	254910	1001S8	124.3	127.1	9:57	72		
	254911	1001S8	125	127.8	10:09	56		
	254912	1001S8	126	128.8	11:05	57		
	254913	1001S8	126	128.7	12:01	48		
	254914	1001S8	127	129.9	12:50	59		
	254915	1001S8	127	129.9	13:49	55		

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 18, 2005

PM/PM10 Run 1: 12:50 pm - 7:36 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159264	12:32 PM	1:18 PM	130.7	46.0	38.0	108.0		
	159265	1:18 PM	2:17 PM	114.6	59.0	59.0	114.6		
	159266	2:17 PM	2:55 PM	Delay 2:20 pm - 2:47 pm			37.9		
	159267	2:55 PM	3:37 PM	115.5	40.0	40.0	115.5		
	159268	3:37 PM	4:14 PM	131.9	37.0	11.0	38.9		
	159269	4:14 PM	4:51 PM	Delay 3:48 pm - 5:08 pm			0.0		
	159270	4:51 PM	5:29 PM	131.2	38.0	21.0	72.5		
	159271	5:29 PM	6:17 PM	130.2	48.0	48.0	130.2		
	159272	6:17 PM	6:57 PM	129.5	40.0	40.0	129.5		
	159273	6:57 PM	7:32 PM	131.0	35.0	35.0	131.0		
	159274	7:32 PM	8:13 PM	130.5	41.0	4.0	12.7	890.9	176.9
North EAF	254837	12:47 PM	2:06 PM	118.4	79.0	76.0	113.9		
	254838	2:06 PM	3:17 PM	Delay 2:20 pm - 2:47 pm			75.4		
	254839	3:17 PM	4:39 PM	[illegible]	82.0	31.0	46.0		
	254840	4:39 PM	6:01 PM	Delay 3:48 pm - 5:08 pm			75.3		
	254841	6:01 PM	7:24 PM	118.5	83.0	83.0	116.5		
	254842	7:24 PM	9:40 PM	117.2	136.0	12.0	10.3	436.5	87.6
AOD	254835	12:17 PM	1:41 PM	130.0	84.0	51.0	78.8		
	254836	1:41 PM	2:51 PM	Delay 2:20 pm - 2:47 pm			80.8		
	254837	2:51 PM	4:15 PM	[illegible]	[illegible]	[illegible]	[illegible]		
	254838	4:15 PM	5:40 PM	Delay 3:48 pm - 5:08 pm			54.7		
	254839	5:40 PM	7:02 PM	123.4	85.0	85.0	123.4		
	254840	7:02 PM	8:23 PM	117.5	82.0	34.0	48.7	471.0	94.6

Total Meltshop Production - Avg. tons/hr: 361.1
Total Test Run Length, hrs: 4.98
Tons produced during run: 1798.3

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 19, 2005

PM/PM10 Run 2: 8:20 am - 4:08 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159290	8:15 AM	8:57 AM	130.6	42.0	37.0	115.1		
	159291	8:57 AM	9:42 AM	130.2	45.0	45.0	130.2		
	159292	9:42 AM	10:50 AM	127.1	68.0	10.0	16.7		
	159293	10:50 AM	11:36 AM	Delay 9:52 am - 12:35 pm			0.0		
	159294	11:36 AM	1:22 PM	129.6	106.0	47.0	57.5		
	159295	1:22 PM	2:02 PM	129.3	40.0	40.0	129.3		
	159296	2:02 PM	3:01 PM	129.3	59.0	59.0	129.3		
	159297	3:01 PM	3:41 PM	129.9	40.0	40.0	129.9		
	159298	3:41 PM	4:23 PM	115.2	42.0	27.0	74.1	784.0	154.3
North EAF	254850	7:55 AM	9:00 AM	123.4	65.0	40.0	75.9		
	254851	9:00 AM	11:01 AM	121.5	121.0	52.0	52.2		
	254852	11:01 AM	12:40 PM	Delay 9:52 am - 12:35 pm			5.8		
	254853	12:40 PM	1:34 PM	118.5	54.0	54.0	118.5		
	254854	1:34 PM	2:45 PM	114.5	71.0	71.0	114.5		
	254855	2:45 PM	4:09 PM	119.0	84.0	83.0	117.6	484.5	85.4
AOD	254849	8:20 AM	9:24 AM	124.7	64.0	64.0	124.7		
	254850	9:24 AM	10:33 AM	127.2	69.0	29.0	51.6		
	254851	10:33 AM	12:33 PM	Delay 9:52 am - 12:35 pm			0.0		
	254852	12:33 PM	2:05 PM	118.7	92.0	2.0	2.6		
	254853	2:05 PM	3:43 PM	122.1	98.0	98.0	122.1		
	254854	3:43 PM	5:00 PM	118.3	77.0	25.0	39.4	339.4	66.8

Total Meltshop Production - Avg. tons/hr: 316.8
Total Test Run Length, hrs: 5.08
Tons produced during run: 1607.9

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 22, 2005

PM/PM10 Run 3: 8:33 am - 2:14 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159361	7:21 AM	8:38 AM	132.0	77.0	5.0	8.6		
	159362	8:38 AM	9:19 AM	132.8	41.0	41.0	132.8		
	159363	9:19 AM	10:04 AM	131.8	45.0	45.0	131.8		
	159364	10:04 AM	11:36 AM	131.1	92.0	37.0	61.2		
	159365	11:36 AM	12:19 PM	Delay 10:48 am - 11:23 am			125.4		
	159366	12:19 PM	1:05 PM	128.4	46.0	46.0	128.4		
	159367	1:05 PM	1:53 PM	130.1	48.0	48.0	130.1		
	159368	1:53 PM	2:37 PM	129.8	44.0	21.0	62.0	801.3	157.1
North EAF	254910	8:30 AM	9:19 AM	123.9	49.0	46.0	116.3		
	254911	9:19 AM	10:06 AM	125.4	47.0	47.0	125.4		
	254912	10:06 AM	11:04 AM	[illegible]	58.0	42.0	91.5		
	254913	11:04 AM	11:47 AM	Delay 10:48 am - 11:23 am			70.4		
	254914	11:47 AM	12:42 PM	126.7	55.0	55.0	126.7		
	254915	12:42 PM	1:27 PM	126.8	45.0	45.0	126.8		
	254916	1:27 PM	2:16 PM	126.2	49.0	47.0	121.0	778.2	152.6
AOD	254908	8:16 AM	8:57 AM	127.9	41.0	24.0	74.9		
	254910	8:57 AM	10:09 AM	127.1	72.0	72.0	127.1		
	254911	10:09 AM	11:05 AM	[illegible]	56.0	39.0	89.0		
	254912	11:05 AM	12:02 PM	Delay 10:48 am - 11:23 am			86.1		
	254913	12:02 PM	12:50 PM	128.7	48.0	48.0	128.7		
	254914	12:50 PM	1:49 PM	129.9	59.0	59.0	129.9		
	254915	1:49 PM	2:44 PM	129.8	55.0	25.0	59.0	696.7	138.6

Total Meltshop Production - Avg. tons/hr: 446.3
Total Test Run Length, hrs: 5.1
Tons produced during run: 2276.2

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

VOC/Metals - Run 1 - 4/18/05 - 12:50 - 15:50

	Heat No.	Grade			Start			
South EAF	159264	1005T1	142.1	130.7	12:32	45.6	20.8	13.6
	159265	1005S1	142.2	114.6	13:18	59.7	21	27.4
	159266	1005T1	131.8	131	14:17	37.8	20.9	8.7
	159267	1005S1	130.6	115.5	14:55	41.7	21.1	11.5
	159268	1005T1	130.5	131	15:37	36.9	20.6	9
	159269	1005T1	132.8	131.6	16:14	37.6	21.2	10
North EAF	254837	40951	130.3	118.4	12:47	79.1	27.5	33.8
	254838	40951	132.7	121.7	14:06	70.8	27.8	26.5
	254839	40951	108.4	119	15:17	81.4	27.6	42
	254840	40951	112.8	116.5	16:39	82.5	39	42.8
AOD	254835	40951	125	130	12:17	84		
	254836	40951	122	131.5	13:41	70		
	254837	40951	119	124.6	14:55	84		
	254838	40951	122	128.3	16:15	75		

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

VOC/Metals - Run 2 - 4/18/05 - 17:05 - 19:20

Select	Heat No.	Grade			Start			
South EAF	159270	1005T1	132.4	131.2	16:51	37.9	21.3	8.2
	159271	1005T1	136.8	130.2	17:29	47.3	20.7	18.3
	159272	1005T1	137.5	129.5	18:17	40.9	21.3	10.3
	159273	1005T1	64	131	18:57	34.4	31.6	17.7
	159274	1005T1	130.5	130.5	19:32	41.1	21.2	10.4
North EAF	254840	40951	112.8	116.5	16:39	82.5	39	42.8
	254841	40951	112.3	116.5	18:01	82.7	27.6	47.5
	254842	40951	114.1	117.2	19:24	185.9	80.7	92.4
AOD	254838	40951	122	128.3	16:15	75		
	254839	40951	119	124.4	17:40	85		
	254840	40951	117	117.5	19:02	82		
	254841	40951	117	119	20:23	79		

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

VOC/Metals - Run 3 - 4/19/05 - 8:20 - 13:25

Select	Heat No.	Grade			Start			
South EAF	159290	1005T1	134	130.6	8:15	42.1	21.3	12.7
	159291	1005T1	134.6	130.3	8:57	45.4	21.6	14.9
	159292	1005T1	136.9	127.1	9:43	47.4	21.4	37.6
	159293	1005T1	137.6	129.9	10:50	45.9	25.8	14.6
	159294	1005T1	153.3	129.6	11:36	108.7	79.6	76.4
	159295	1005T1	140.5	129.3	13:22	39.5	21.8	9.4
	159296	1005T1	138.4	129.3	14:02	59.5	21.2	28.6
North EAF	254850	40951	125.1	123.4	7:55	65.5	27.7	23.6
	254851	40951	129.1	121.5	9:00	121.3	27.8	77.4
	254852	40951	125.5	114.3	11:01	98.6	27.7	56.2
	254853	40951	126.8	118.5	12:40	64.5	27.7	13.1
	254854	40951	128.6	114.5	13:34	79.3	27.2	30
AOD	254853	40951	126.8	118.5	12:40	64.5	27.7	13.1
	254849	40951	120	124.7	8:20	64		
	254850	40951	124	127.3	9:24	109		
	254851	40951	122	124.8	10:33	120		

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 18, 2005

VOC/Metals Run 1: 12:50 pm - 3:35 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159264	12:32 PM	1:18 PM	130.7	46.0	28.0	79.6		
	159265	1:18 PM	2:17 PM	114.6	59.0	58.0	114.6		
	159266	2:17 PM	2:55 PM	Delay 12:20 pm - 2:47 pm			37.9		
	159267	2:55 PM	3:37 PM	115.5	40.0	40.0	115.5		
								347.6	151.1
North EAF	254837	12:47 PM	2:06 PM	118.4	79.0	76.0	113.9		
	254838	2:06 PM	3:17 PM	Delay 2:20 pm - 2:47 pm			75.4		
	254839	3:17 PM	4:36 PM	119.0	82.0	18.0	26.1		
								215.4	93.7
AOD	254836	12:17 PM	1:41 PM	130.0	84.0	51.0	76.9		
	254836	1:41 PM	2:57 PM	Delay 2:20 pm - 2:47 pm			80.8		
	254837	2:57 PM	4:13 PM	124.4	84.0	44.0	66.2		
								224.9	67.8

Total Meltshop Production - Avg. tons/hr: 342.6
Total Test Run Length (less delays), hrs: 2.3
Tons produced during run: 787.9

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 18, 2005

VOC/Metals Run 2: 6:05 pm - 7:20 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159270	4:51 PM	5:23 PM	131.2	36.0	24.0	82.9		
	159271	5:29 PM	6:17 PM	130.2	48.0	48.0	130.2		
	159272	6:17 PM	6:57 PM	129.5	40.0	40.0	128.5		
	159273	6:57 PM	7:32 PM	131.0	35.0	23.0	86.1		
								428.6	190.5
North EAF	254840	4:39 PM	6:01 PM	118.5	82.0	58.0	79.8		
	254841	6:01 PM	7:24 PM	118.5	83.0	79.0	110.9		
								190.4	84.8
AOD	254838	4:15 PM	5:40 PM	128.3	75.0	35.0	58.9		
	254839	5:40 PM	7:02 PM	123.4	85.0	85.0	123.4		
	254840	7:02 PM	8:23 PM	117.5	82.0	18.0	26.8		
								209.1	92.9

Total Meltshop Production - Avg. tons/hr: 368.1
Total Test Run Length, hrs: 2.28
Tons produced during run: 828.2

Nucor Steel - Crawfordsville, IN
Baghouse #1 & #2 Stack Test Production Data
April 19, 2005

VOC/Metals Run 3: 8:20am - 1:25 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159290	8:15 AM	8:57 AM	130.6	42.0	37.0	115.1		
	159291	8:57 AM	9:42 AM	130.2	45.0	45.0	130.2		
	159292	9:42 AM	10:50 AM	127.1	68.0	10.0	18.7		
	159293	10:50 AM	11:36 AM	Delay 9:52 am - 12:35 pm			0.0		
	159294	11:36 AM	1:22 PM	129.6	106.0	47.0	57.5		
	159295	1:22 PM	2:02 PM	129.3	40.0	3.0	9.7		
								331.1	139.7
North EAF	254850	7:55 AM	9:00 AM	123.4	65.0	40.0	75.9		
	254851	9:00 AM	11:01 AM	Delay 9:52 am - 12:35 pm			32.2		
	254852	11:01 AM	12:40 PM	114.0	99.0	9.0	5.8		
	254853	12:40 PM	1:34 PM	118.5	54.0	45.0	86.8		
								232.7	86.2
AOD	254849	8:20 AM	9:24 AM	124.7	64.0	64.0	124.7		
	254850	9:24 AM	10:33 AM	127.2	69.0	28.0	31.8		
	254851	10:33 AM	12:33 PM	Delay 9:52 am - 12:35 pm			124.8		
	254852	12:33 PM	2:05 PM	118.7	92.0	80.0	116.1		
								417.2	176.0

Total Meltshop Production - Avg. tons/hr: 413.9
Total Test Run Length, hrs: 2.37
Tons produced during run: 981.0

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

Run 1 Fan Amps and Damper Positions

DATE: 4/18/05 Run 1 Time: 12:50 pm - 7:36 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
12:48 PM	159	100%	153	100%					144	100%	161	99%
1:03 PM	155	100%	149	100%					142	100%	155	100%
1:18 PM	153	100%	143	99%					140	100%	157	100%
1:33 PM	149	100%	142	99%					138	100%	149	100%
1:48 PM	162	86%	154	99%					154	100%	160	99%
2:03 PM	157	100%	148	100%					148	100%	155	100%
2:18 PM	162	92%	155	99%					154	100%	157	98%
2:33 PM	161	90%	152	99%					152	100%	160	100%
2:48 PM	157	100%	145	100%					149	100%	159	100%
3:03 PM	147	100%	138	100%					136	100%	146	100%
3:18 PM	157	100%	150	100%					146	100%	156	100%
3:33 PM	155	100%	151	100%					146	100%	157	100%
3:48 PM	154	100%	149	100%					147	100%	155	100%
4:03 PM	159	100%	152	100%					149	100%	156	100%
4:18 PM	161	79%	161	68%					156	100%	158	96%
4:33 PM	155	100%	156	100%					143	100%	155	100%
4:48 PM	162	94%	164	79%					152	100%	158	99%
5:03 PM	159	92%	159	74%					152	100%	151	100%
5:18 PM	156	100%	157	99%					142	100%	159	100%
5:33 PM	155	100%	156	100%					144	100%	159	100%
5:48 PM	161	84%	160	67%					155	99%	160	100%
6:03 PM	161	100%	161	92%					148	100%	159	100%
6:18 PM	160	82%	160	66%					155	100%	161	100%
6:33 PM	162	90%	161	74%					151	100%	159	97%
6:48 PM	158	100%	159	83%					149	100%	158	100%
7:03 PM												
7:18 PM	152	100%	155	100%					143	100%	151	100%
7:33 PM	161	95%	162	74%					152	100%	159	99%
7:48 PM	127	100%	137	100%					116	100%	130	100%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	162	164			156	161	164
Min	127	164			116	130	116
Avg	156.3	153.2			146.5	155.7	152.9

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

Run 2 Fan Amps and Damper Positions

DATE: 4/19/05 Run 2 Time: 8:20 am - 4:08 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
8:15 AM	160	83%	161	67%					152	100%	161	97%
8:30 AM	158	96%	160	76%					149	100%	159	100%
8:45 AM	147	100%	151	100%					136	100%	150	100%
9:00 AM	166	83%	164	66%					159	100%	159	98%
9:15 AM	160	84%	161	68%					152	100%	161	99%
9:30 AM	161	95%	161	73%					149	100%	162	99%
9:45 AM	153	100%	155	100%					142	100%	154	100%
10:00 AM	161	74%	165	63%					163	98%	157	95%
10:15 AM	160	70%	163	58%					162	91%	157	93%
10:30 AM	161	68%	161	58%					161	89%	158	94%
10:45 AM	160	67%	161	54%					159	82%	164	93%
11:00 AM	162	76%	158	61%					161	96%	163	97%
				TESTING SUSPENDED								
12:40 PM	162	76%	158	61%					160	97%	159	94%
12:55 PM	159	85%	160	69%					152	100%	164	100%
1:10 PM	152	100%	159	100%					146	100%	153	100%
1:25 PM	151	100%	153	100%					140	100%	155	100%
1:40 PM	159	78%	161	66%					155	100%	160	99%
1:55 PM	161	94%	162	73%					149	100%	164	100%
2:10 PM	153	100%	160	95%					140	100%	161	100%
2:25 PM	144	100%	148	100%					136	100%	147	100%
2:40 PM	155	100%	160	95%					145	100%	160	100%
2:55 PM	157	89%	158	71%					150	100%	160	100%
3:10 PM	161	77%	161	62%					157	100%	162	98%
3:25 PM	157	100%	159	87%					150	100%	156	100%
3:40 PM	150	100%	157	99%					138	100%	155	100%
3:55 PM	156	100%	160	99%					146	100%	157	100%
4:10 PM	158	100%	163	96%					150	100%	158	100%
AVG	157	89%	159	78%					150	98%	158	98%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	166	165			163	164	166
Min	144	148			136	147	136
Avg	157.2	159.3			150.3	158.4	156.3

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

Run 3 Fan Amps and Damper Positions

DATE: 4/22/05 Run 3 Time: 8:33 am - 2:14 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
8:33 AM			164	64%	160	71%	160	94%			159	96%
8:48 AM			155	100%	147	100%	141	100%			151	100%
9:03 AM			151	100%	150	100%	143	100%			153	100%
9:18 AM			165	75%	162	88%	155	100%			160	99%
9:33 AM			155	100%	150	100%	143	100%			155	100%
9:48 AM			154	100%	150	100%	141	100%			155	100%
10:03 AM			164	80%	164	89%	153	100%			161	100%
10:18 AM			155	90%	152	100%	145	100%			155	100%
10:33 AM			158	92%	154	100%	148	100%			161	100%
10:48 AM			151	100%	149	100%	140	100%			150	100%
				TESTING SUSPENDED								
11:30 AM			152	99%	148	100%	141	100%			150	100%
11:45 AM			161	95%	157	100%	149	100%			158	100%
12:00 PM			155	98%	148	100%	140	100%			148	100%
12:15 PM			154	100%	150	100%	144	100%			154	100%
12:30 PM			162	81%	161	100%	153	100%			161	99%
12:45 PM			162	67%	163	82%	156	100%			163	98%
1:00 PM			152	100%	149	100%	143	100%			154	100%
1:15 PM			152	99%	144	100%	139	100%			152	100%
1:30 PM			163	71%	160	79%	157	100%			160	98%
1:45 PM			155	78%	154	95%	146	100%			158	100%
2:00 PM			152	99%	149	100%	143	100%			153	100%
2:15 PM			157	99%	157	100%	147	100%			158	100%
AVG			157	90%	154	96%	147	100%			156	100%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max		165	164	160		163	165
Min		151	144	139		148	139
Avg		156.8	153.5	146.7		155.9	153.2

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

4/18/2005			4/19/2005			4/22/2005		
Run 1			Run 2			Run 3		
	BH #1	BH #2		BH #1	BH #2		BH #1	BH #2
Time	DP, in. H2O	DP, in. H2O	Time	DP, in. H2O	DP, in. H2O	Time	DP, in. H2O	DP, in. H2O
12:48 PM	7.5	9.5	8:15 AM	7.6	8.6	8:33 AM	7.5	7.9
1:03 PM	7.6	10.1	8:30 AM	7.5	9.4	8:48 AM	7.9	8.1
1:18 PM	7.7	9.2	8:45 AM	7.4	8.8	9:03 AM	8.1	8.3
1:33 PM	8.0	10.3	9:00 AM	7.6	8.9	9:18 AM	8.4	9.0
1:48 PM	7.6	10.0	9:15 AM	6.8	9.4	9:33 AM	7.6	8.6
2:03 PM	7.3	8.9	9:30 AM	7.1	9.9	9:48 AM	7.9	9.2
2:18 PM	7.6	8.8	9:45 AM	7.4	7.4	10:03 AM	8.4	9.8
2:33 PM	7.2	10.1	10:00 AM	7.0		10:18 AM	7.3	9.0
2:48 PM	8.0	10.4	10:15 AM	7.1	10.1	10:33 AM	8.0	9.0
3:03 PM	7.7	9.1	10:30 AM	6.5	8.4	10:48 AM	8.0	9.6
3:18 PM	7.8	10.8	10:45 AM	6.4	8.2			
3:33 PM	7.8	10.1	11:00 AM	6.7				
3:48 PM	7.8	10.3				11:30 AM	8.1	7.9
4:03 PM	7.2	10.8				11:45 AM	8.6	8.2
4:18 PM	7.6	10.2	12:40 PM	6.8	6.9	12:00 PM	7.7	9.3
4:33 PM	7.8	10.7	12:55 PM	7.5	8.4	12:15 PM	8.1	10.1
4:48 PM	7.8	9.8	1:10 PM	7.8	8.3	12:30 PM	8.3	9.0
5:03 PM	7.6	10.1	1:25 PM	7.7	7.6	12:45 PM	7.7	10.0
5:18 PM	7.7	10.9	1:40 PM	6.8	9.3	1:00 PM	8.1	10.7
5:33 PM	8.3	9.5	1:55 PM	7.7	9.6	1:15 PM	8.0	8.8
5:48 PM	7.6	10.1	2:10 PM	7.7	8.0	1:30 PM	8.1	10.2
6:03 PM	7.6	10.8	2:25 PM	7.8	7.7	1:45 PM	7.9	10.1
6:18 PM	7.7	9.4	2:40 PM	7.1	9.4	2:00 PM	7.8	9.8
6:33 PM	7.5	10.1	2:55 PM	7.2	9.5	2:15 PM	8.6	9.9
6:48 PM	7.8	9.8	3:10 PM	7.4	9.1			
7:03 PM	8.0	9.0	3:25 PM	7.9	9.6			
7:18 PM	7.5	10.0	3:40 PM	7.0	10.0			
7:33 PM	7.9	9.1	3:55 PM	8.0	9.2			
7:48 PM	7.7	9.9	4:10 PM	7.3	10.3			
Max	8.3	10.9	Max	8.0	10.3	Max	8.6	10.7
Min	7.2	8.8	Min	6.4	6.9	Min	7.3	7.9
Avg	7.7	9.9	Avg	7.3	8.9	Avg	8.0	9.2

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

Run 1 Bag Leak Detection System

DATE: 4/18/05 Run 1 Time: 12:50 pm - 7:36 pm

	Baghouse #1 Compartment							
Time	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
12:48 PM	1.4%	1.2%	2.1%	8.5%	1.2%	0.8%	0.8%	0.8%
1:03 PM	1.0%	0.5%	0.8%	2.6%	0.4%	0.8%	0.6%	0.8%
1:18 PM	0.2%	0.4%	0.8%	3.6%	0.7%	1.4%	1.1%	0.8%
1:33 PM	1.0%	1.3%	1.1%	5.4%	2.0%	5.0%	1.0%	0.9%
1:48 PM	0.8%	0.4%	0.8%	0.7%	1.2%	0.8%	0.9%	0.8%
2:03 PM	0.9%	1.1%	1.6%	0.0%	1.8%	0.4%	2.3%	1.1%
2:18 PM	0.8%	0.8%	0.8%	0.1%	1.2%	0.8%	1.1%	0.8%
7:12 PM	0.8%	0.8%	0.8%	0.7%	1.1%	0.8%	0.7%	1.5%
2:48 PM	0.8%	1.5%	1.3%	0.8%	1.6%	8.2%	1.1%	1.4%
3:03 PM	1.4%	4.7%	4.2%	12.6%	8.0%	2.6%	0.3%	2.8%
3:18 PM	1.9%	0.5%	0.9%	7.2%	0.7%	0.8%	4.3%	1.2%
3:33 PM	0.7%	0.8%	0.5%	4.5%	1.0%	5.6%	1.2%	0.8%
3:48 PM	1.0%	1.5%	1.4%	3.0%	1.0%	0.8%	0.8%	1.8%
4:03 PM	0.2%	0.5%	0.4%	3.5%	1.2%	1.6%	1.1%	0.7%
4:18 PM	0.8%	0.7%	0.7%	0.9%	0.8%	0.4%	1.0%	0.7%
4:33 PM	1.6%	1.8%	1.6%	1.8%	1.3%	1.7%	0.7%	0.8%
4:48 PM	0.7%	0.7%	0.7%	0.7%	1.1%	0.8%	0.8%	0.7%
5:03 PM	1.5%	0.7%	0.7%	1.2%	0.6%	0.7%	1.0%	0.7%
5:18 PM	0.7%	1.2%	0.8%	0.1%	1.2%	1.2%	2.2%	0.8%
5:33 PM	0.8%	1.0%	1.2%	0.5%	1.0%	0.8%	1.1%	1.5%
5:48 PM	0.7%	0.7%	0.7%	0.6%	0.8%	0.7%	0.8%	1.5%
6:03 PM	0.8%	0.8%	1.6%	0.6%	0.8%	0.7%	4.1%	1.1%
6:18 PM	1.5%	0.7%	0.7%	0.4%	1.1%	0.7%	1.0%	0.7%
6:33 PM	1.3%	0.7%	0.7%	1.9%	1.7%	0.7%	1.4%	1.1%
6:48 PM	1.1%	1.2%	1.1%	1.7%	0.3%	0.6%	0.8%	0.8%
7:03 PM	1.4%	0.7%	0.7%	1.2%	5.5%	0.8%	1.2%	0.7%
7:18 PM	2.8%	1.8%	0.8%	1.3%	0.9%	0.9%	1.2%	0.8%
7:33 PM	0.7%	0.7%	0.7%	0.6%	1.5%	4.3%	0.3%	0.7%
7:48 PM	1.2%	0.8%	0.8%	1.4%	0.8%	0.8%	0.8%	0.7%

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

Run 2 Bag Leak Detection System

DATE: 4/19/05 Run 2 Time: 8:20 am - 4:08 pm

	Baghouse #1 Compartment							
Time	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
8:15 AM	0.8%	0.1%	0.6%	2.4%	2.5%	1.0%	0.8%	0.8%
8:30 AM	1.2%	0.9%	0.8%	3.0%	1.4%	1.2%	0.7%	1.0%
8:45 AM	2.8%	3.9%	1.3%	0.2%	1.3%	2.8%	1.7%	1.6%
9:00 AM	0.8%	0.8%	0.8%	1.4%	0.9%	2.6%	1.1%	0.6%
9:15 AM	0.8%	0.8%	0.1%	1.4%	0.5%	1.0%	1.6%	0.8%
9:30 AM	1.5%	0.1%	2.3%	1.0%	0.5%	0.8%	1.5%	0.8%
9:45 AM	1.0%	3.6%	2.3%	0.4%	2.1%	5.2%	1.5%	2.3%
10:00 AM	0.8%	3.0%	1.6%	0.3%	1.5%	0.6%	1.8%	0.8%
10:15 AM	1.0%	0.8%	0.8%	1.8%	0.4%	0.8%	0.2%	0.8%
10:30 AM	0.8%	0.8%	1.3%	0.1%	0.8%	0.8%	0.8%	0.8%
10:45 AM	0.8%	0.8%	0.8%	1.8%	0.7%	0.6%	0.4%	0.8%
11:00 AM	0.8%	0.9%	0.8%	1.9%	1.2%	1.4%	0.8%	1.2%
				TESTING SUSPENDED				
12:40 PM	0.7%	0.7%	0.7%	0.9%	1.4%	0.7%	1.2%	0.7%
12:55 PM	0.6%	1.1%	0.8%	1.7%	0.6%	0.8%	0.8%	0.8%
1:10 PM	1.0%	1.4%	0.5%	1.5%	2.3%	17.7%	0.8%	1.4%
1:25 PM	1.0%	1.6%	1.3%	0.7%	3.5%	4.5%	1.4%	1.5%
1:40 PM	0.8%	0.8%	0.8%	0.2%	2.2%	1.4%	1.6%	1.1%
1:55 PM	0.8%	1.4%	0.5%	3.0%	1.4%	1.1%	1.0%	0.8%
2:10 PM	0.8%	1.4%	0.9%	1.1%	1.1%	2.2%	1.2%	0.9%
2:25 PM	0.6%	0.8%	0.8%	1.4%	1.2%	2.9%	70.0%	1.4%
2:40 PM	6.2%	0.9%	3.4%	1.4%	1.2%	2.1%	0.7%	0.7%
2:55 PM	0.8%	0.8%	0.7%	1.0%	0.7%	2.7%	4.7%	0.4%
3:10 PM	0.6%	0.8%	0.8%	1.6%	0.7%	1.6%	1.0%	0.8%
3:25 PM	1.2%	2.0%	1.6%	3.2%	2.9%	2.7%	1.3%	1.1%
3:40 PM	0.8%	7.0%	3.1%	0.4%	2.4%	9.9%	1.8%	1.2%
3:55 PM	1.9%	1.0%	1.8%	0.9%	1.2%	2.0%	2.3%	0.8%
4:10 PM	0.6%	1.0%	3.8%	1.7%	1.2%	9.4%	6.9%	0.6%

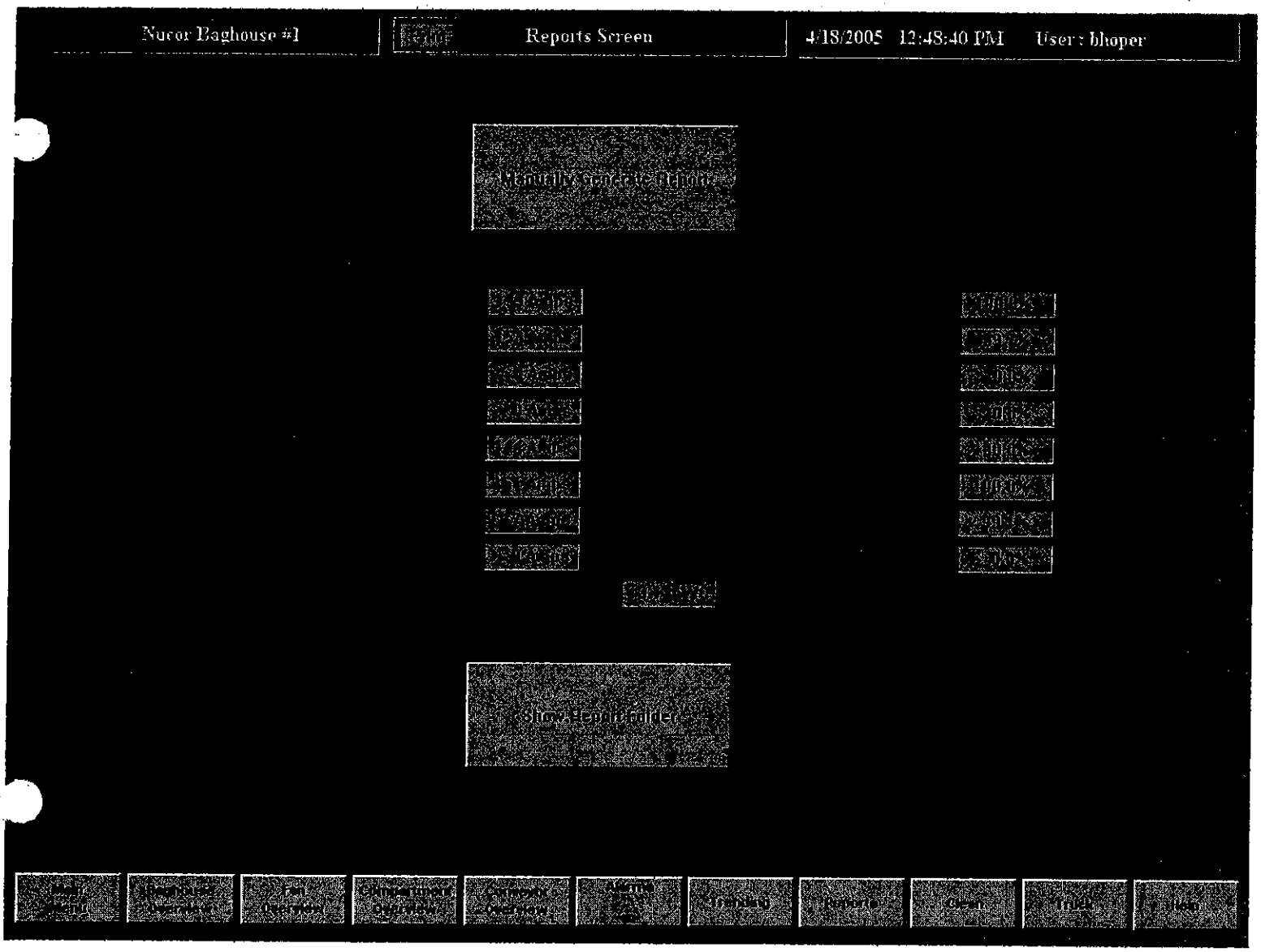
Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #1

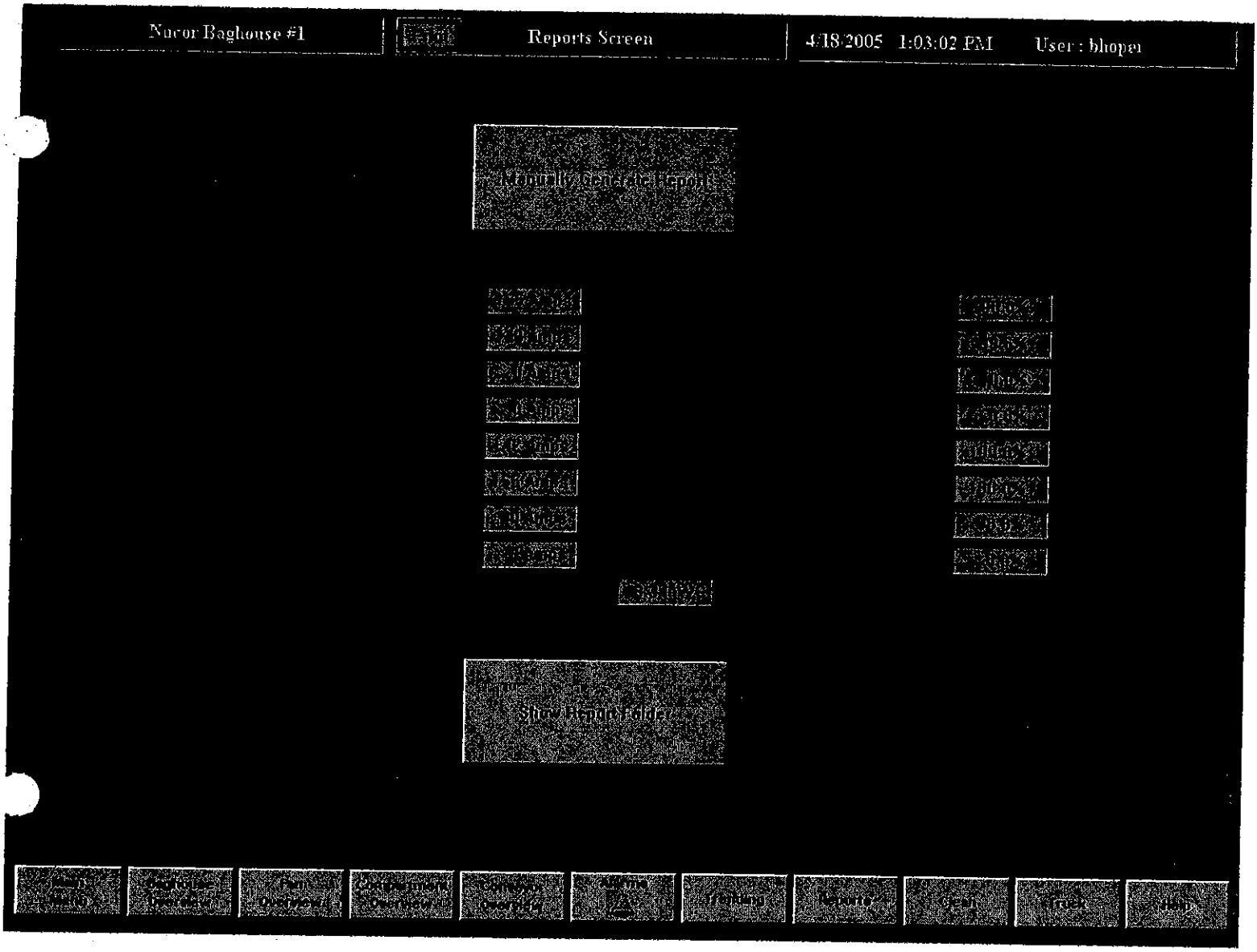
Run 3 Bag Leak Detection System

DATE: 4/22/05 Run 3 Time: 8:33 am - 2:14 pm

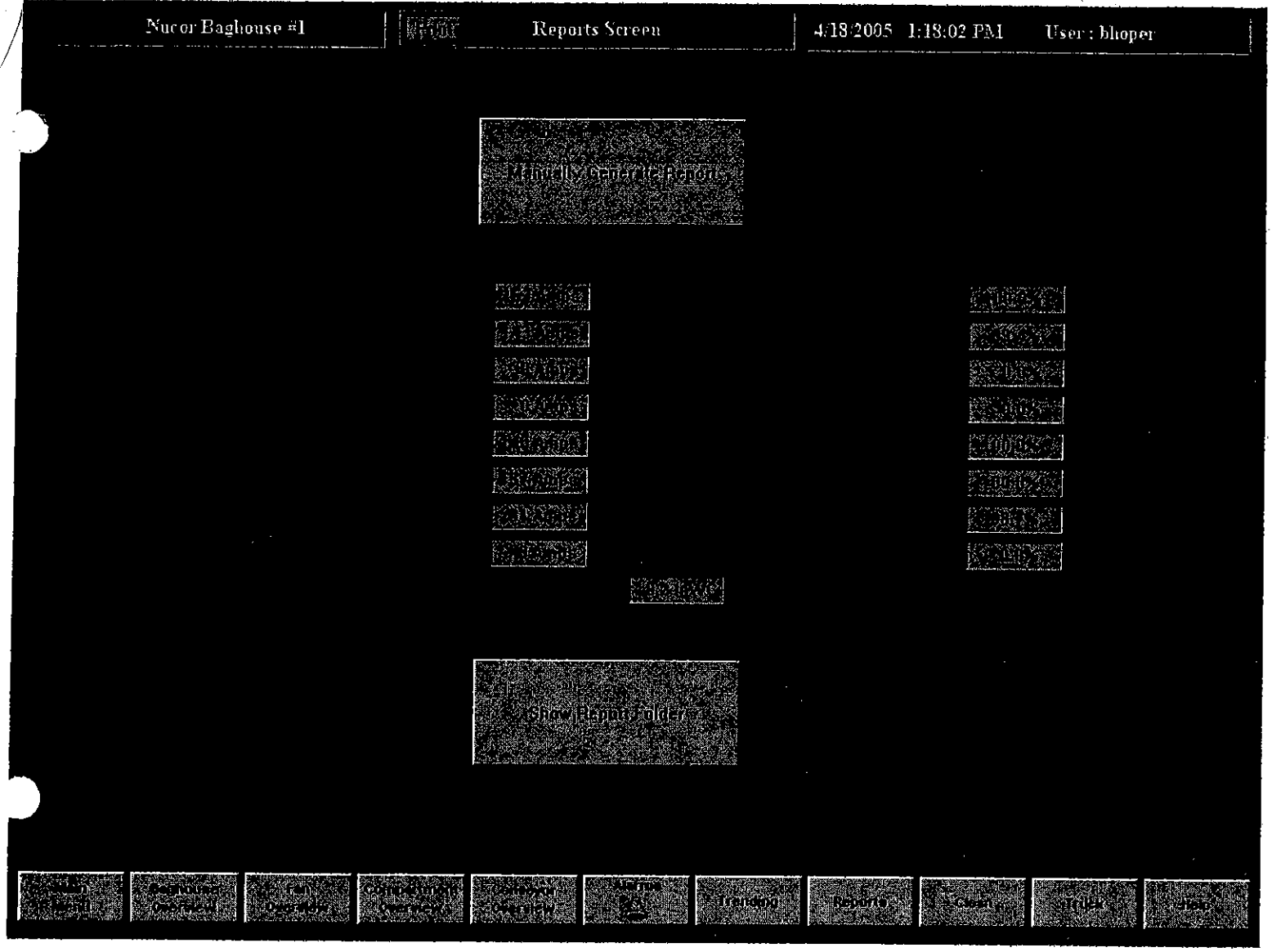
	Baghouse #1 Compartment							
Time	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
8:33 AM	0.7%	0.7%	0.7%	0.4%	0.6%	0.6%	0.7%	0.7%
8:48 AM	1.0%	4.2%	1.3%	0.5%	0.8%	3.9%	1.0%	3.3%
9:03 AM	0.4%	2.4%	0.9%	0.6%	0.2%	0.1%	0.6%	0.8%
9:18 AM	0.8%	0.7%	0.7%	0.8%	0.3%	0.3%	0.7%	0.8%
9:33 AM	0.6%	2.7%	1.7%	2.6%	1.4%	5.0%	1.2%	1.1%
9:48 AM	0.5%	1.5%	0.7%	0.3%	0.3%	26.3%	0.2%	0.7%
10:03 AM	0.7%	0.7%	0.7%	6.5%	1.2%	1.0%	0.7%	0.8%
10:18 AM	0.7%	0.6%	1.2%	0.8%	0.4%	0.0%	0.2%	0.7%
10:33 AM	2.6%	1.0%	0.8%	2.2%	0.7%	0.8%	0.8%	0.7%
10:48 AM	0.8%	0.9%	1.0%	1.9%	0.8%	2.0%	0.9%	0.8%
				TESTING SUSPENDED				
11:30 AM	0.7%	0.5%	1.1%	2.0%	0.5%	0.8%	2.4%	1.2%
11:45 AM	2.4%	1.0%	0.7%	3.9%	0.0%	1.0%	1.0%	1.0%
12:00 PM	0.7%	0.7%	0.7%	4.7%	1.1%	0.5%	0.7%	0.7%
12:15 PM	0.7%	1.0%	0.7%	0.6%	0.8%	0.7%	1.8%	0.7%
12:30 PM	0.8%	0.7%	0.7%	2.4%	1.0%	0.4%	0.5%	0.7%
12:45 PM	0.7%	0.7%	3.3%	0.4%	0.7%	0.7%	0.7%	0.7%
1:00 PM	1.0%	0.8%	2.7%	0.7%	0.8%	0.9%	1.2%	0.9%
1:15 PM	0.0%	0.7%	3.4%	4.6%	0.4%	1.0%	1.8%	0.8%
1:30 PM	0.7%	0.7%	3.0%	1.0%	0.2%	0.7%	0.7%	0.7%
1:45 PM	7.6%	0.5%	0.7%	0.8%	0.1%	0.2%	0.1%	0.7%
2:00 PM	1.1%	1.9%	1.7%	0.5%	1.7%	4.1%	1.1%	1.3%
2:15 PM	0.8%	1.0%	1.1%	5.5%	1.5%	3.6%	1.8%	1.5%


Nucor Baghouse #1
Reports Screen
4/18/2005 12:48:40 PM
User: bhoper

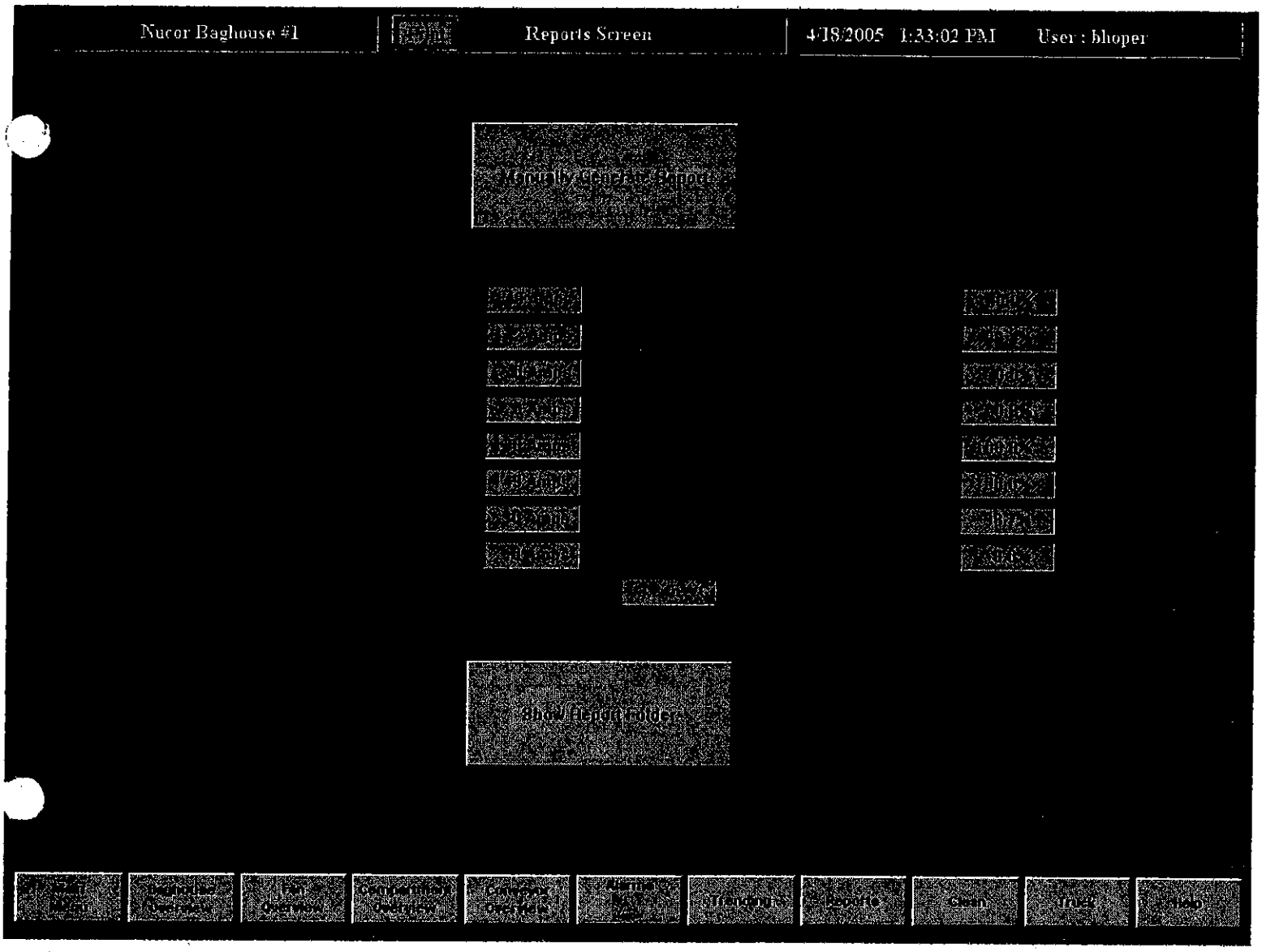
DP 7.5


Nucor Baghouse #1
Reports Screen
4/18/2005 1:03:02 PM
User : bhoper

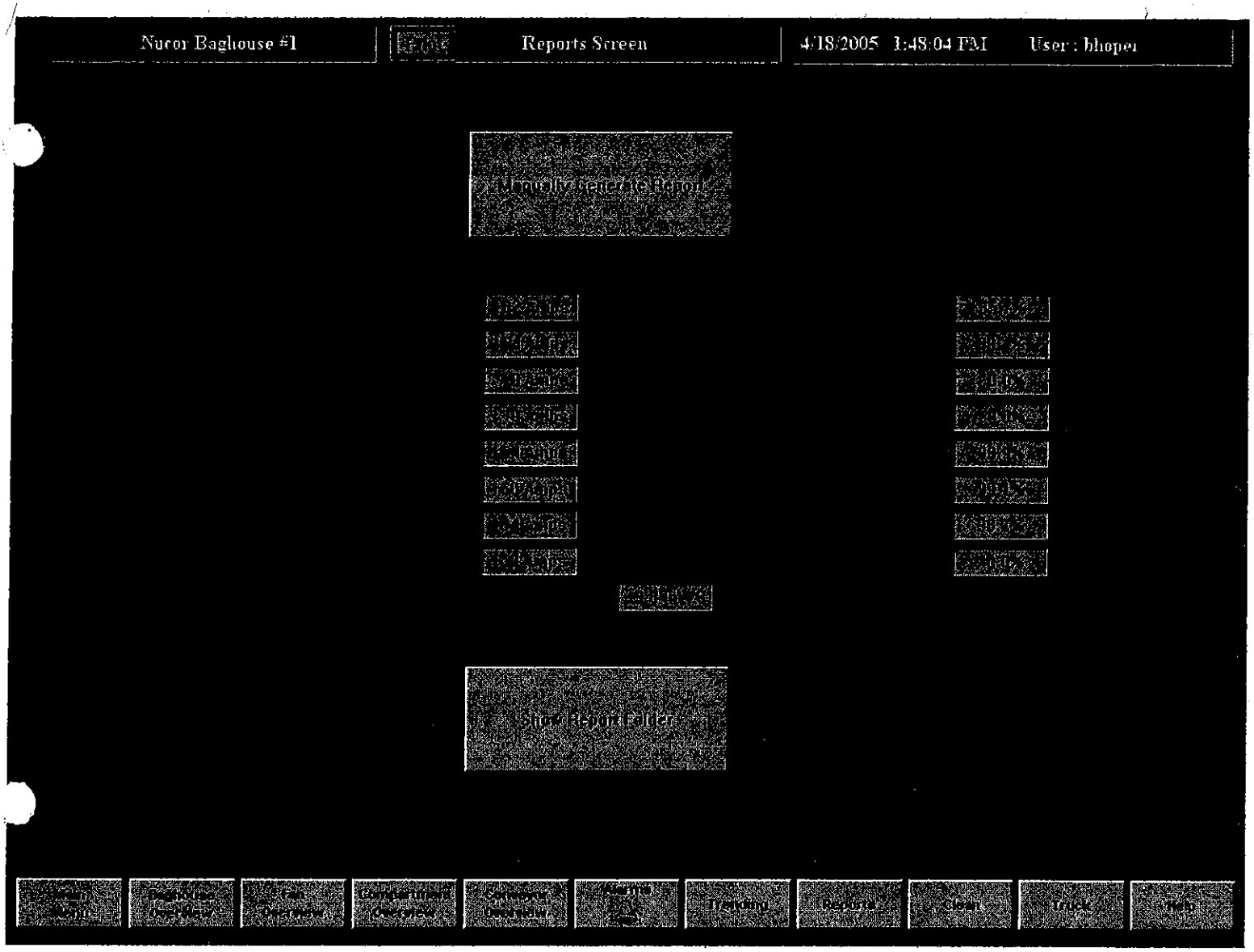
OP - 7.6


Nucor Baghouse #1
Reports Screen
4/18/2005 1:18:02 PM
User : bhoper
Manually Generate Report
Show Report Folder

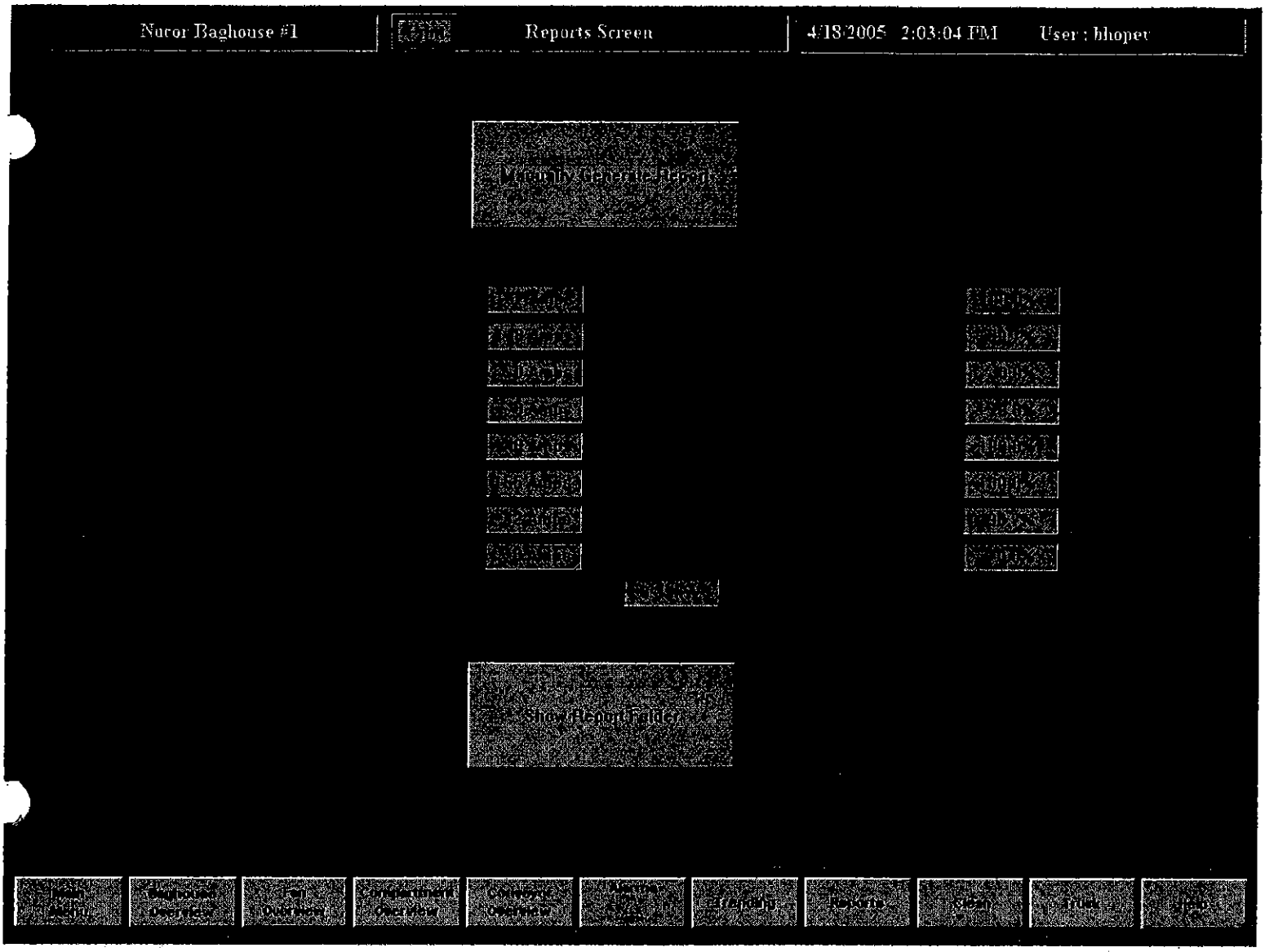
DP 7.7


Nucor Baghouse #1
Reports Screen
4/18/2005 1:33:02 PM
User : bhoper

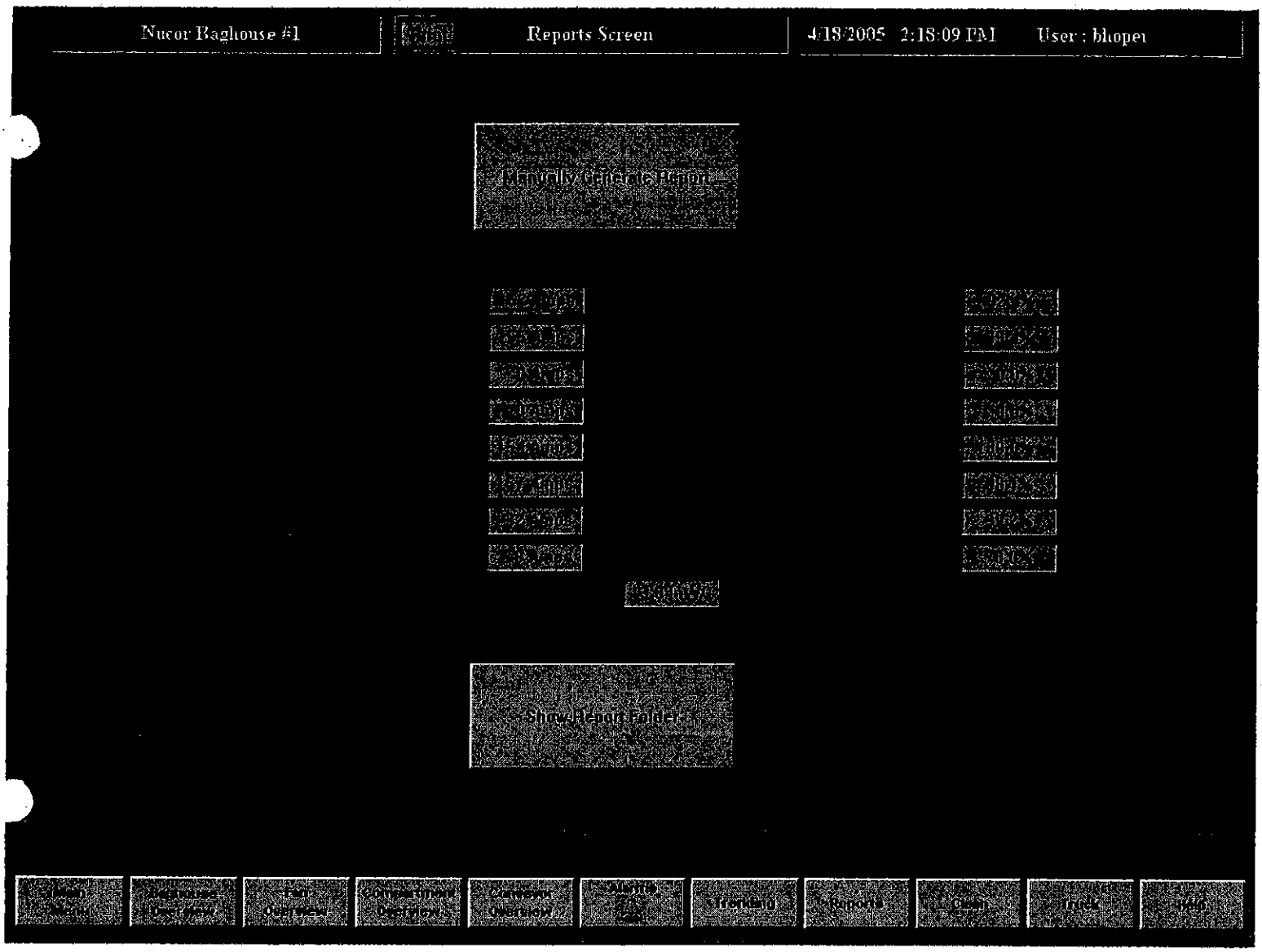
OP - 8.0


Nucor Baghouse #1
Reports Screen
4/18/2005 1:48:04 PM
User : bhoper
Manually Generate Report
Show Report Folder
Trending
Reports
Close
Trends
Help

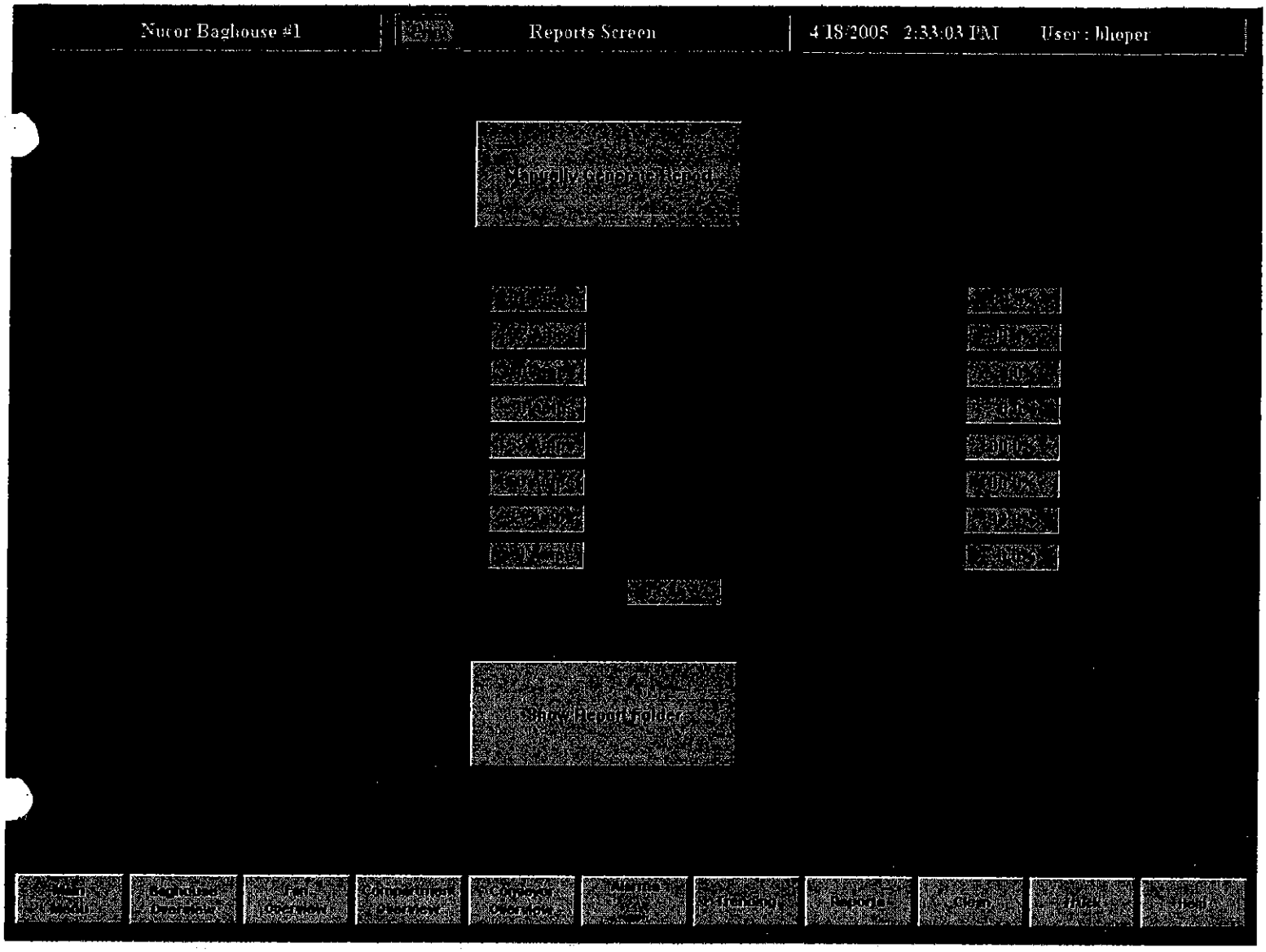
DP-7.6


Nucor Baghouse #1
Reports Screen
4/18/2005 2:03:04 PM
User : bhoper

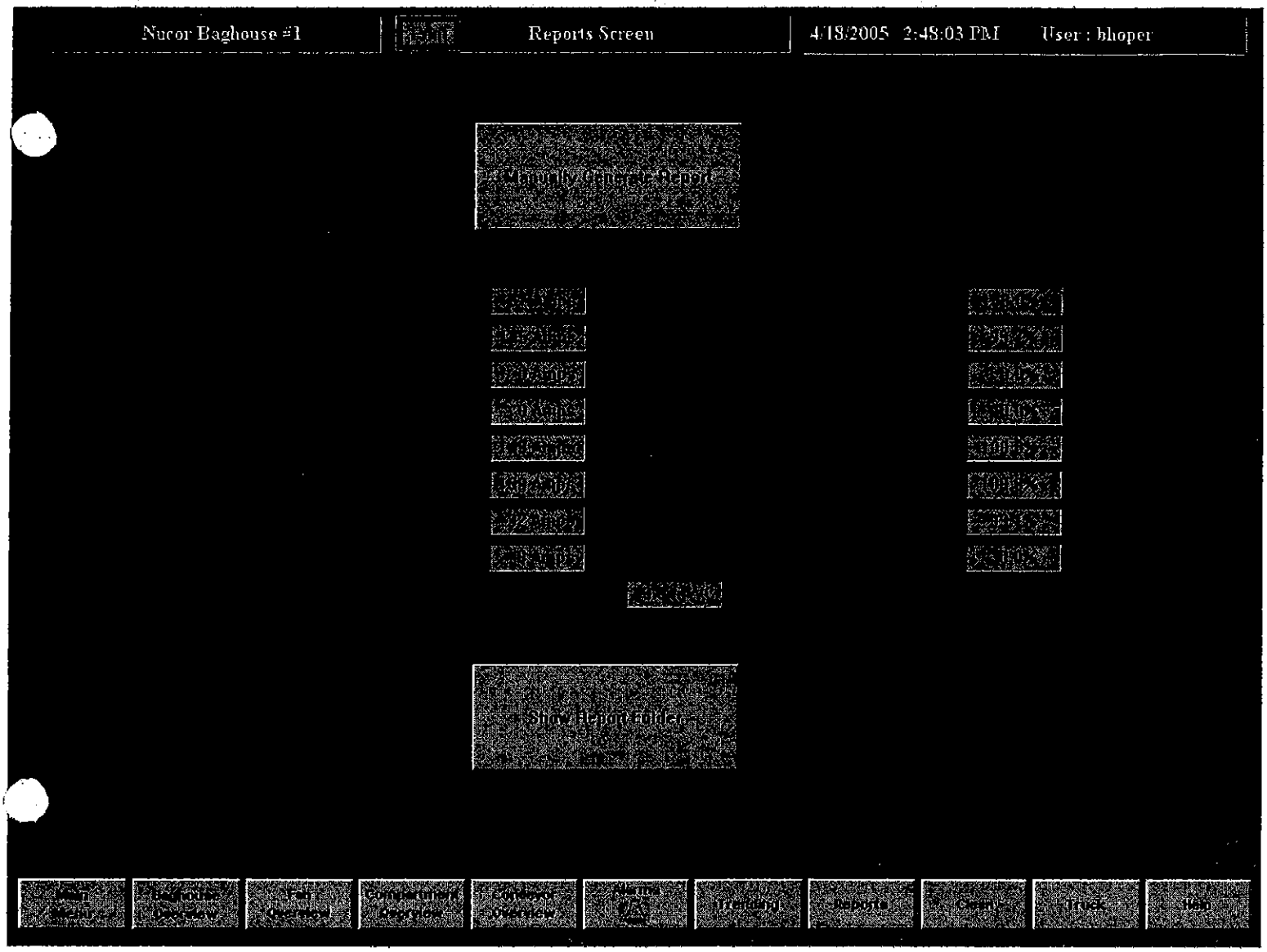
OP 7.3


Nucor Baghouse #1
Reports Screen
4/18/2005 2:18:09 PM
User : bhoper
Trends
Reports
Help

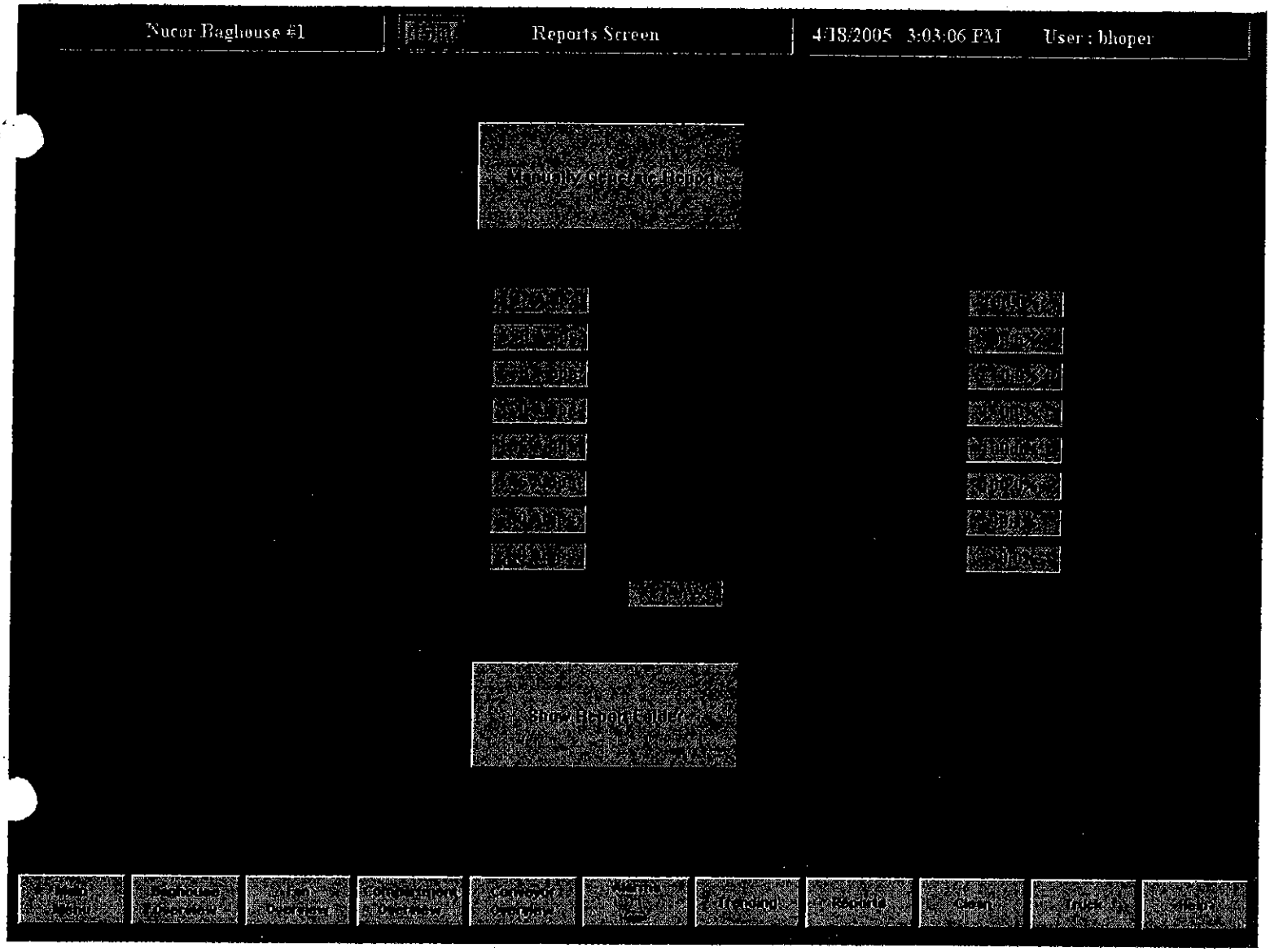
OP 7.6


Nucor Baghouse #1
Reports Screen
4/18/2005 2:33:03 PM
User : bhoper

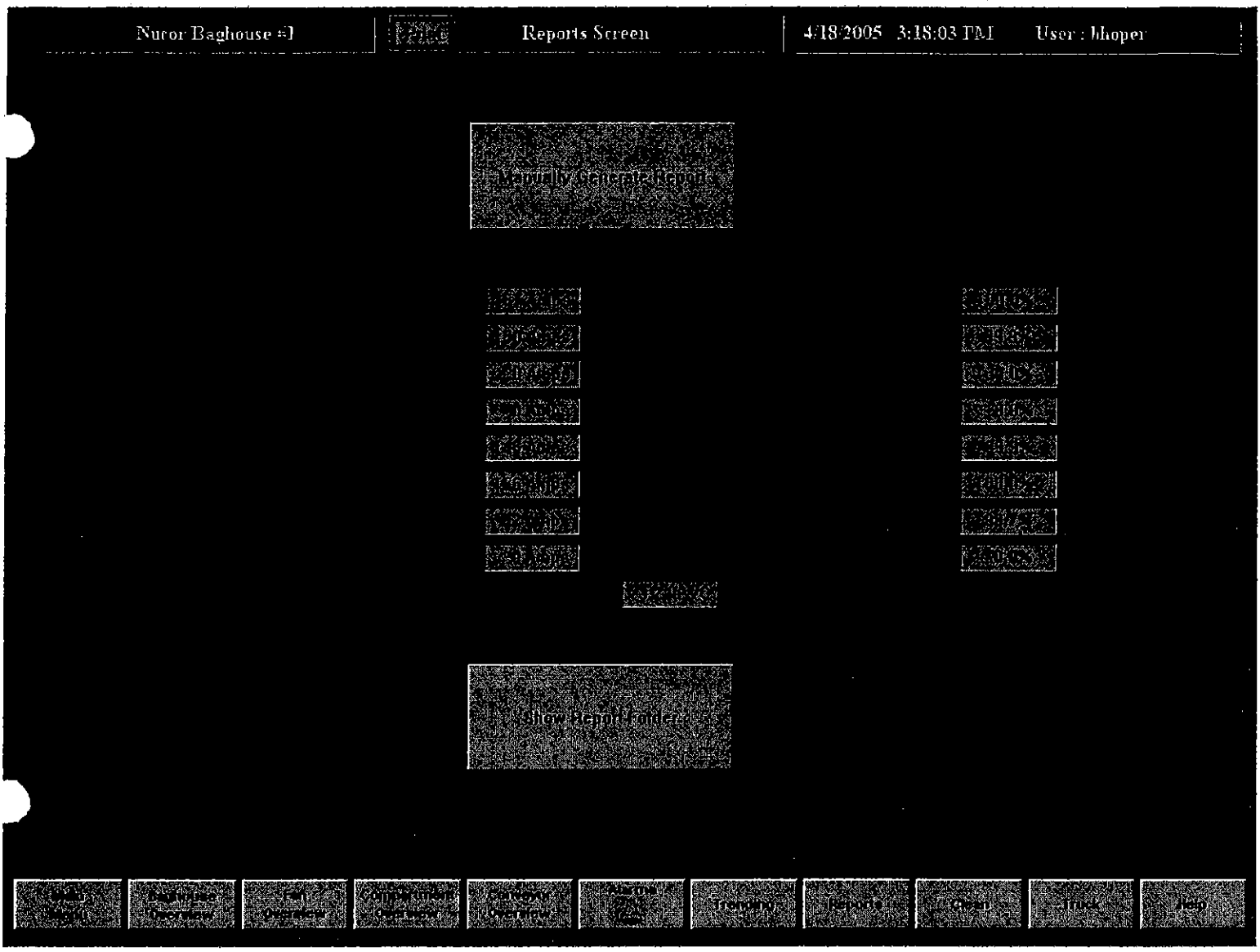
OP - 7.2


Nucor Baghouse #1
Reports Screen
4/18/2005 2:48:03 PM
User : bhoper
Show Report Folder...

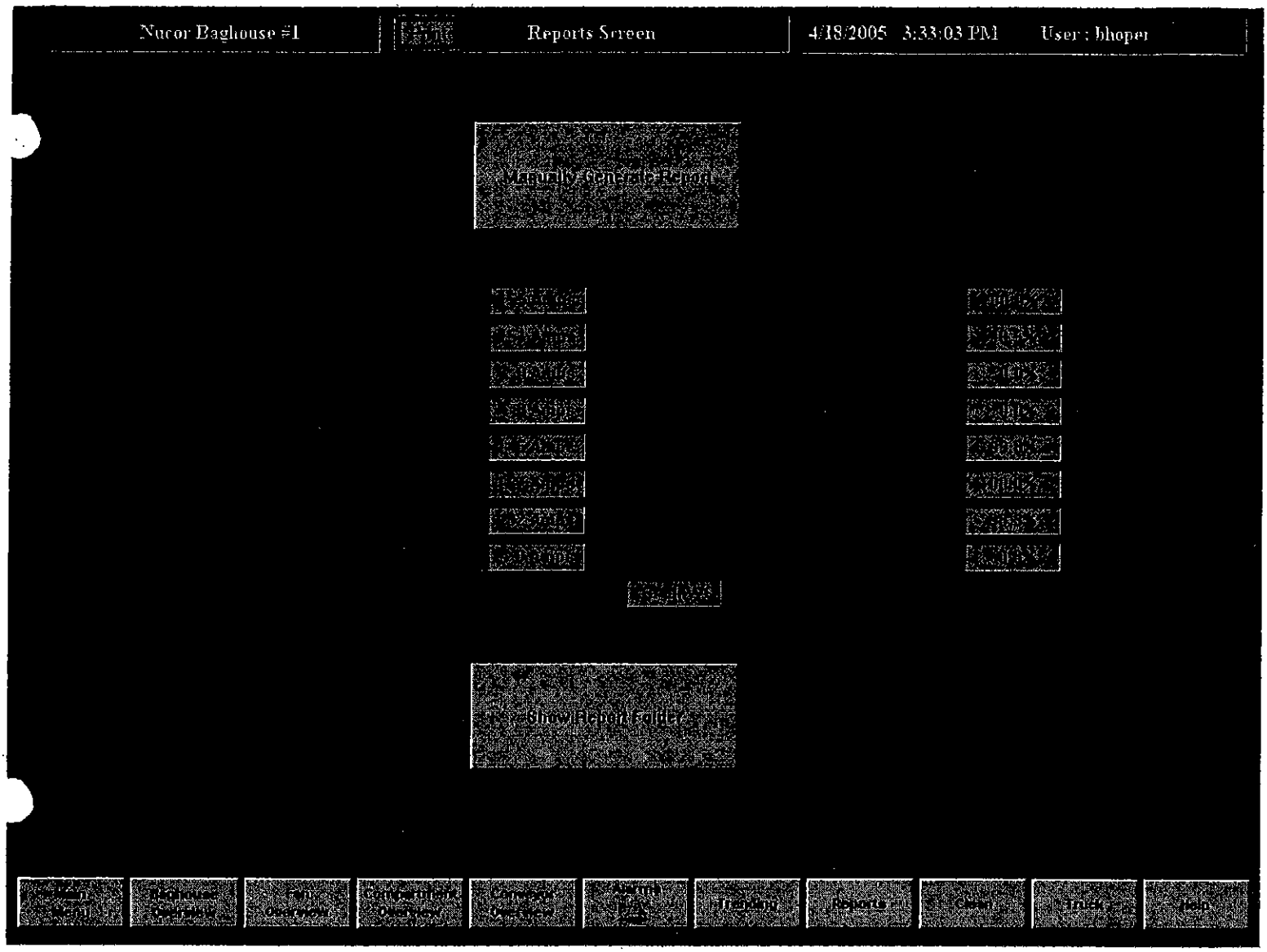
DP 8.0


Nucor Baghouse #1
Reports Screen
4/18/2005 3:03:06 PM
User : bhoper

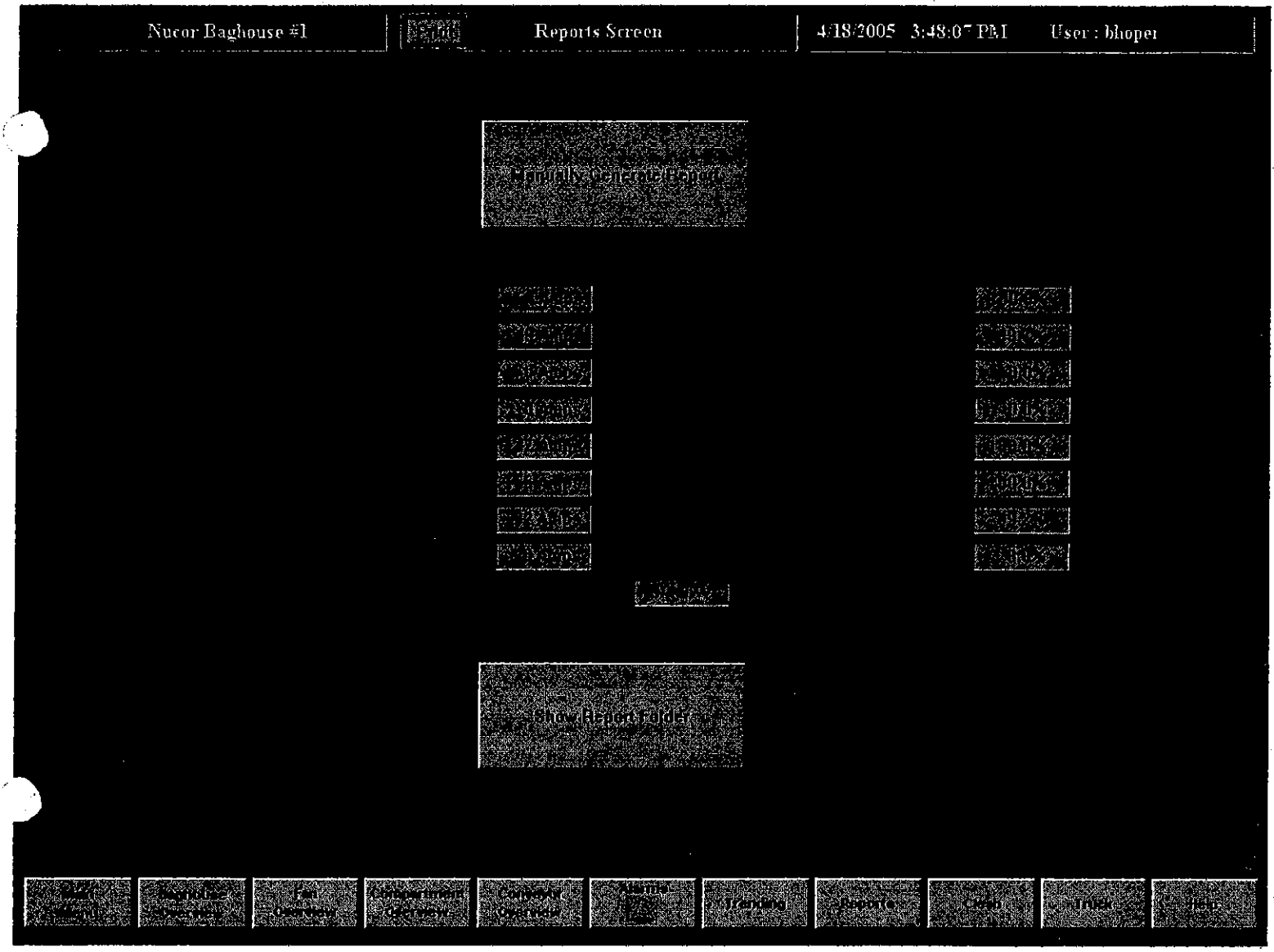
DP - 7.7


Nucor Baghouse #1
Reports Screen
4/18/2005 3:18:03 PM
User : bhoper
Trending
Reports
Help

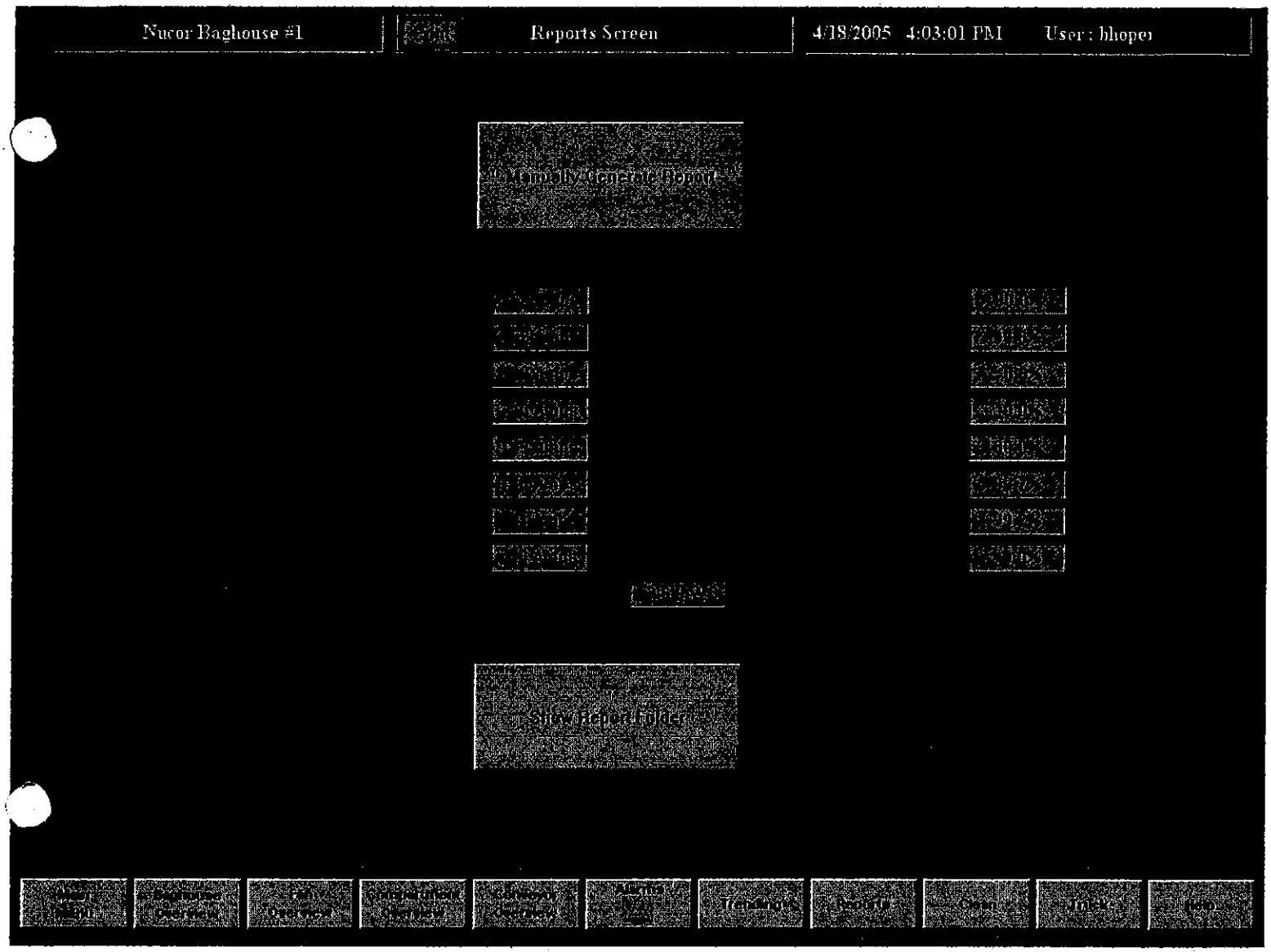
DP - 7.8


Nucor Baghouse #1
Reports Screen
4/18/2005 3:33:03 PM
User : bhoper
Manually Generate Report
Show Report Folder

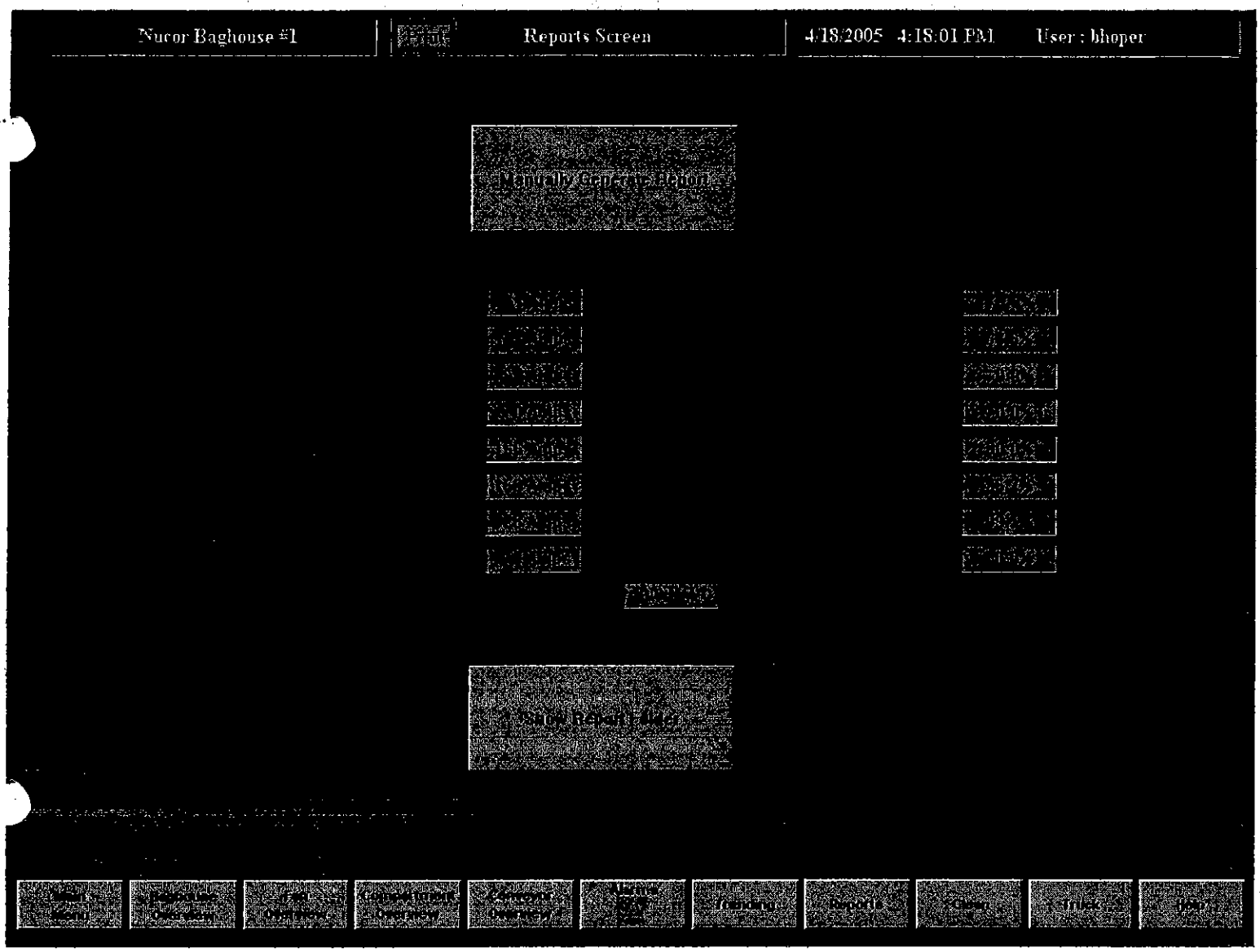
DP - 7.8


Nucor Baghouse #1
Reports Screen
4/18/2005 3:48:07 PM
User : bhoper
Show Report Folder
Trends
Reports

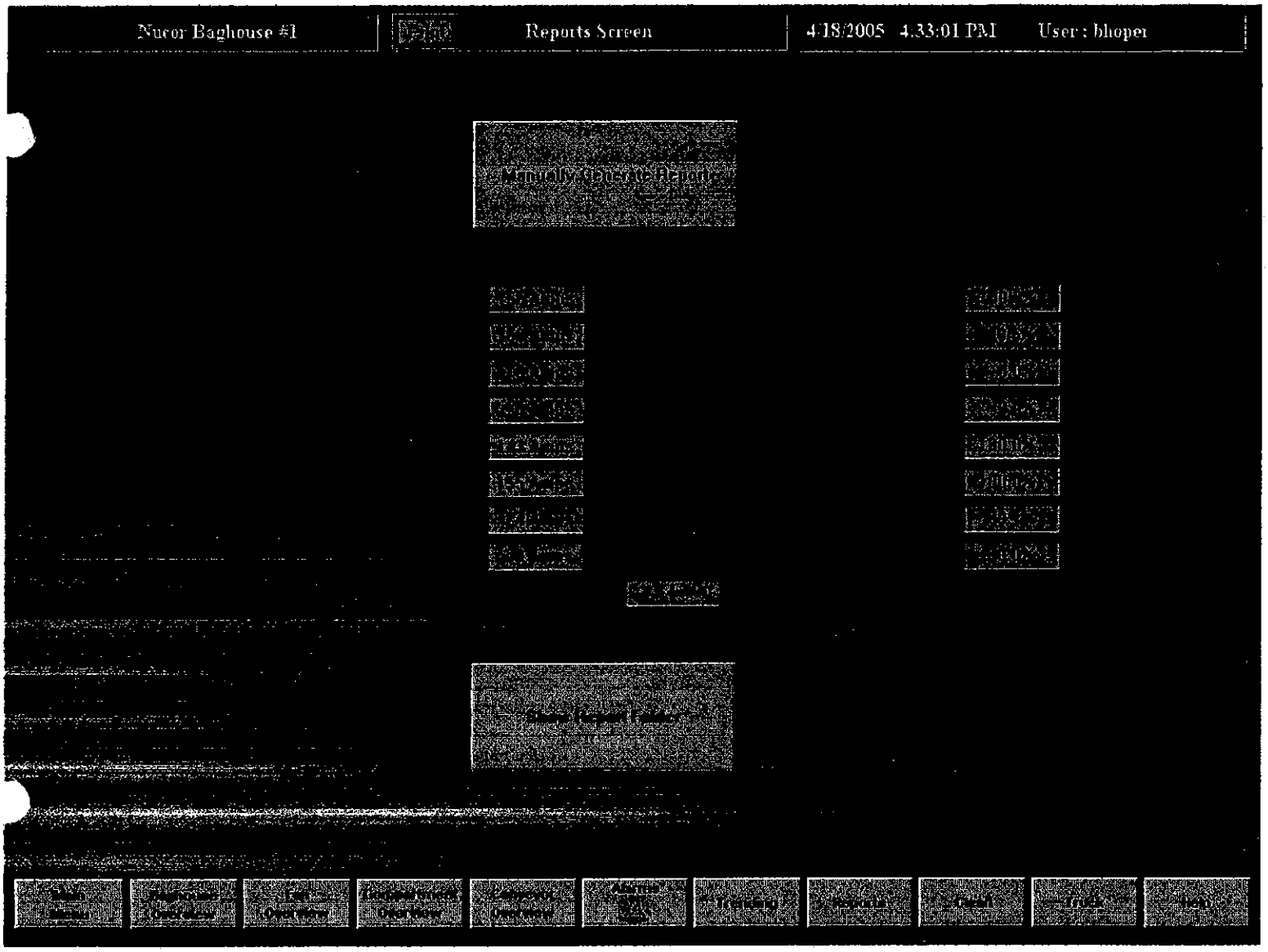
DP - 7.8


Nucor Baghouse #1
Reports Screen
4/18/2005 4:03:01 PM
User : bhopes

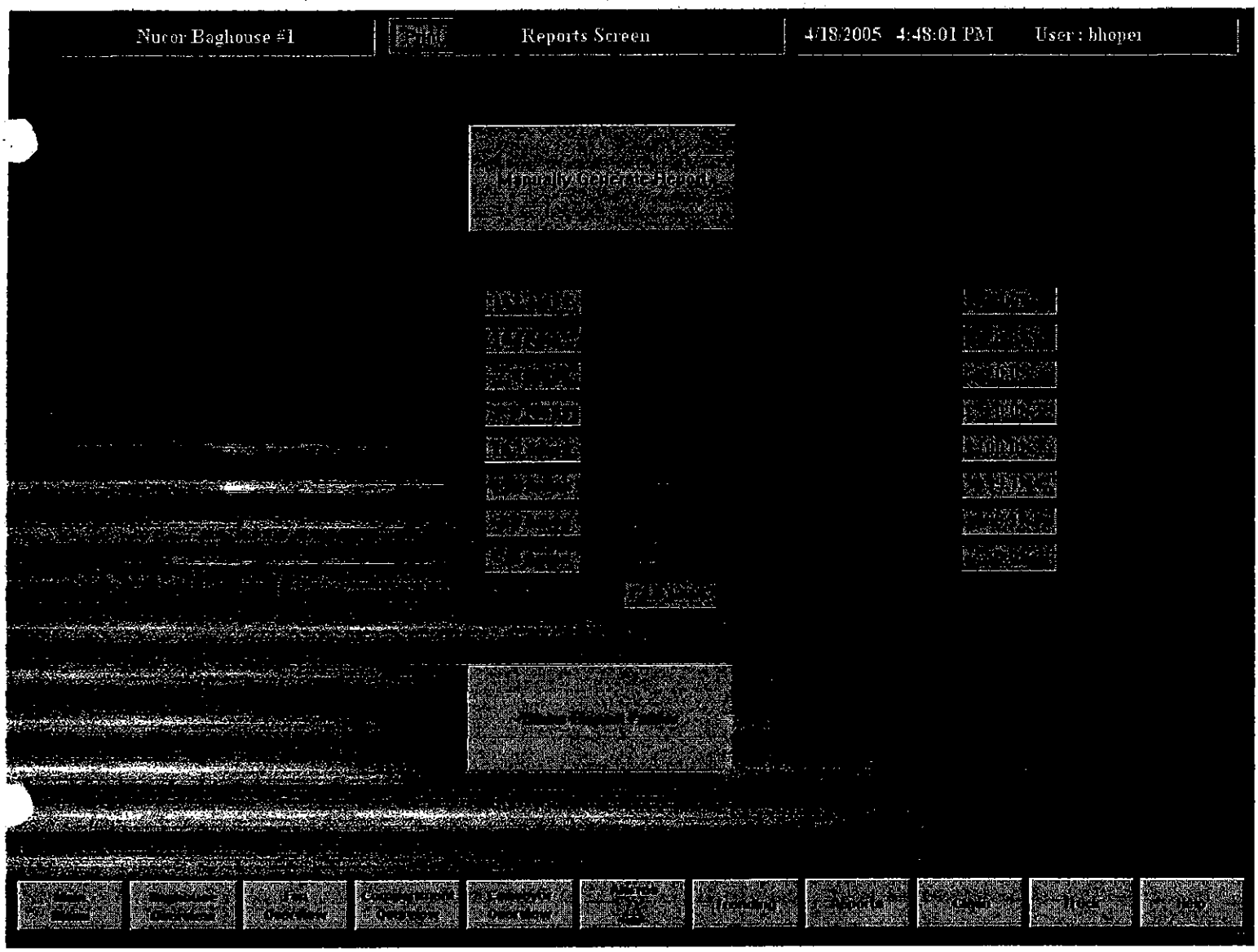
DP 7.2


Nucor Baghouse #1
Reports Screen
4/18/2005 4:18:01 PM
User : bhoper

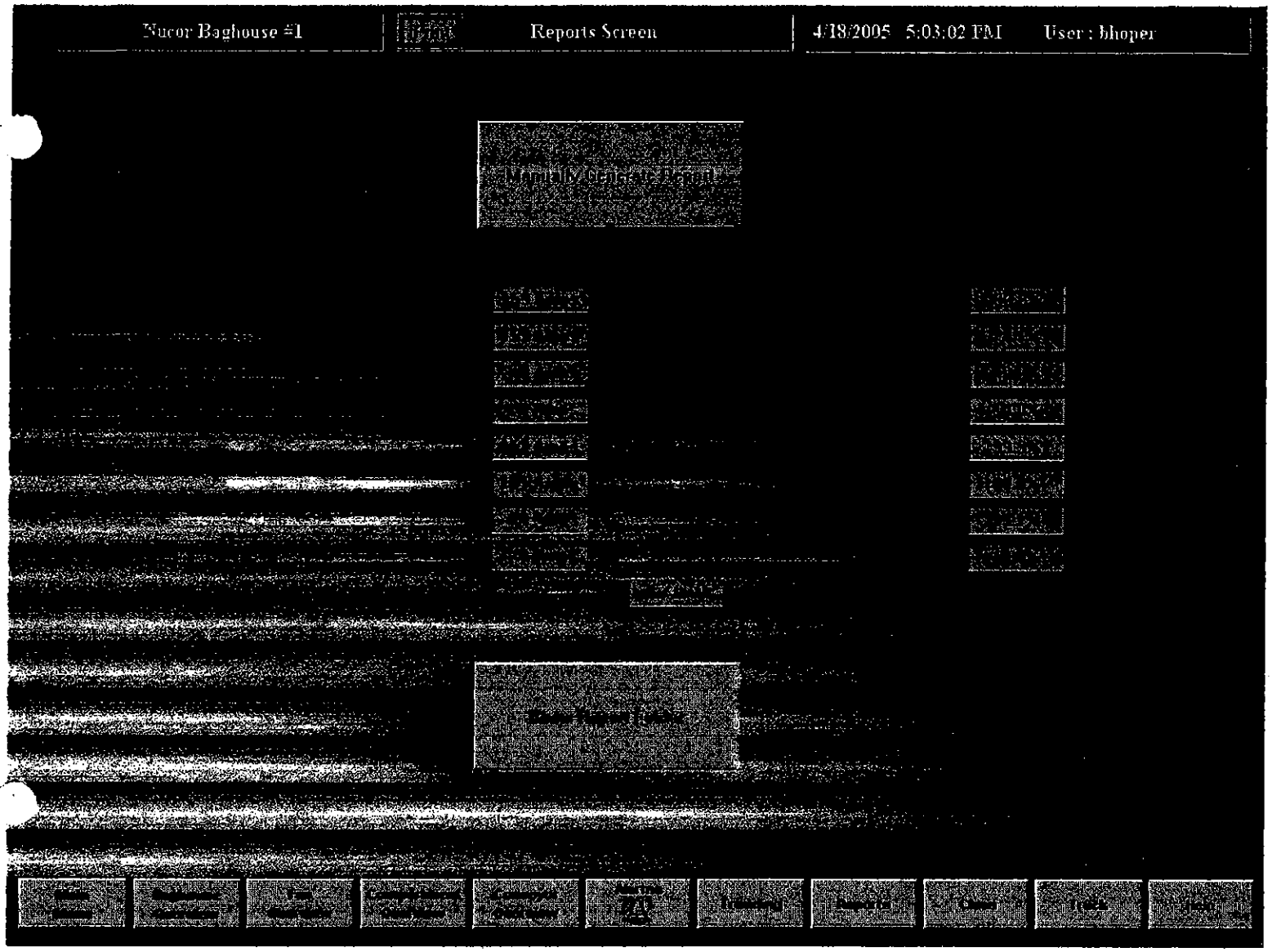
DP 7/6


Nucor Baghouse #1
Reports Screen
4/18/2005 4:33:01 PM
User : bhoper

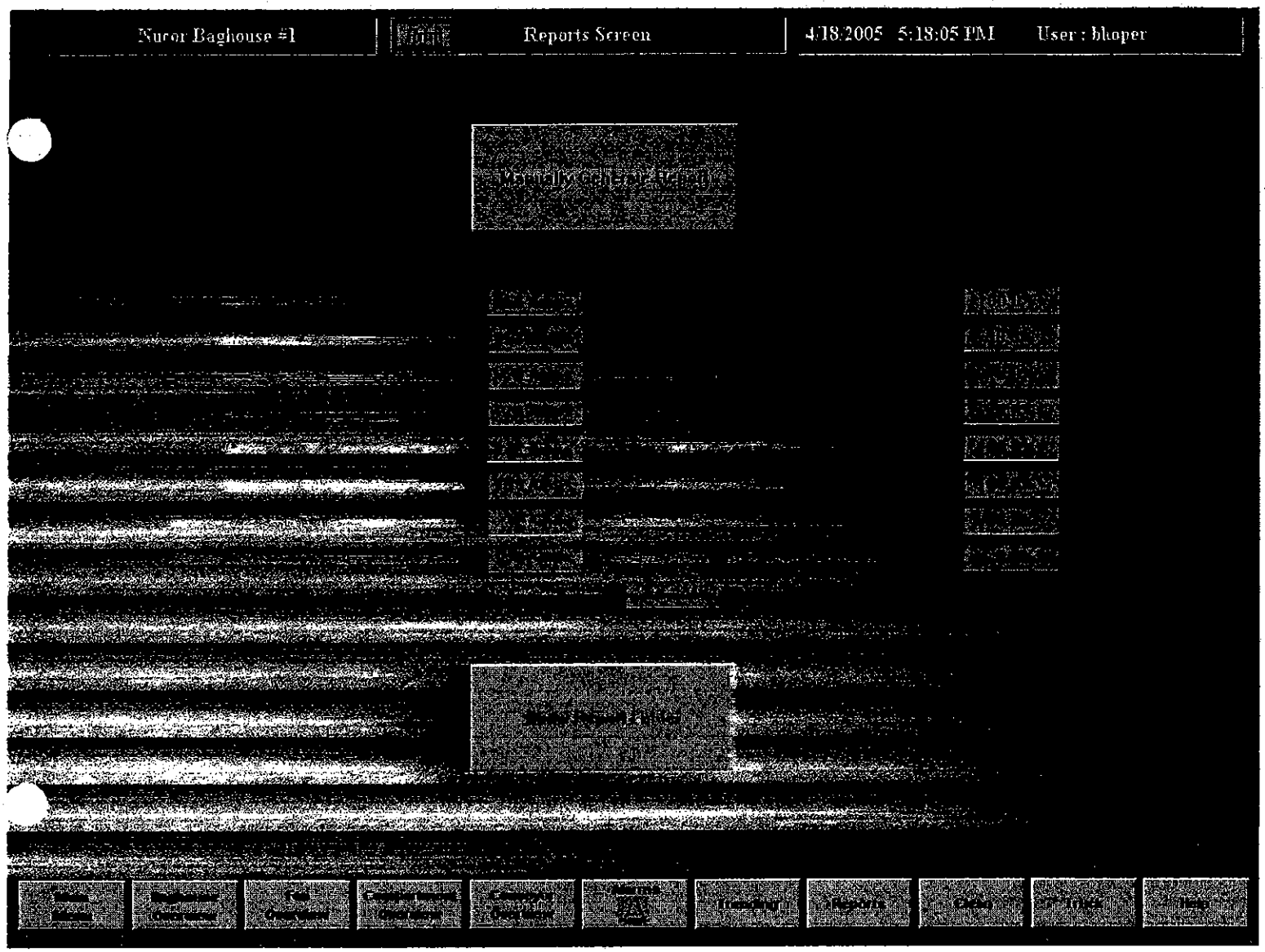
DP 7.8


Nucor Baghouse #1
Reports Screen
4/18/2005 4:48:01 PM
User : bhoper

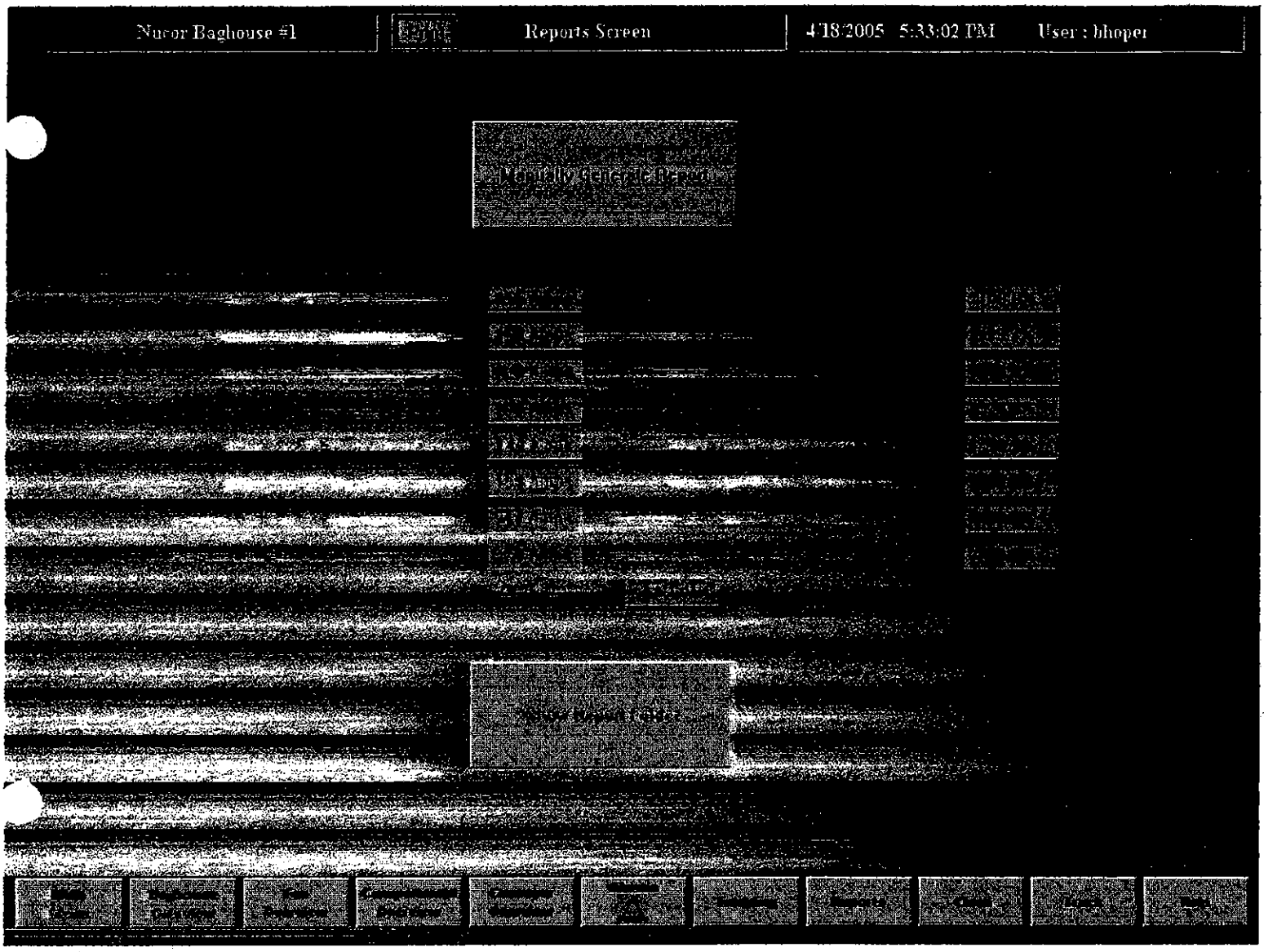
DP 7.8


Nucor Baghouse #1
Reports Screen
4/18/2005 5:03:02 PM
User : bhoper

DP 7.6


Nucor Baghouse #1
Reports Screen
4/18/2005 5:18:05 PM
User : bhoper

DP 7.7


Nucor Baghouse #1
Reports Screen
4/18/2005 5:33:02 PM
User : bhoper

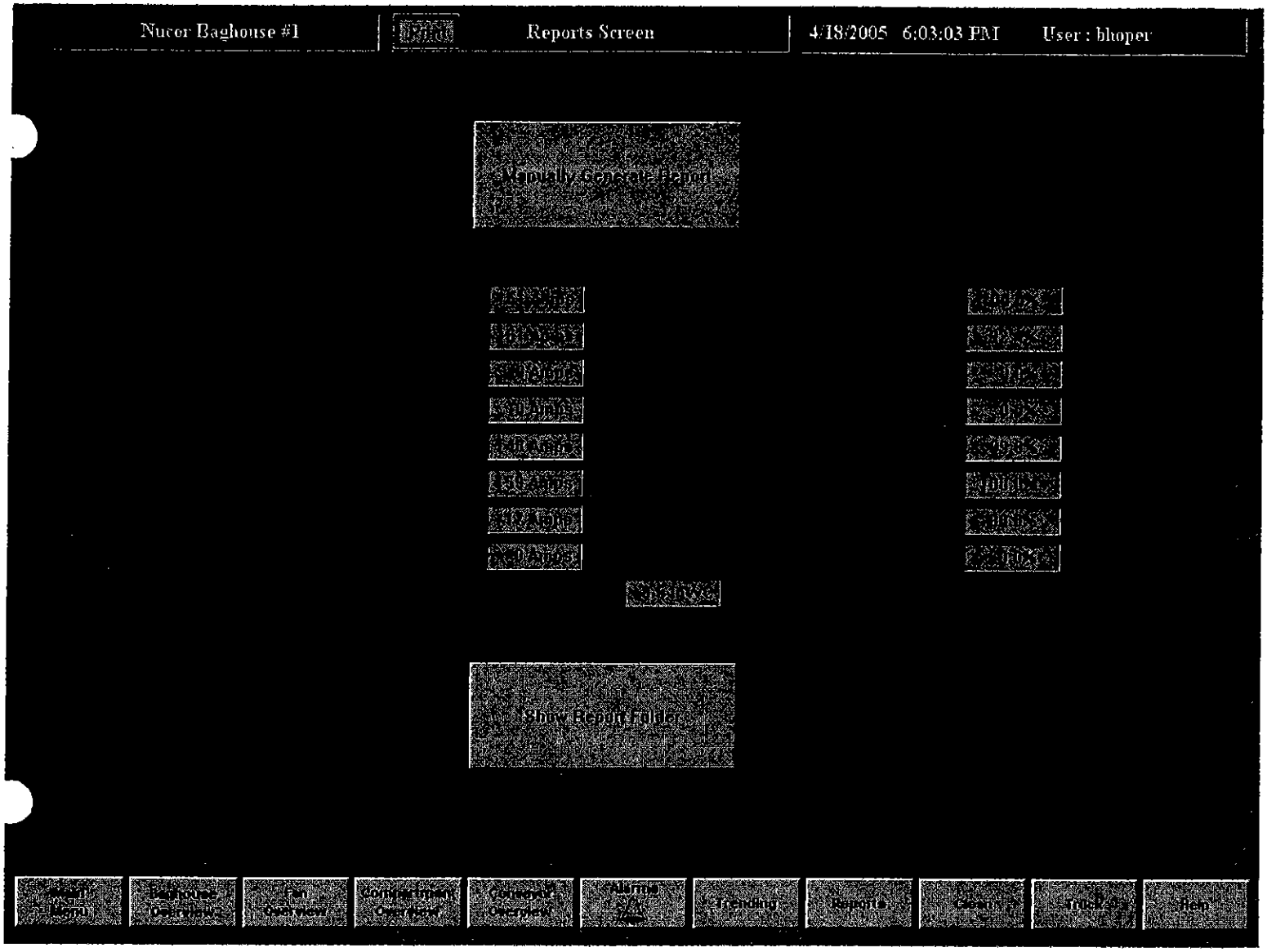
DP 8.3

5:48 pm 4-18-05

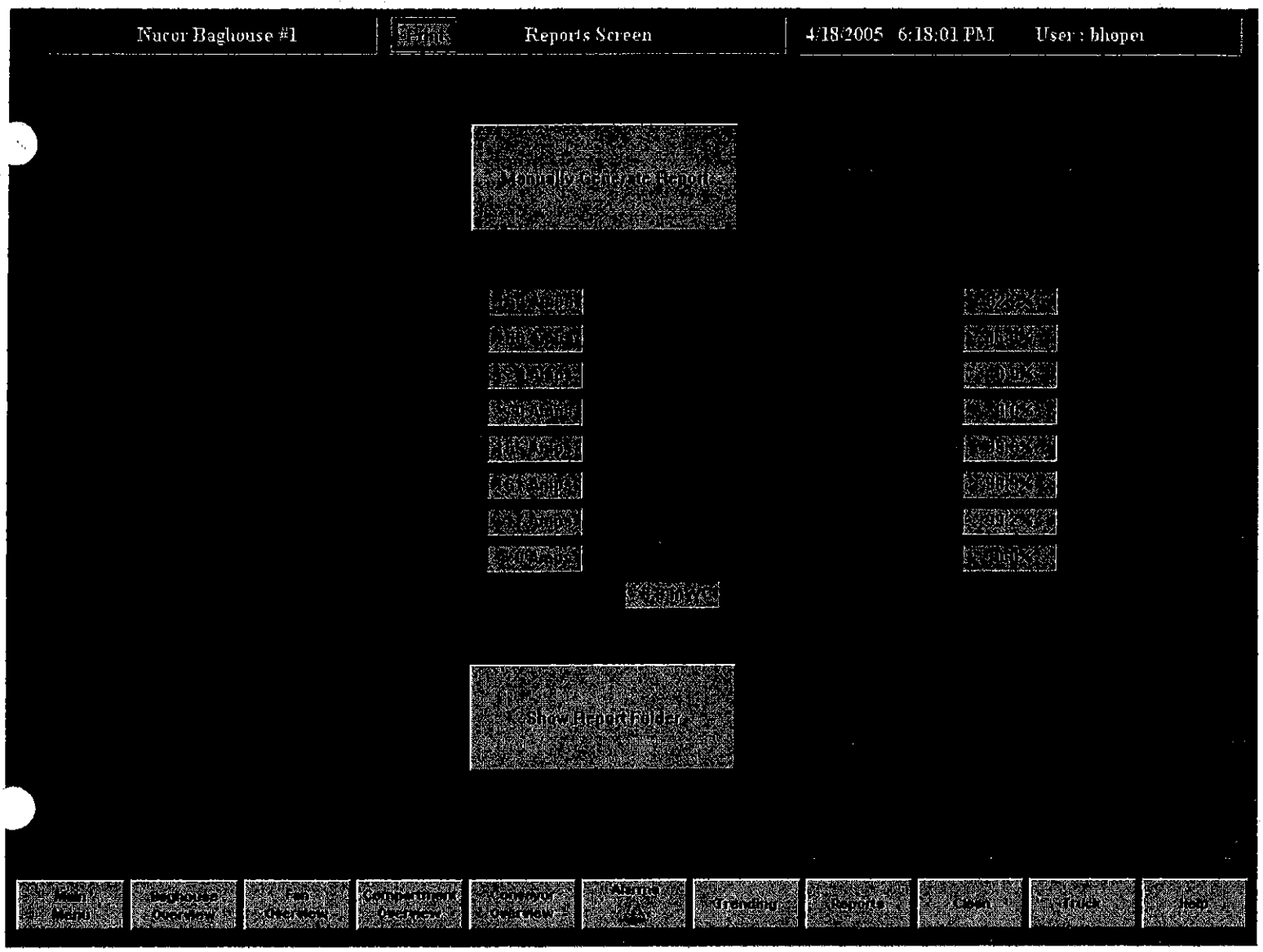
#1	161	84 %
#2	160	67%
#5	155	99%
#6	160	100%
RA	17	99%

DP 7.6

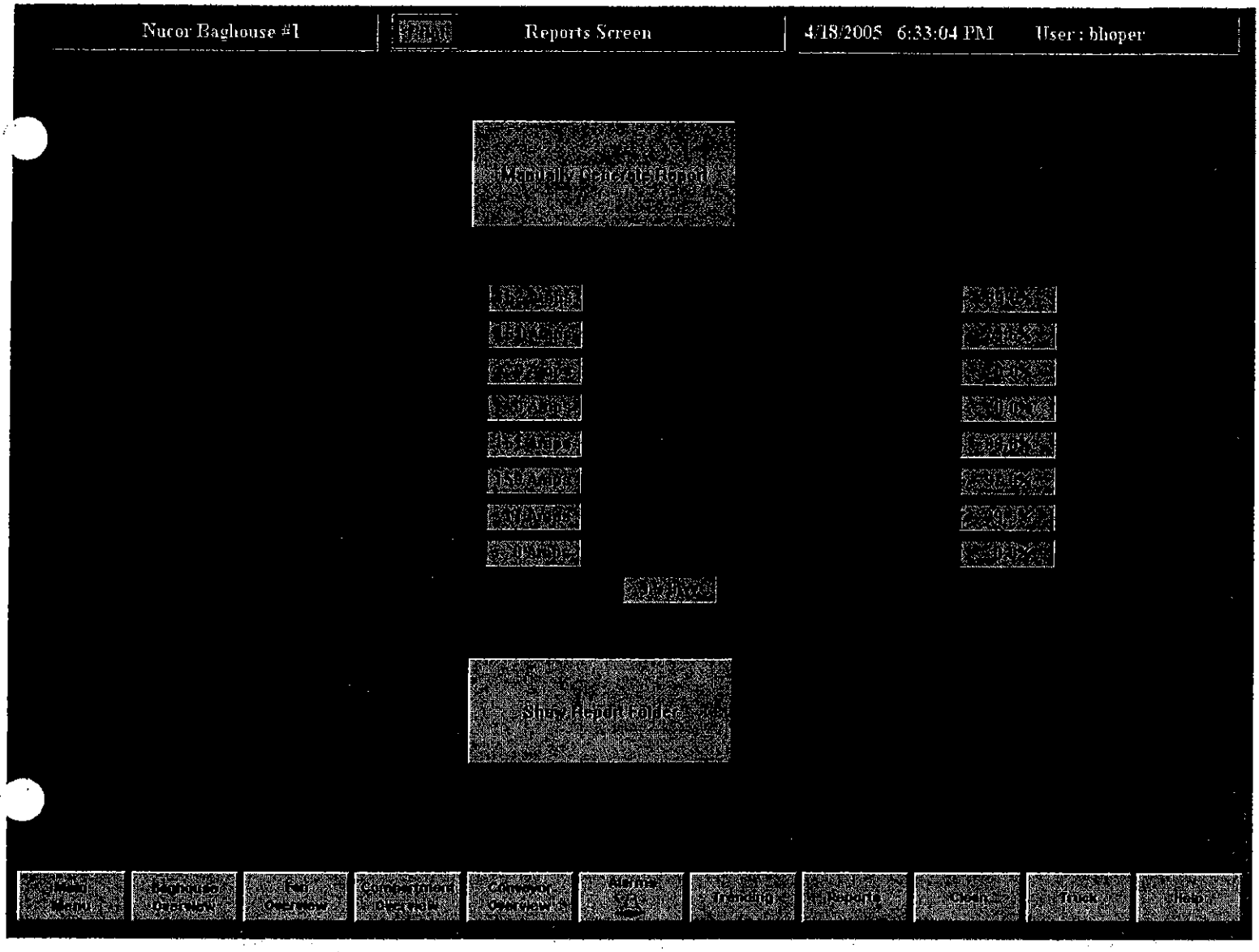
Chary ink


Nucor Baghouse #1
Reports Screen
4/18/2005 6:03:03 PM
User : bhoper
Manually Generate Report
Show Report Folder
Alarms
Trending
Reports

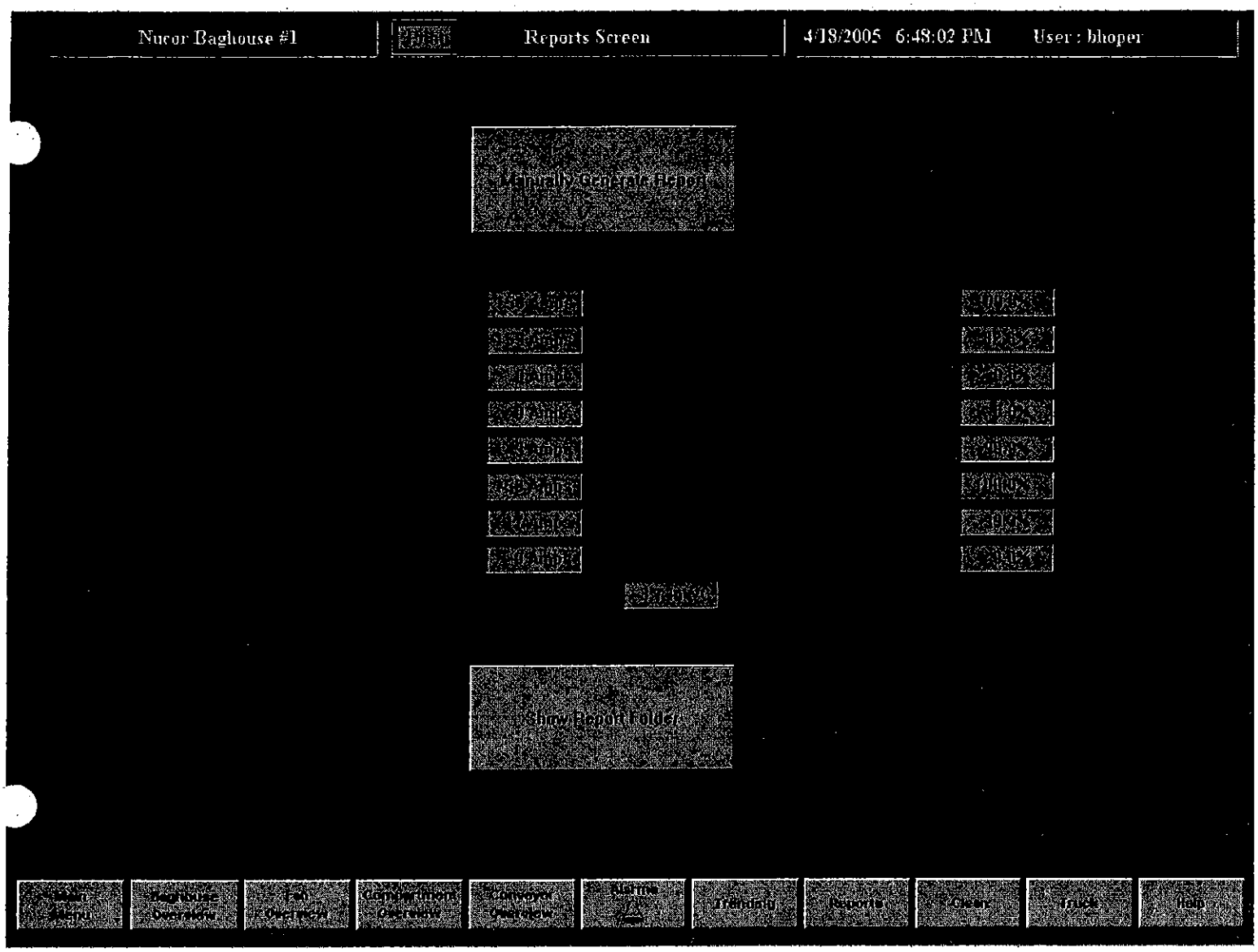
DP 7.6


Nucor Baghouse #1
Reports Screen
4/18/2005 6:18:01 PM
User : bhoper
Show Report Folder

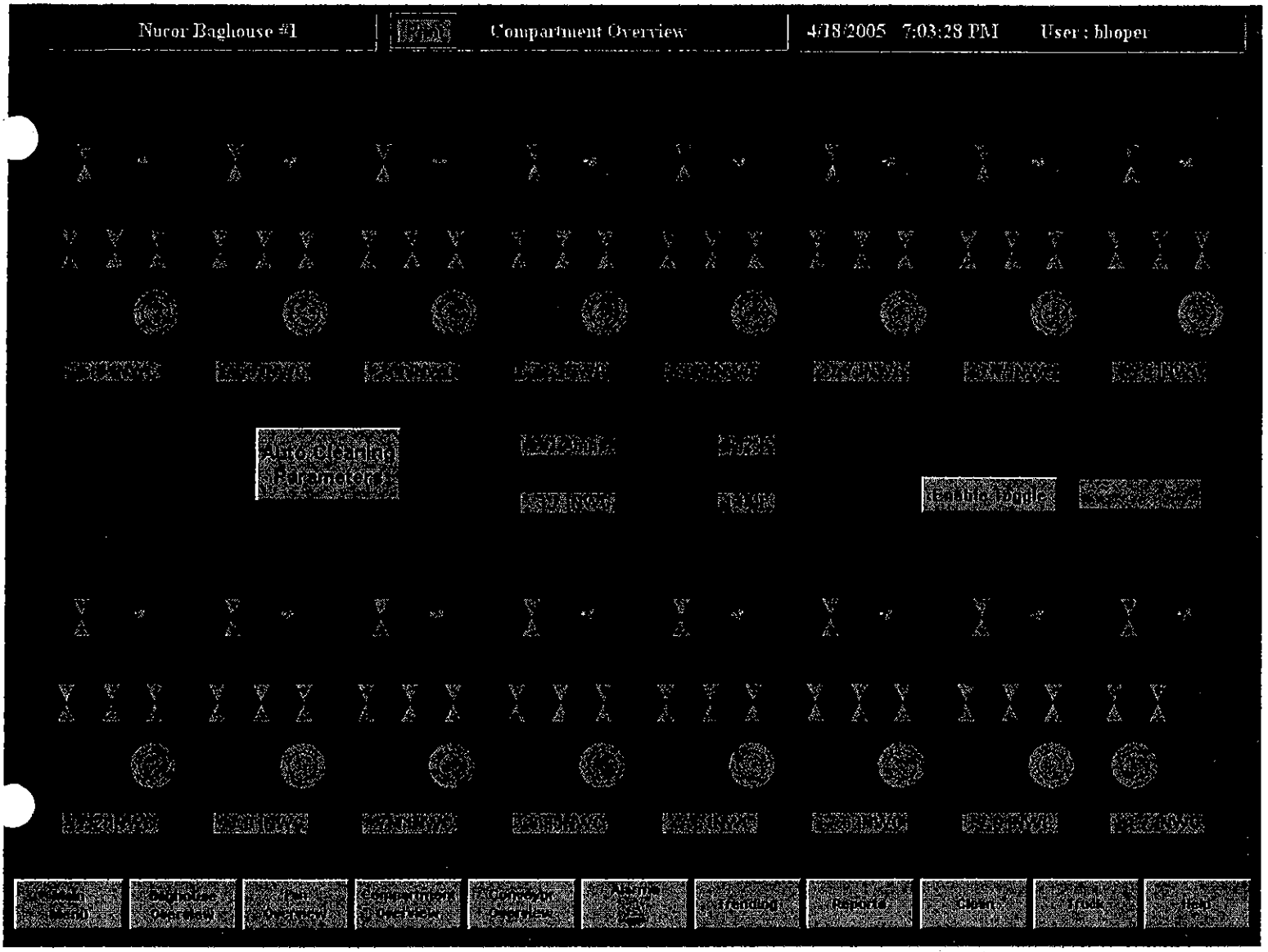
Dr 7.7


Nucor Baghouse #1
Reports Screen
4/18/2005 6:33:04 PM
User : bhoper

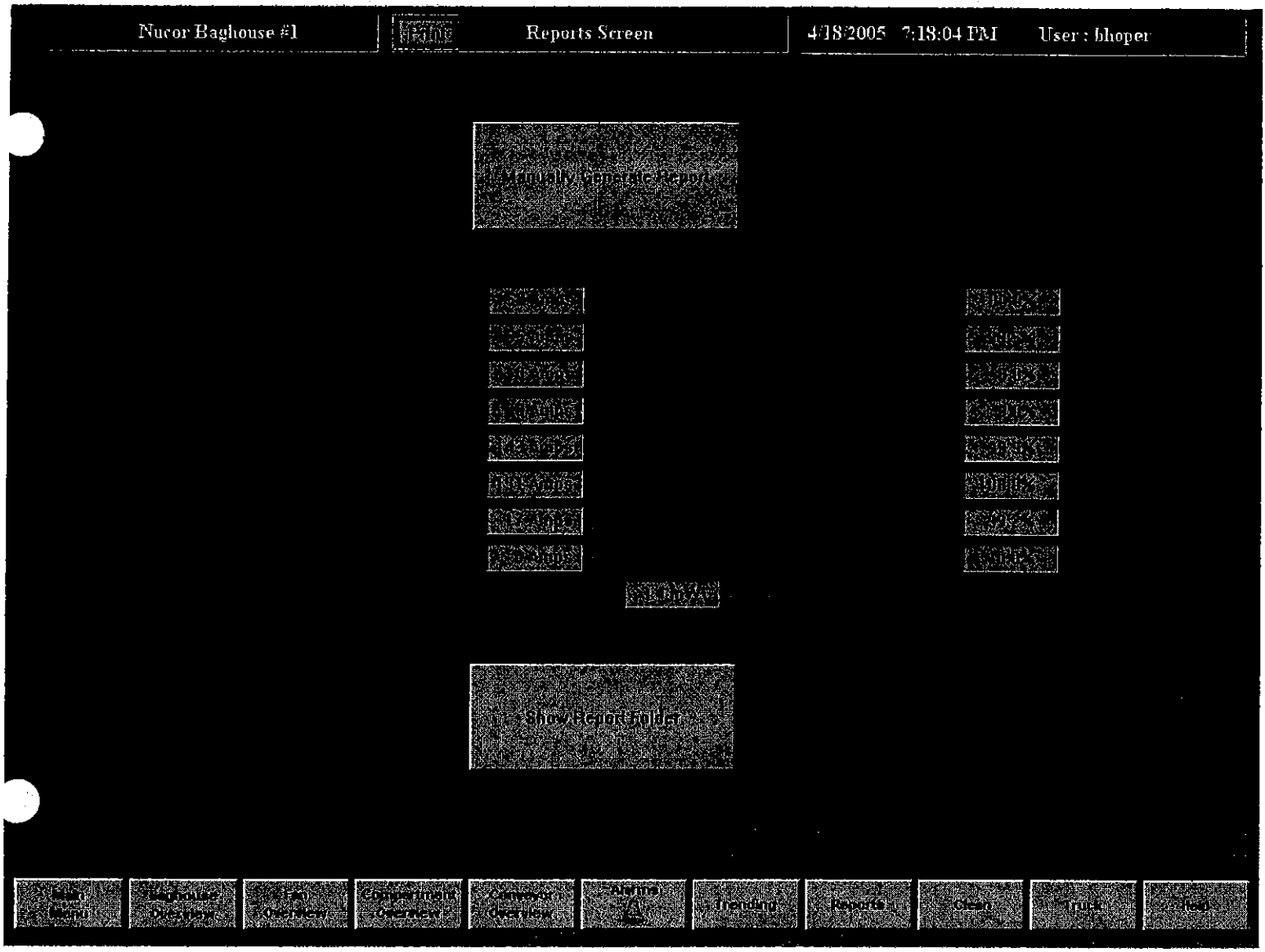
DP 7.5


Nucor Baghouse #1
Reports Screen
4/18/2005 6:48:02 PM
User : bhoper
Manually Generate Report
Show Report Folder
Trending
Reports
Alarms
Trends
Help

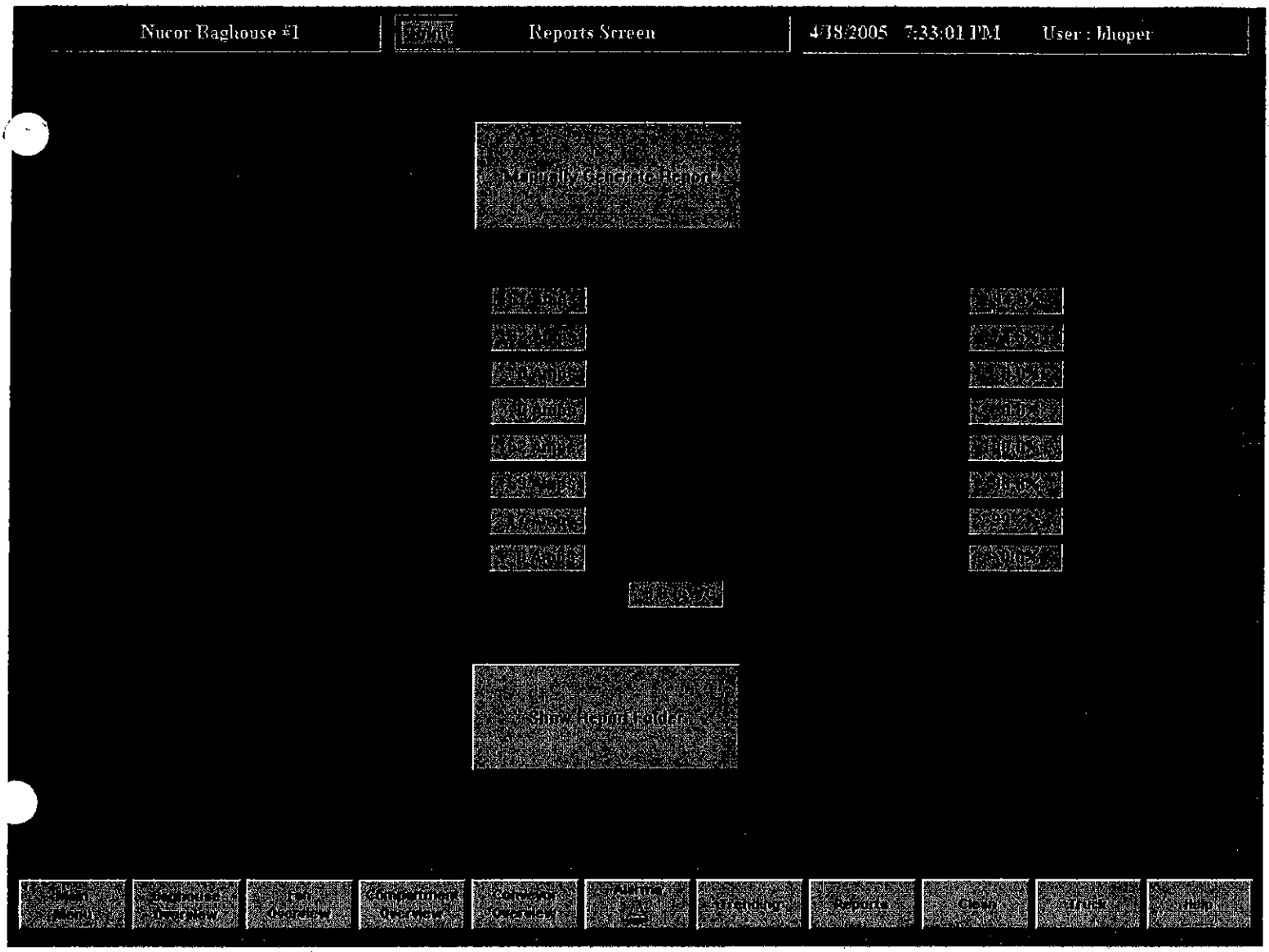
DP 7.2


Nucor Baghouse #1
Compartment Overview
4/18/2005 7:03:28 PM
User : bhoper

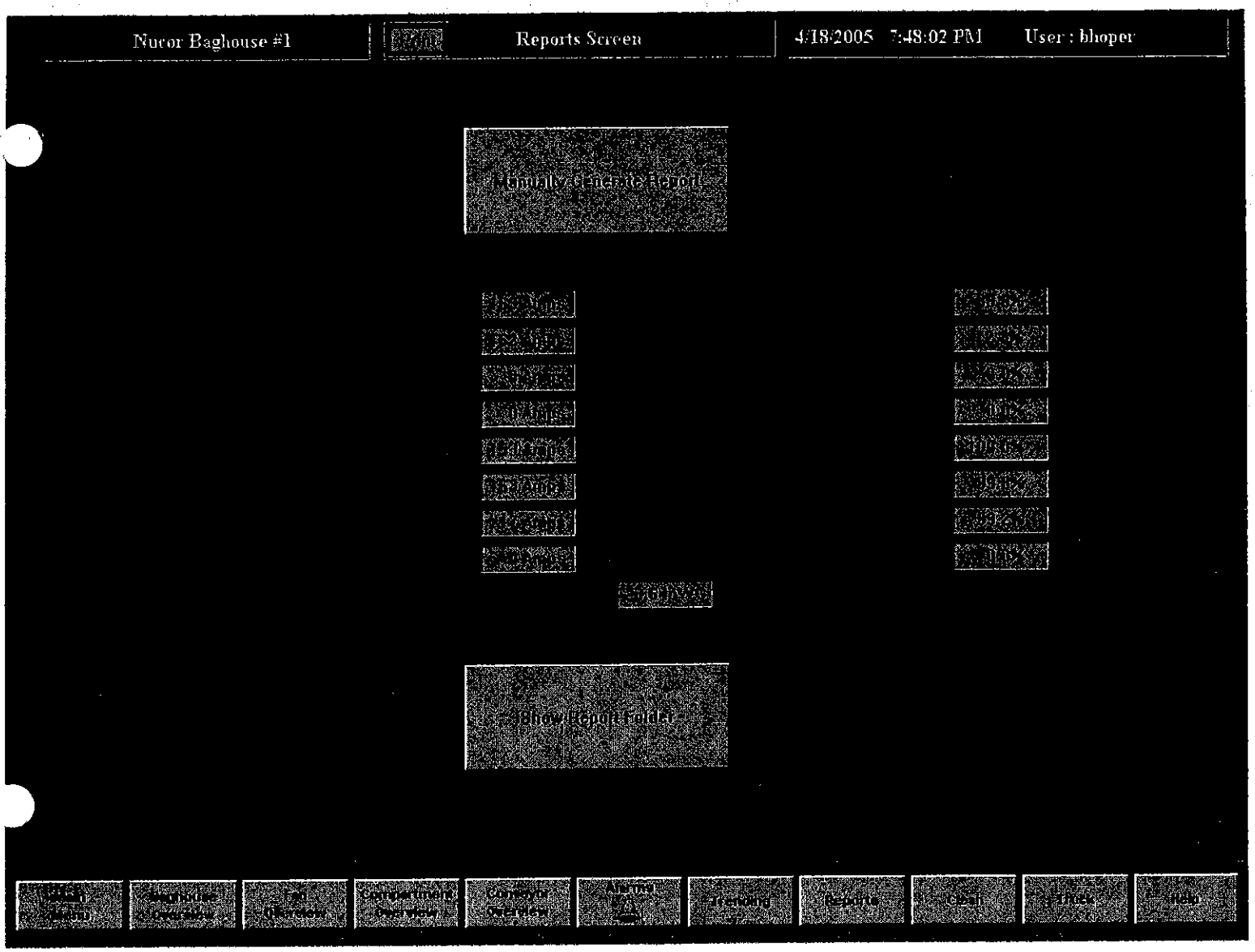
DP 8.0


Nucor Baghouse #1
Reports Screen
4/18/2005 7:18:04 PM
User : bhoper
Show Report Folder
Alarms
Trending
Reports

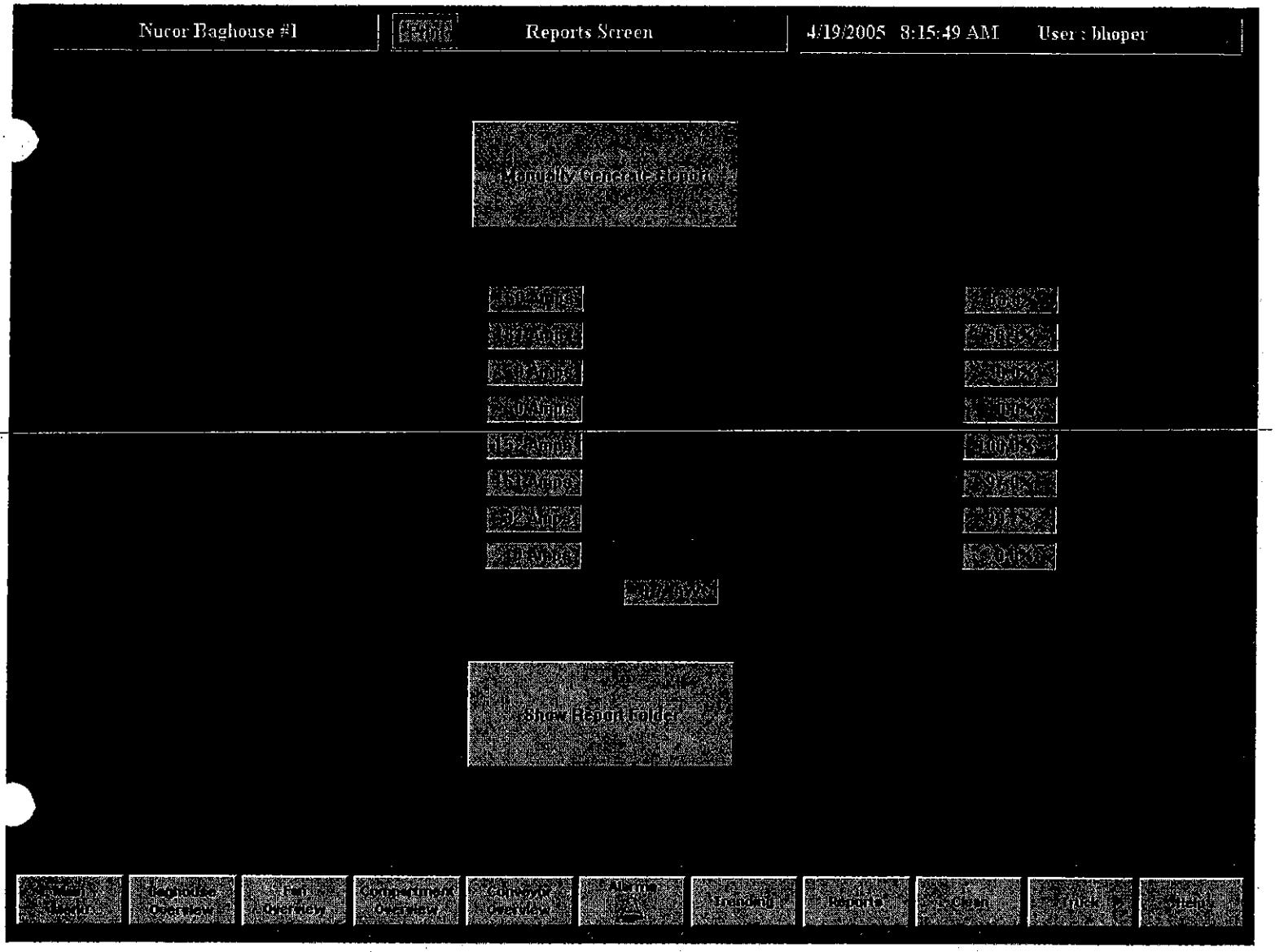
DP 7.5


Nucor Baghouse #1
Reports Screen
4/18/2005 7:33:01 PM
User : bhoper
Monthly Generic Report
Shift Report Header

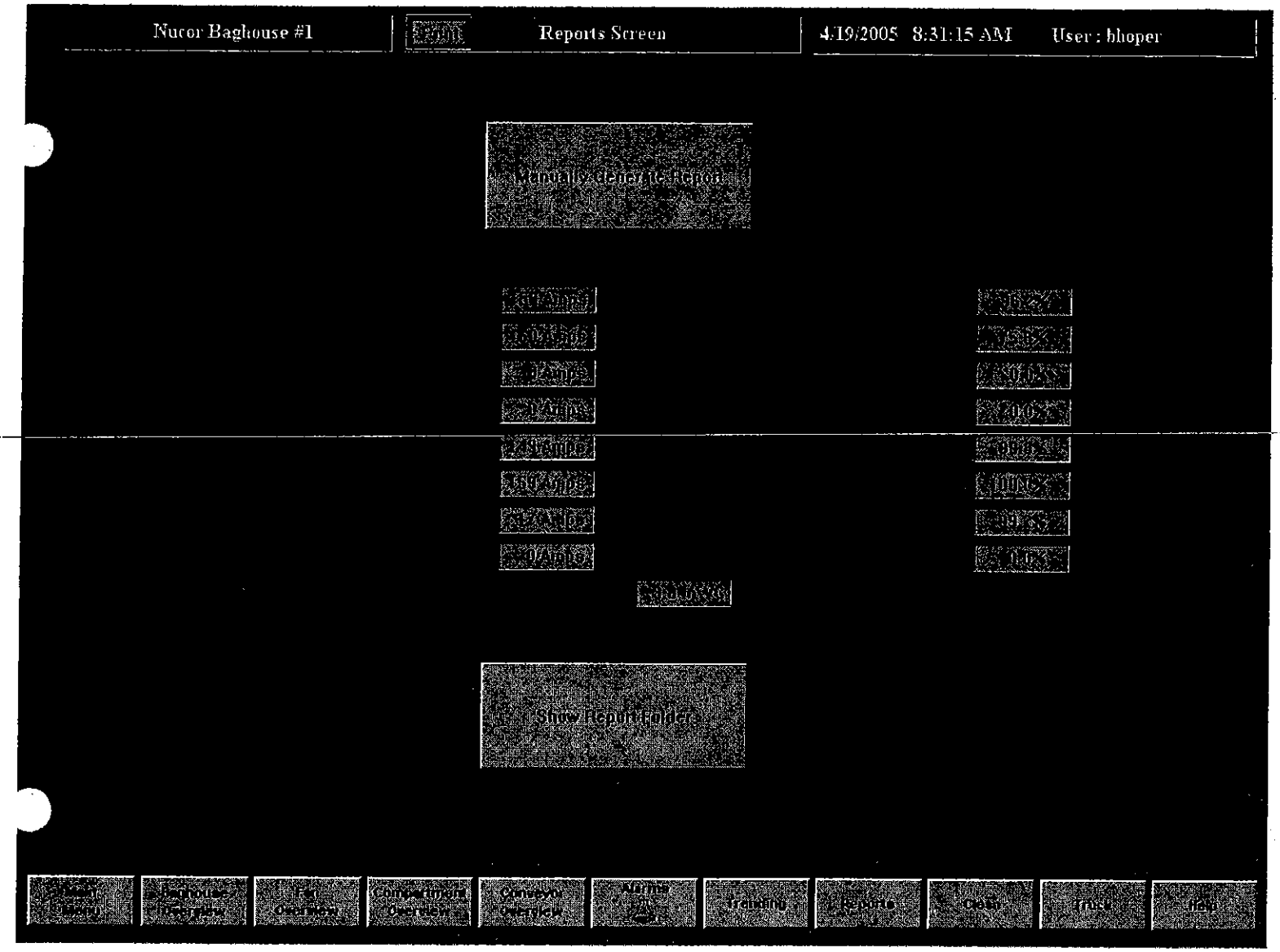
DP 7.9


Nucor Baghouse #1
Reports Screen
4/18/2005 7:48:02 PM
User : bhoper
Manually Generate Report
Show Report Folder

DP 7.7


Nucor Baghouse #1
Reports Screen
4/19/2005 8:15:49 AM
User : bhoper
Show Report Folder

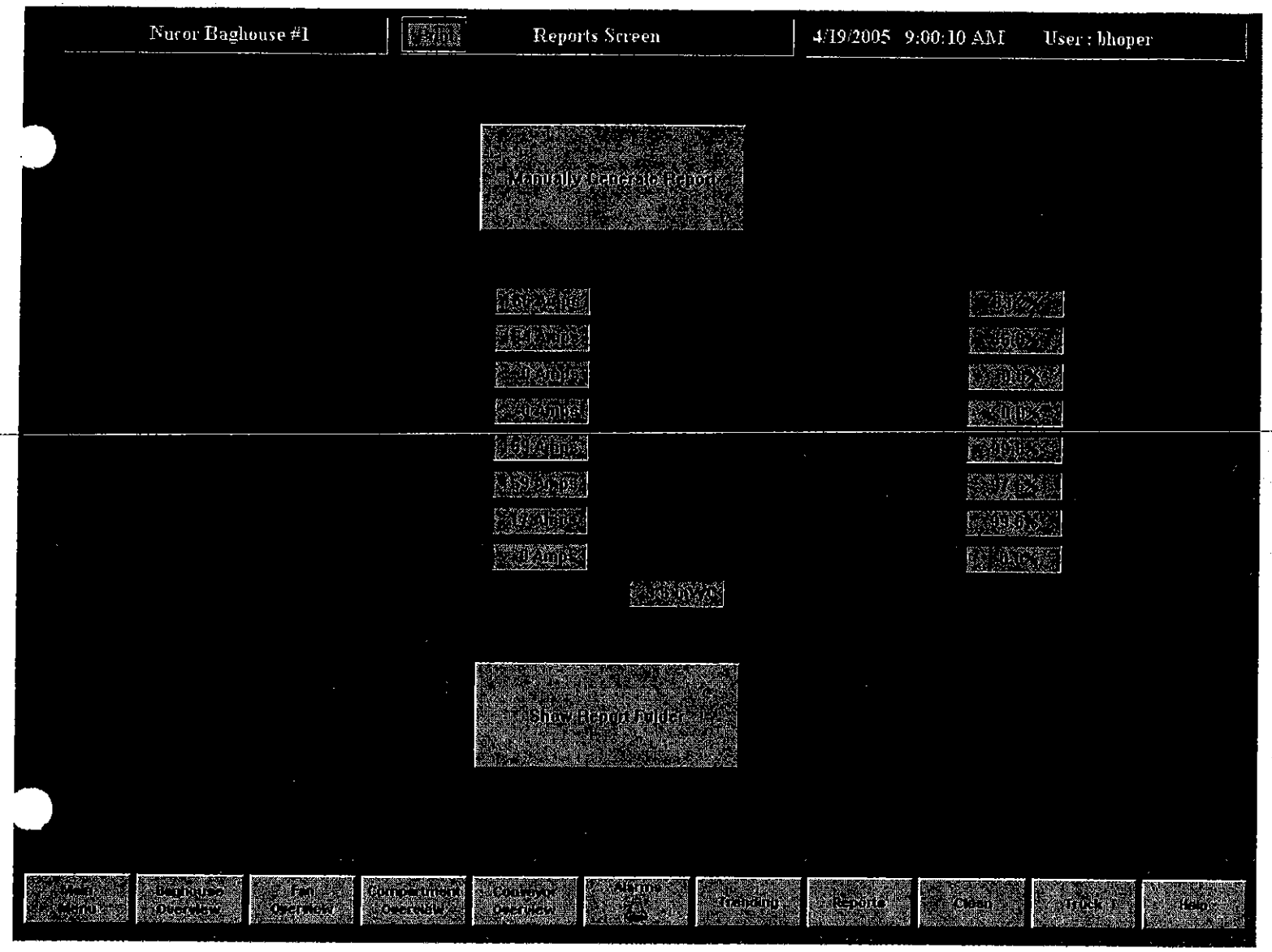
OP - 7.6


Nucor Baghouse #1
Reports Screen
4/19/2005 8:31:15 AM
User : bhoper
Manually Generate Report
Show Report Folder

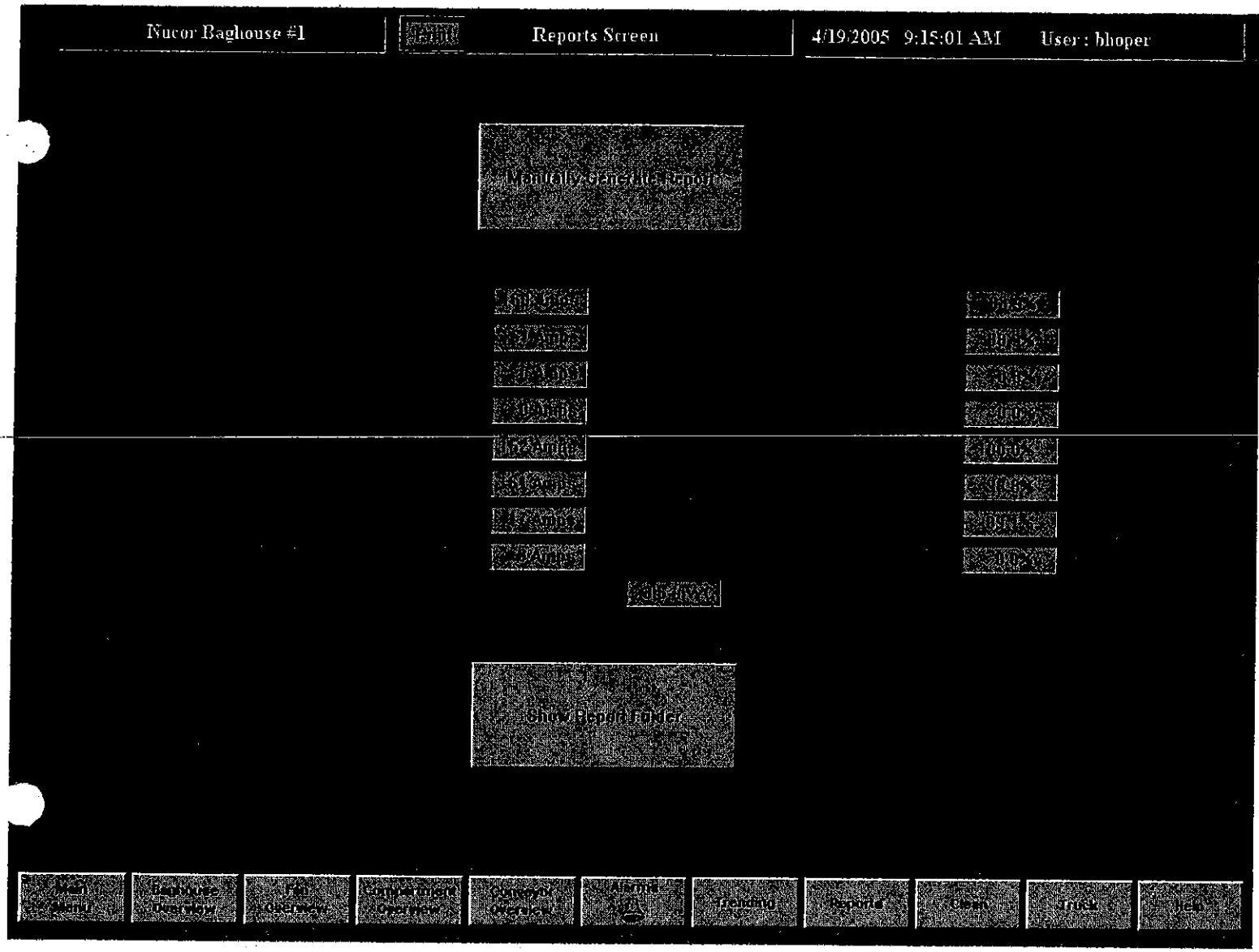
OP-7.5


Nucor Baghouse #1
Reports Screen
4/19/2005 8:45:11 AM
User : bhoper
Manually Generate Report
Show Report Folder

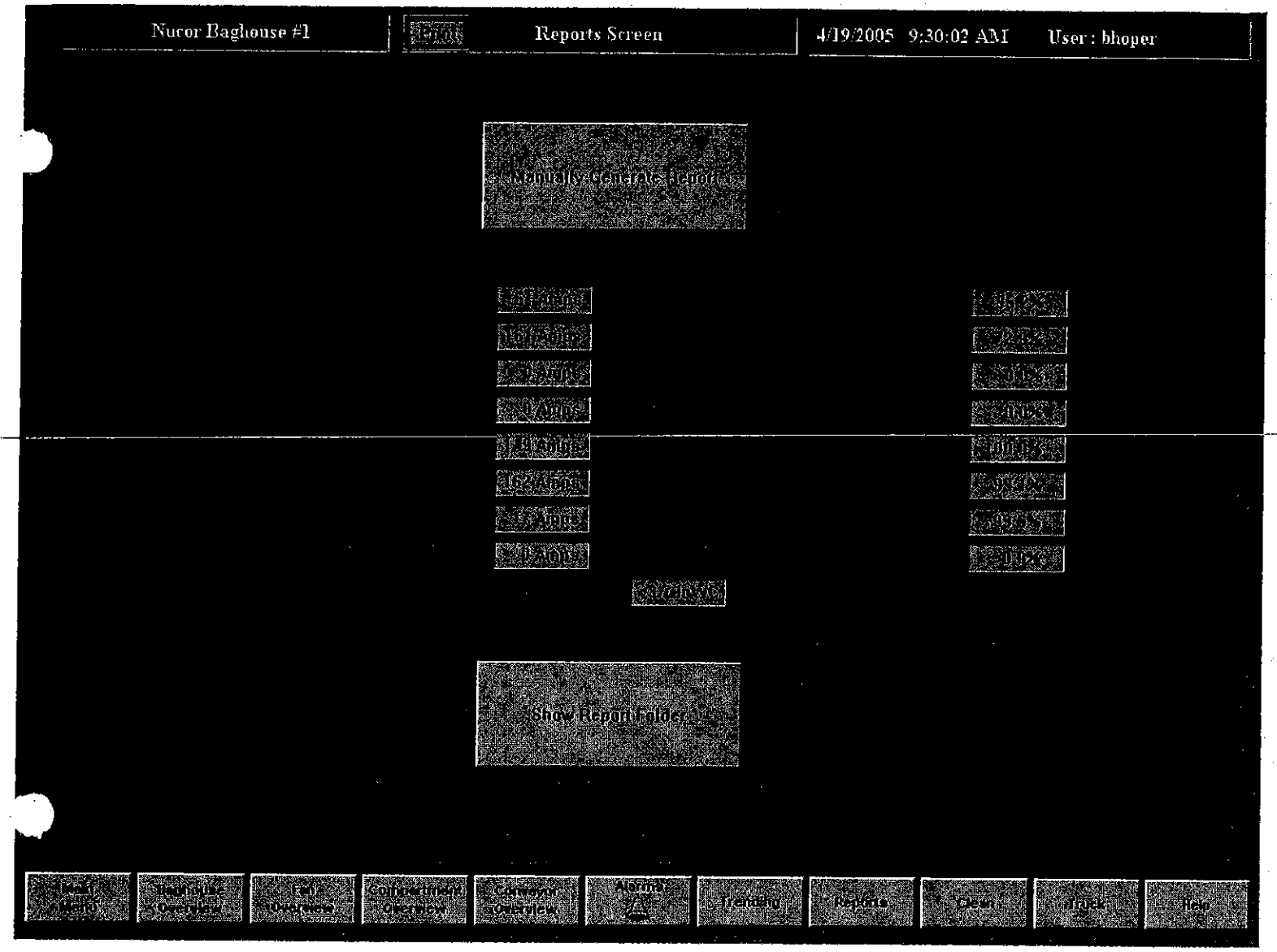
OP - 7.4


Nucor Baghouse #1
Reports Screen
4/19/2005 9:00:10 AM
User : bhoper
Manually Generate Report
Show Report Folder

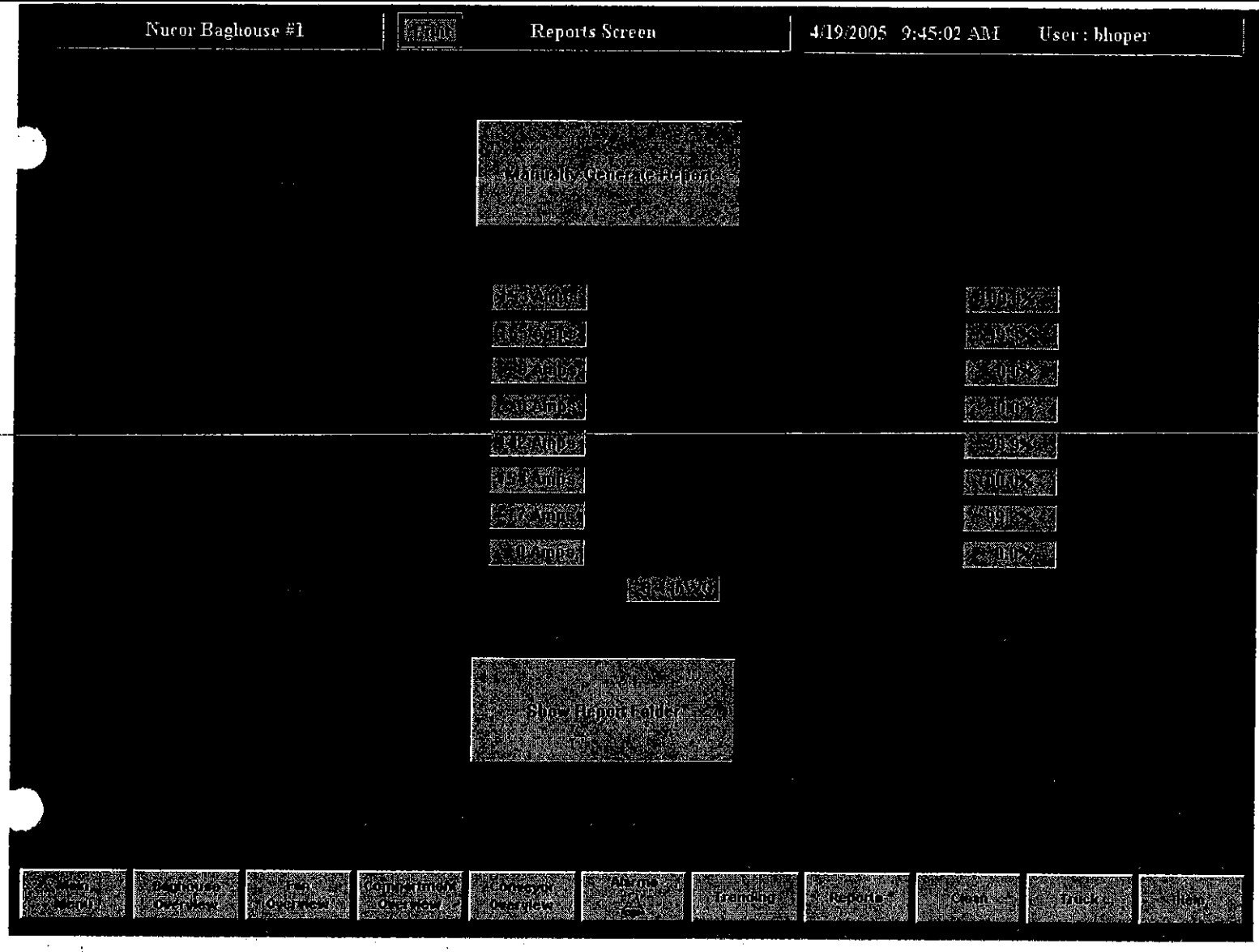
ΔP 7.6


Nucor Baghouse #1
Reports Screen
4/19/2005 9:15:01 AM
User : bhoper
Manually Create Report
Shift Report Folder

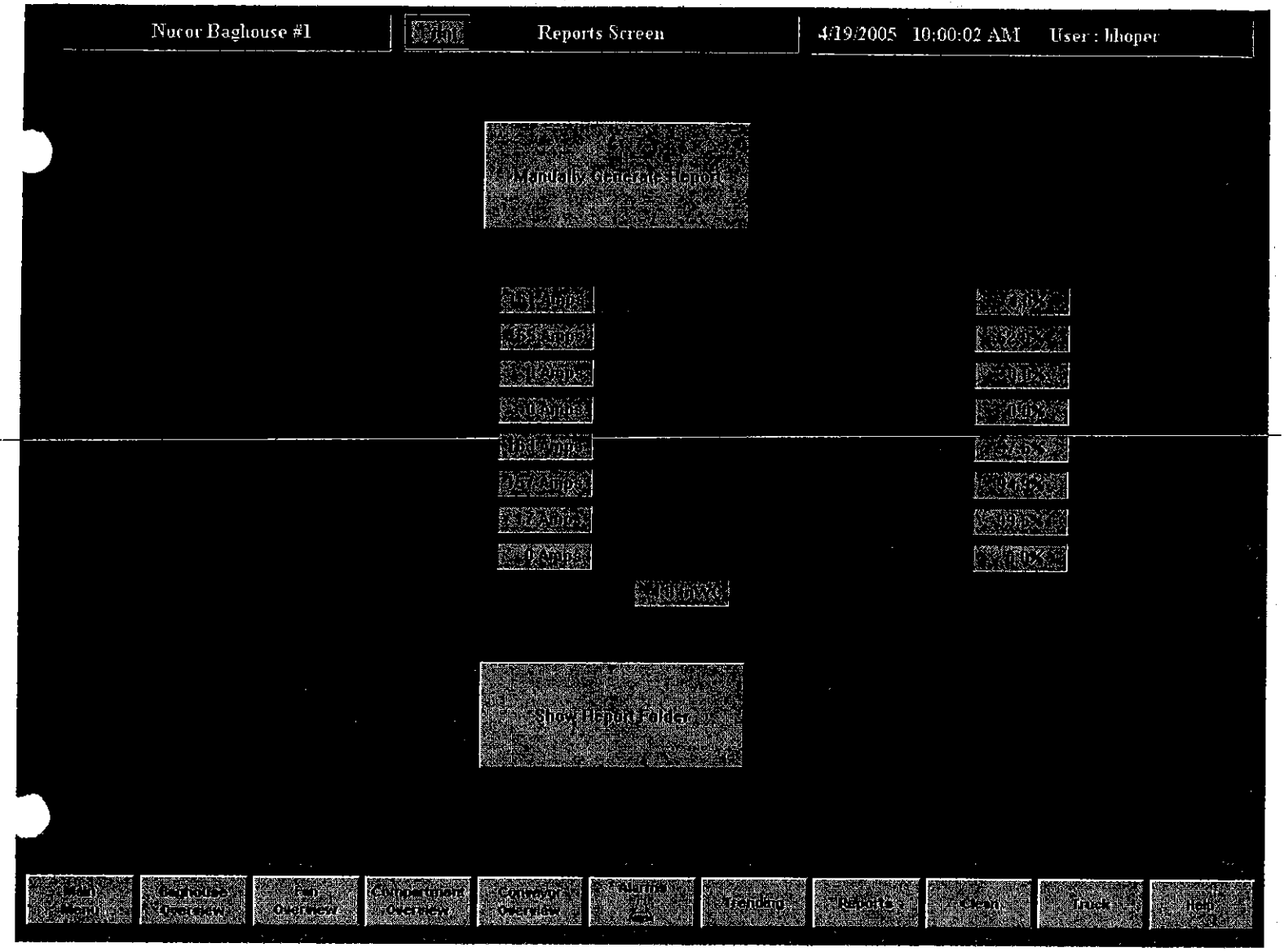
P 6.8


Nucor Baghouse #1
Reports Screen
4/19/2005 9:30:02 AM
User : bhoper
Manually Generate Report
Show Report Folder
Alarms
Trending
Reports
Users
Trips
Help

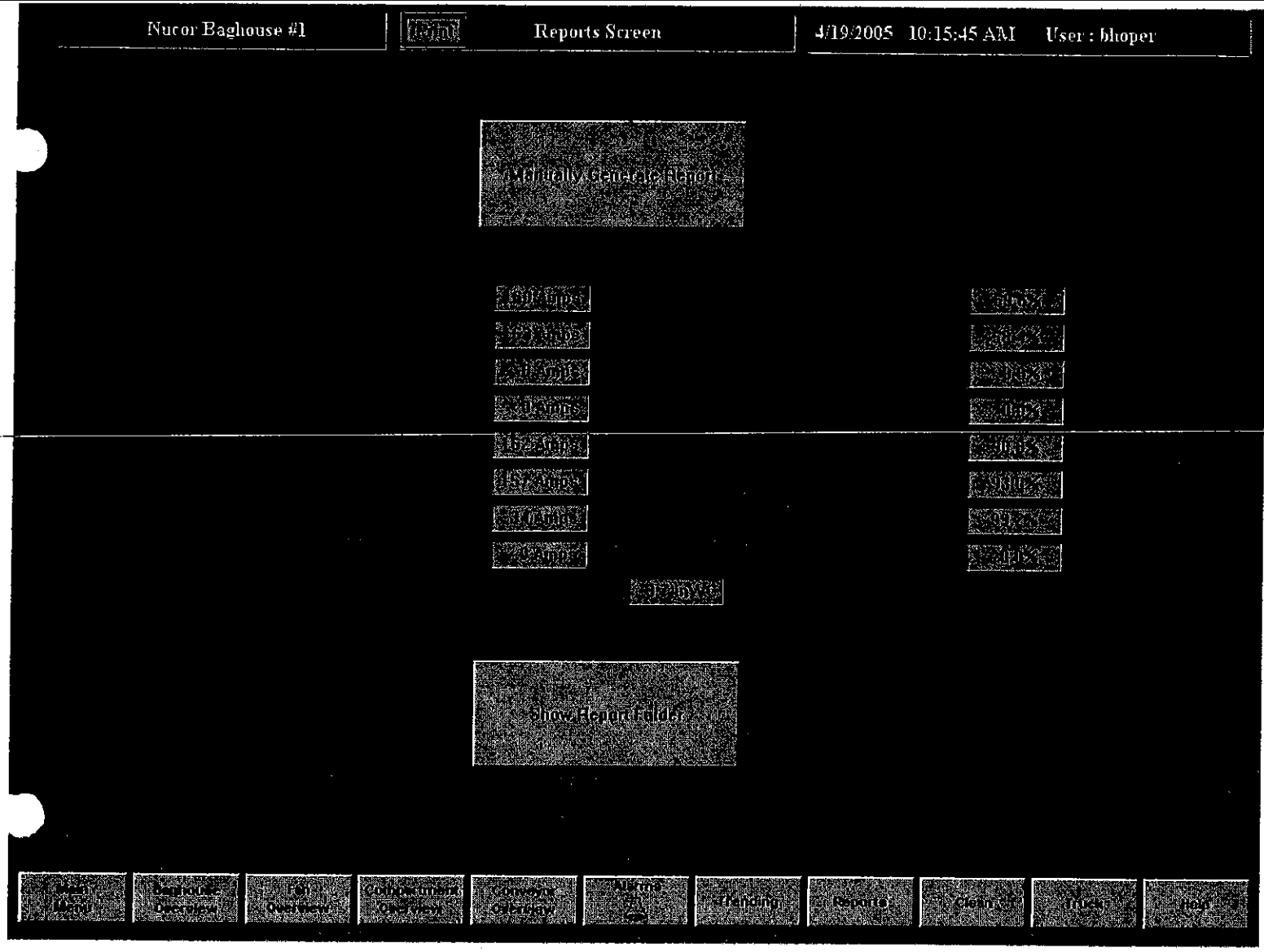
AP 7.1


Nucor Baghouse #1
Reports Screen
4/19/2005 9:45:02 AM
User : bhoper
Show Report Folder

ΔP 7.4


Nucor Baghouse #1
Reports Screen
4/19/2005 10:00:02 AM
User : hhoper
Show Report Folder

ΔP 7.0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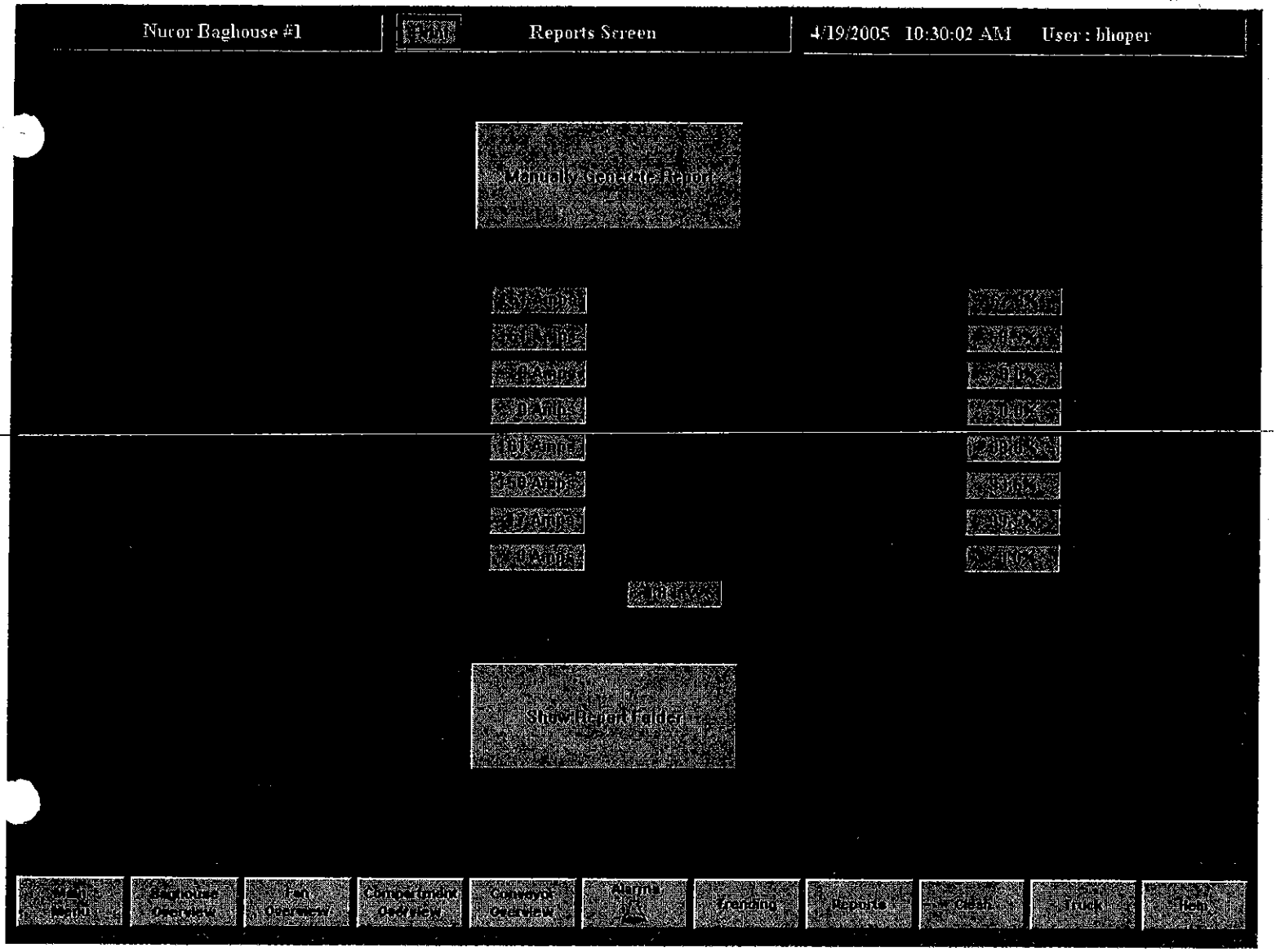
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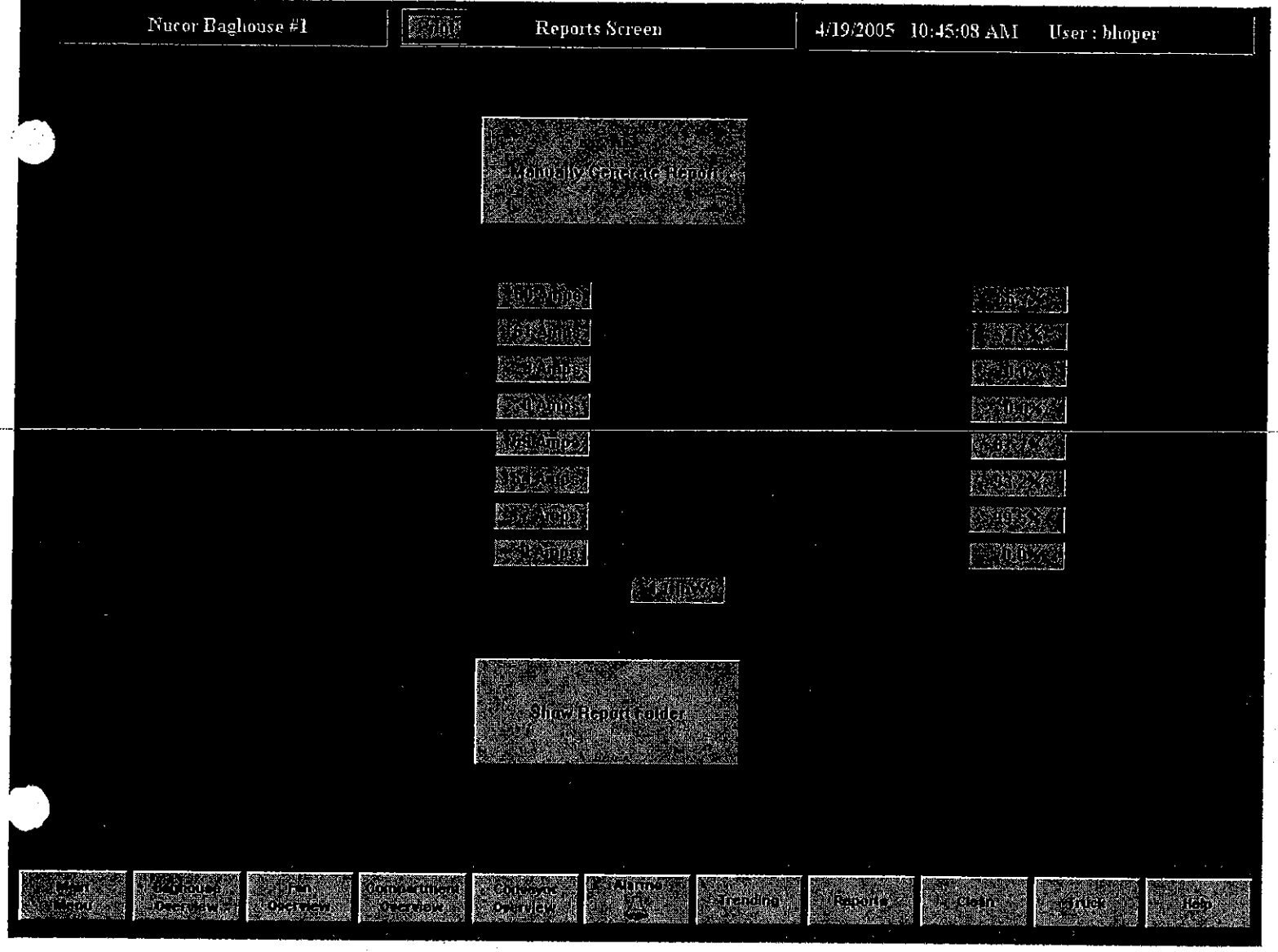
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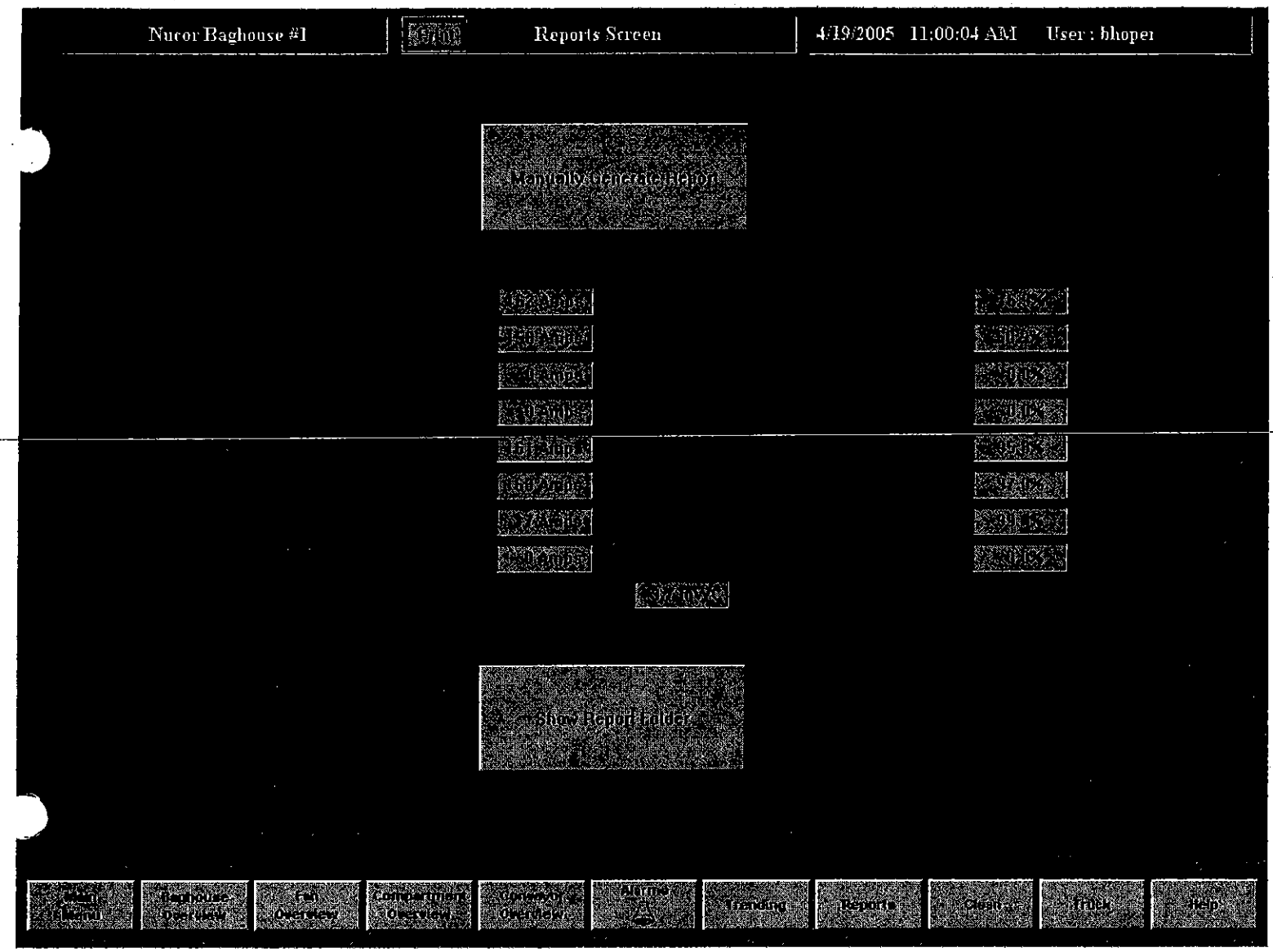
Reports
Logon
Help

ΔP 6.4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Alarms
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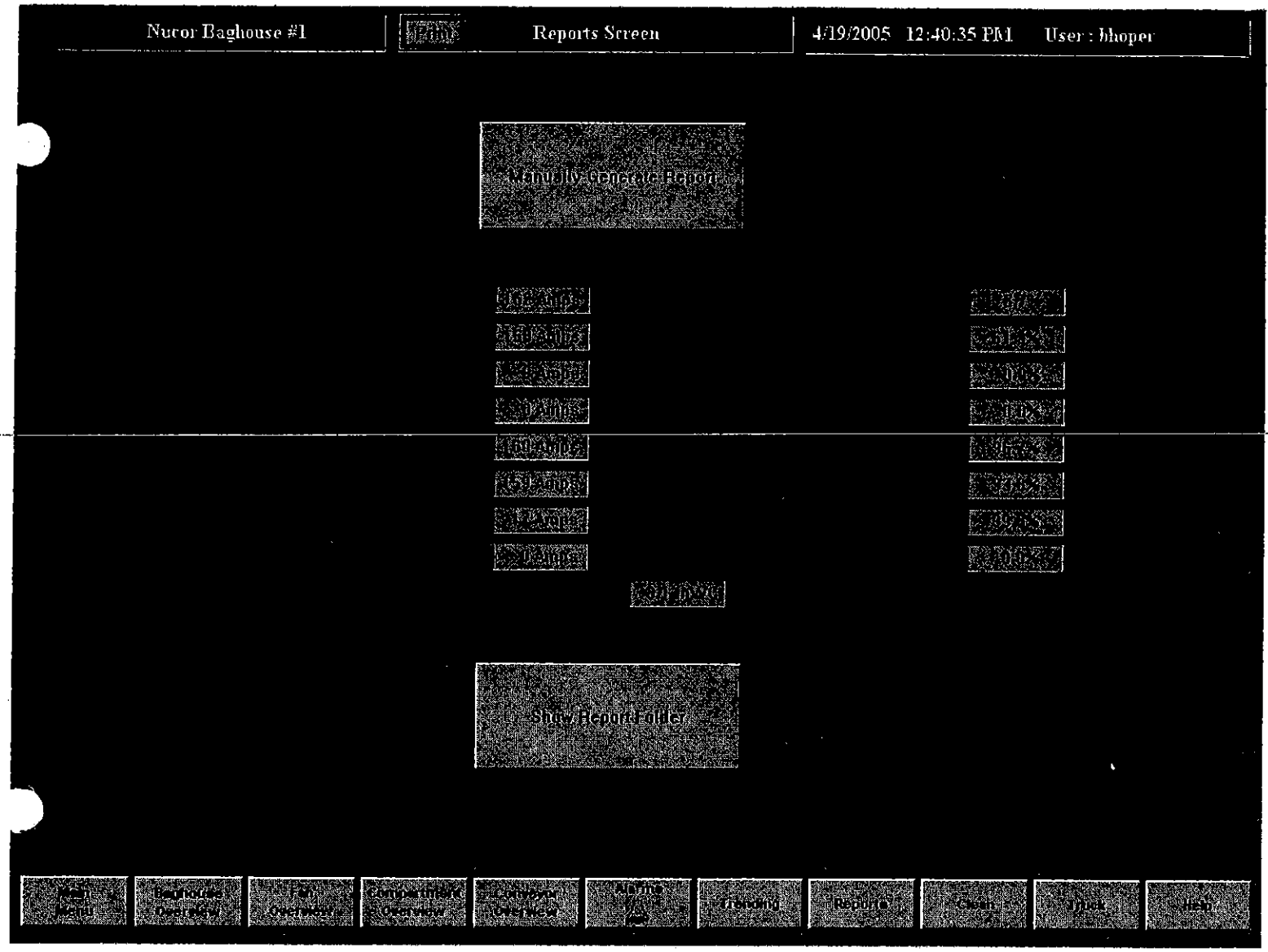
Reports
Trips
Help

△6.7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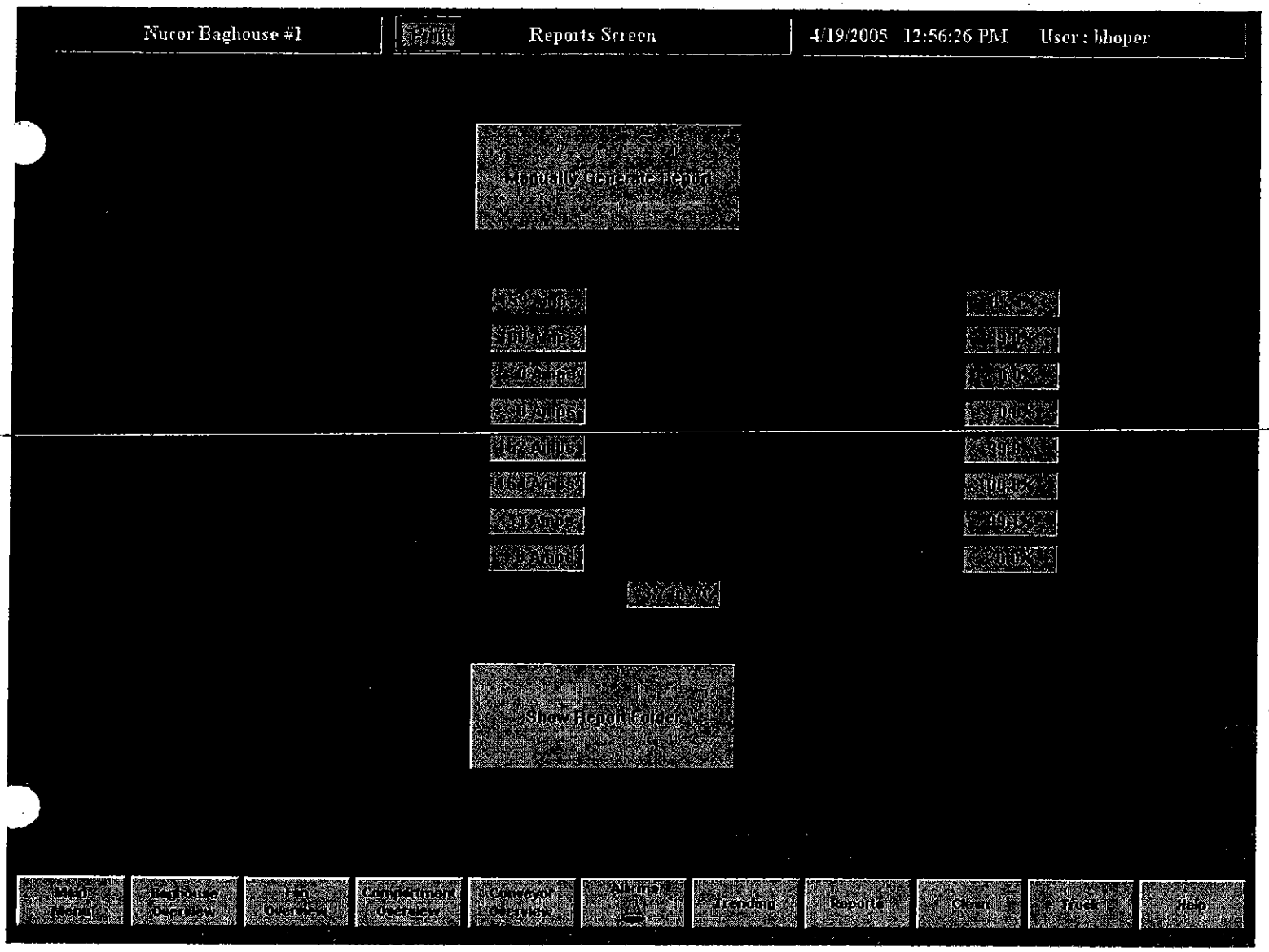
Δ 6.8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Alarms
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Close
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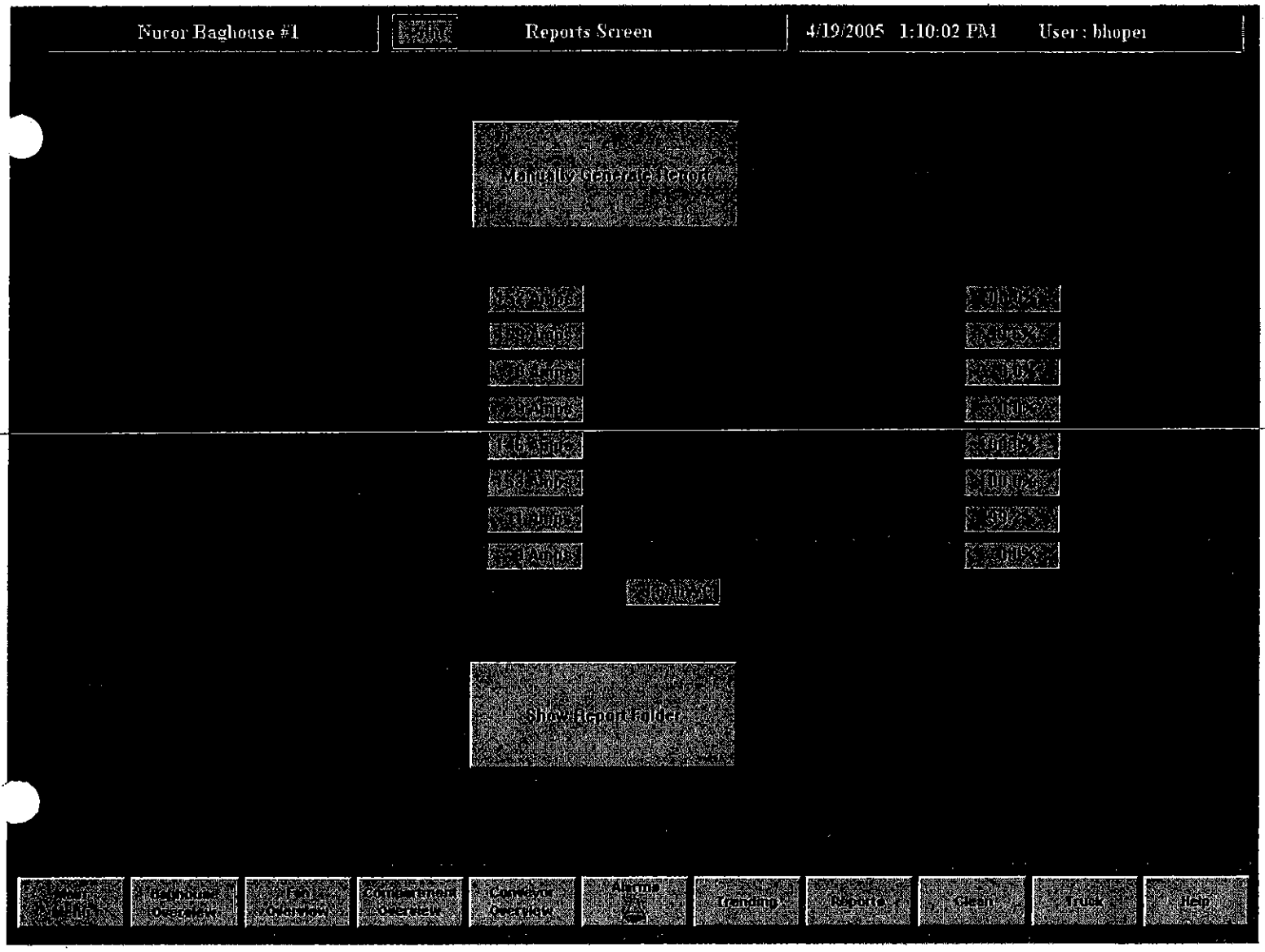
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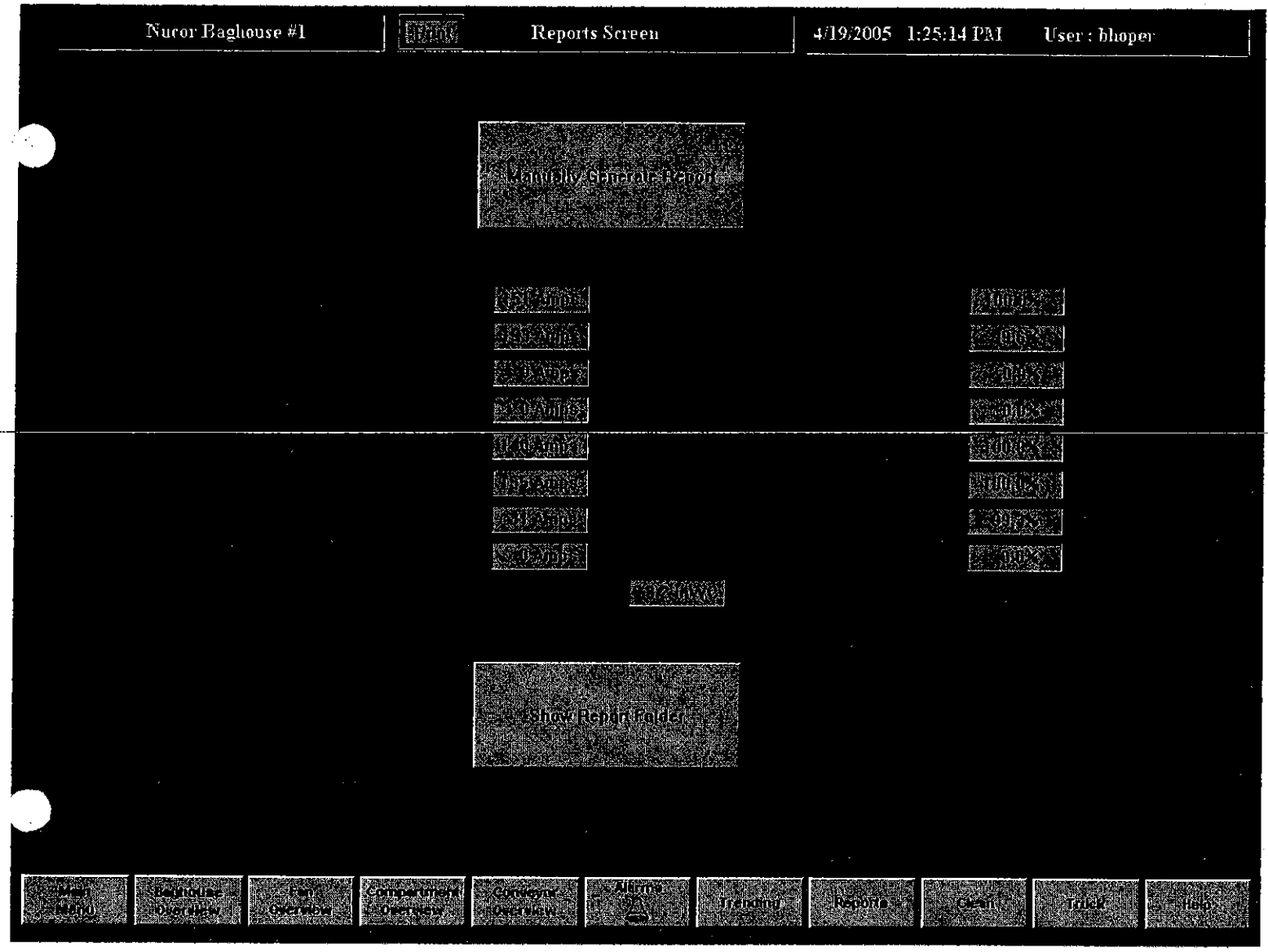
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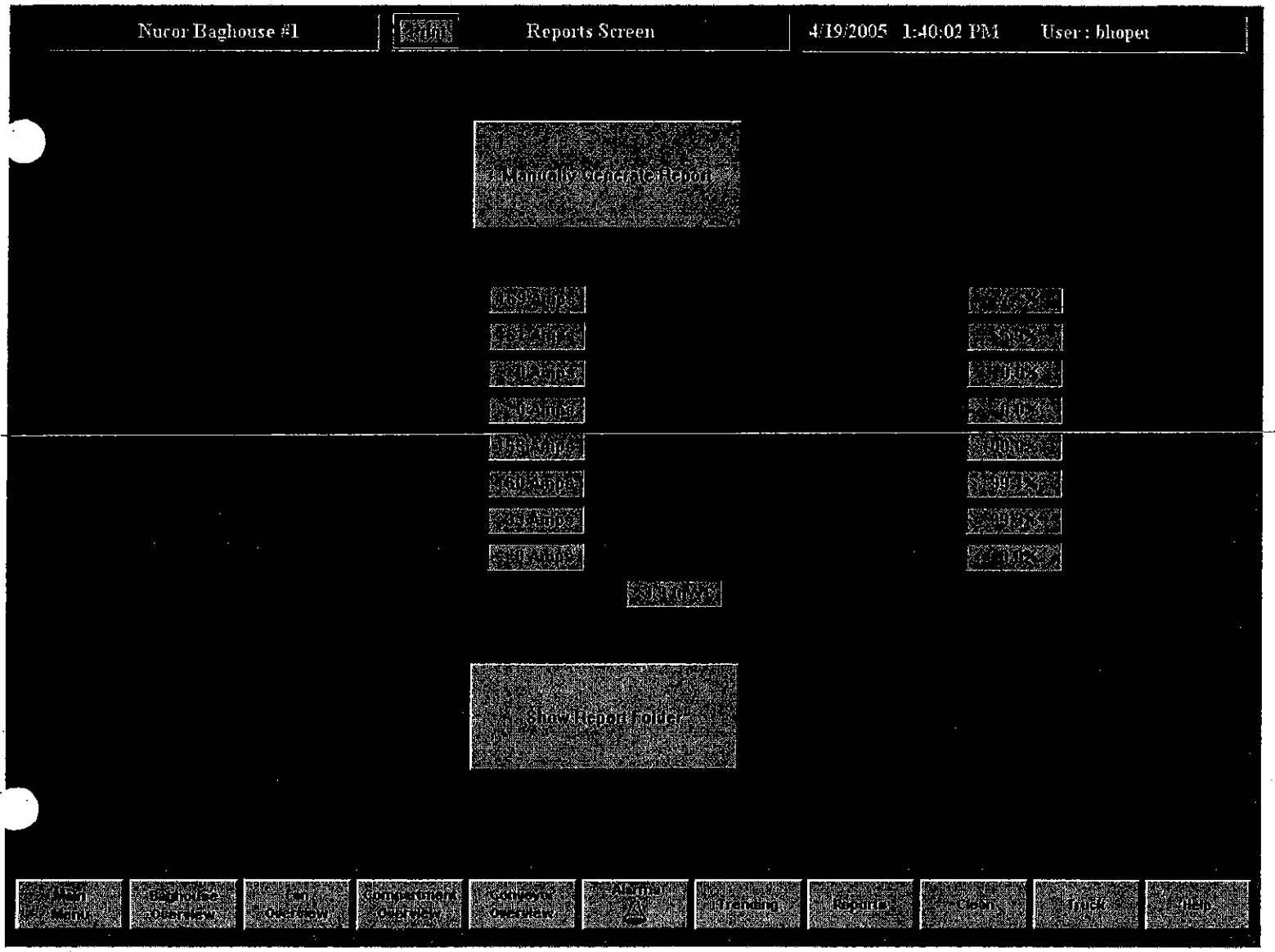
Fans Overview
Compartment Overview
Cleaning Overview
Alarms
Trending
Reports
Users
Trick
Help

7.7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Alarms
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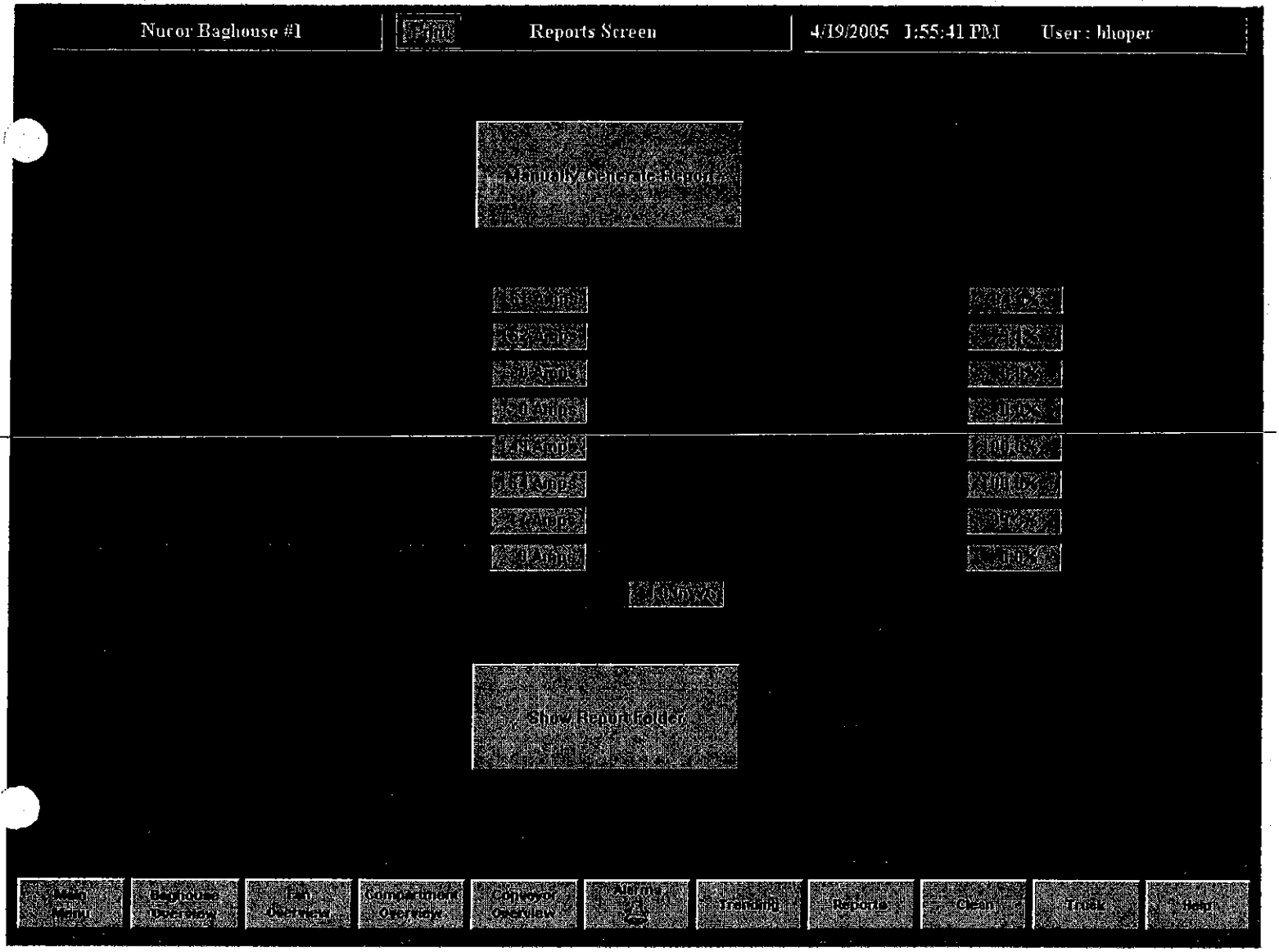
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Trending
Reports
Clean
Trash
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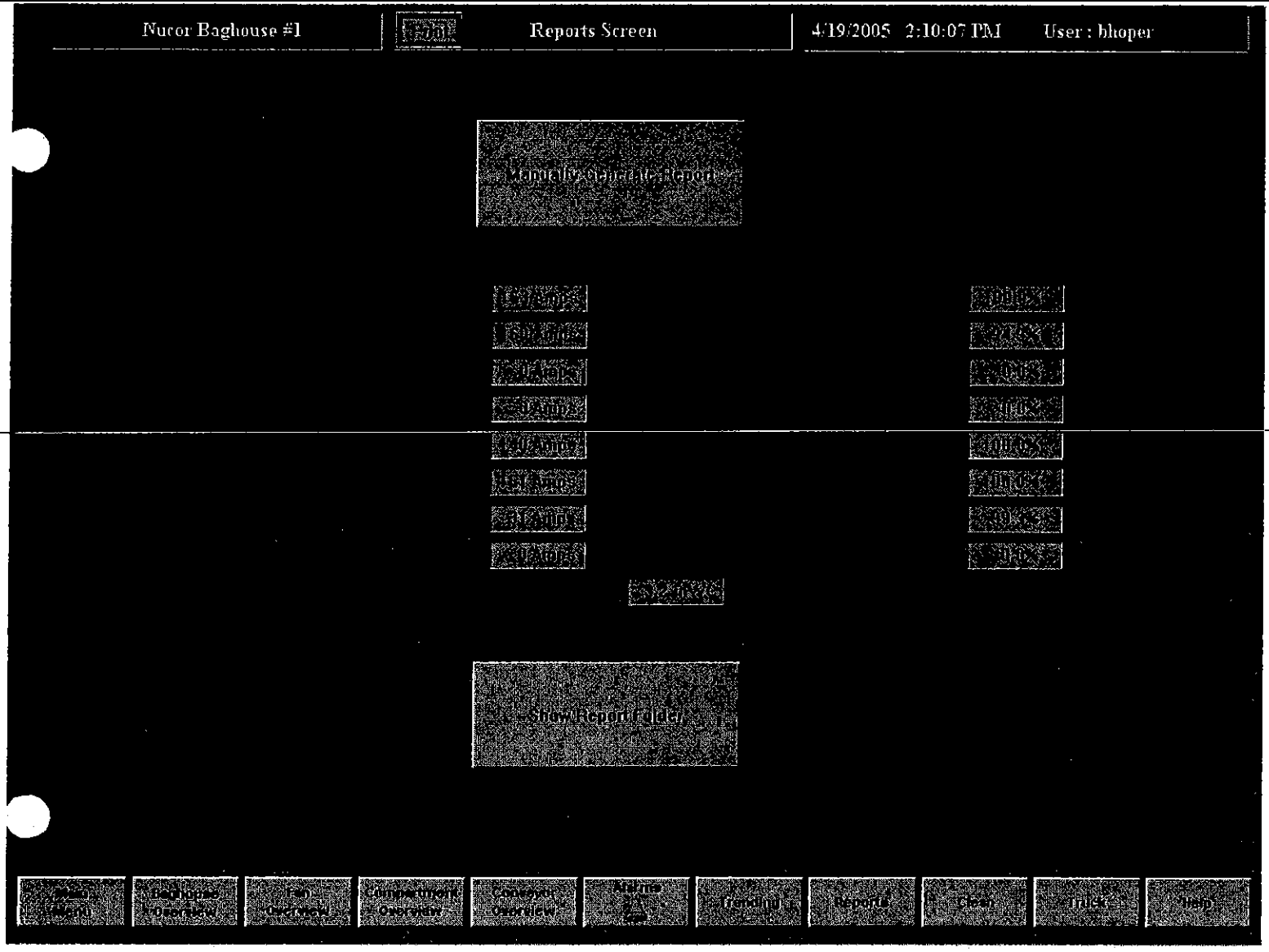
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Show Report Folder

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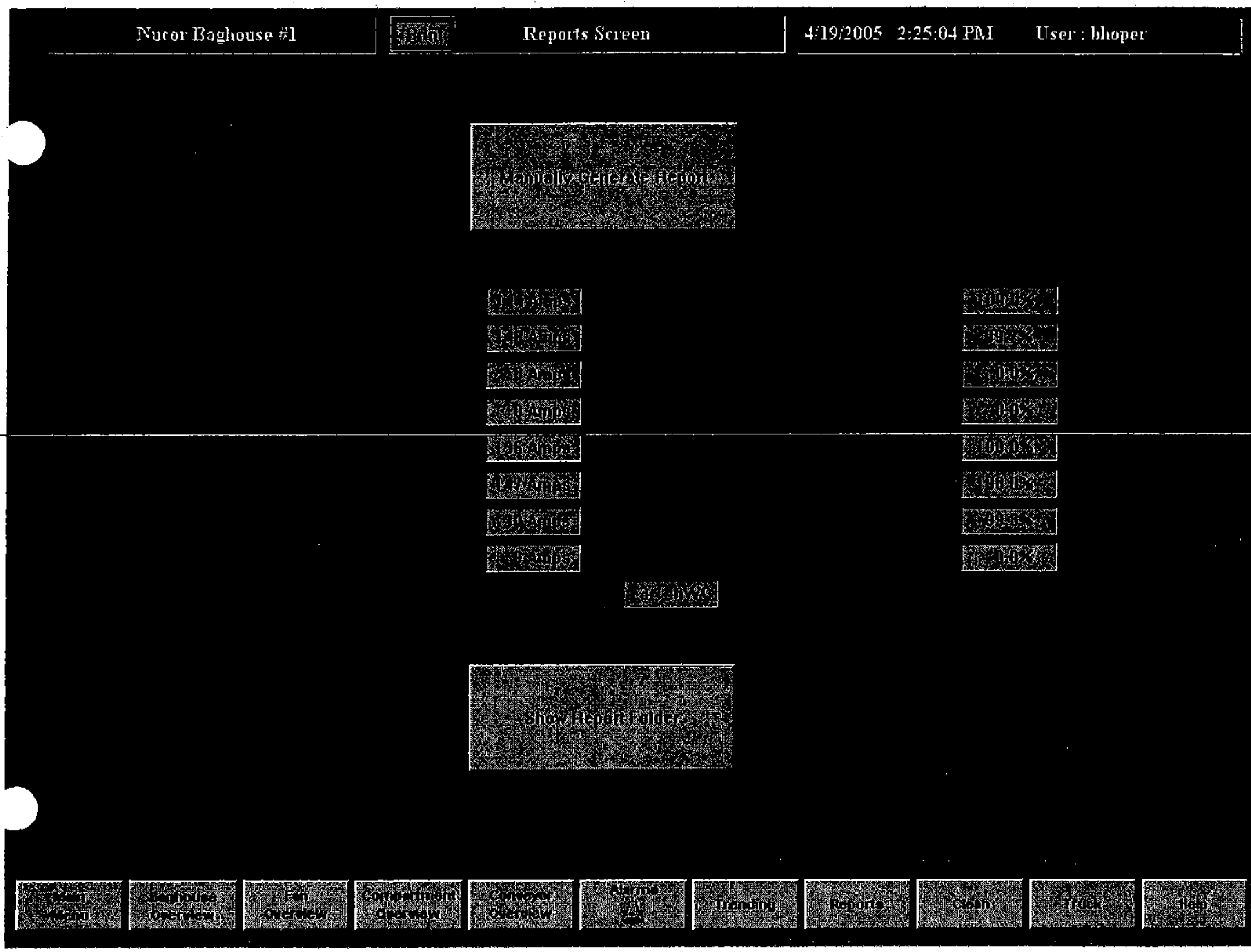
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Compartment Overview
Trending
Reports

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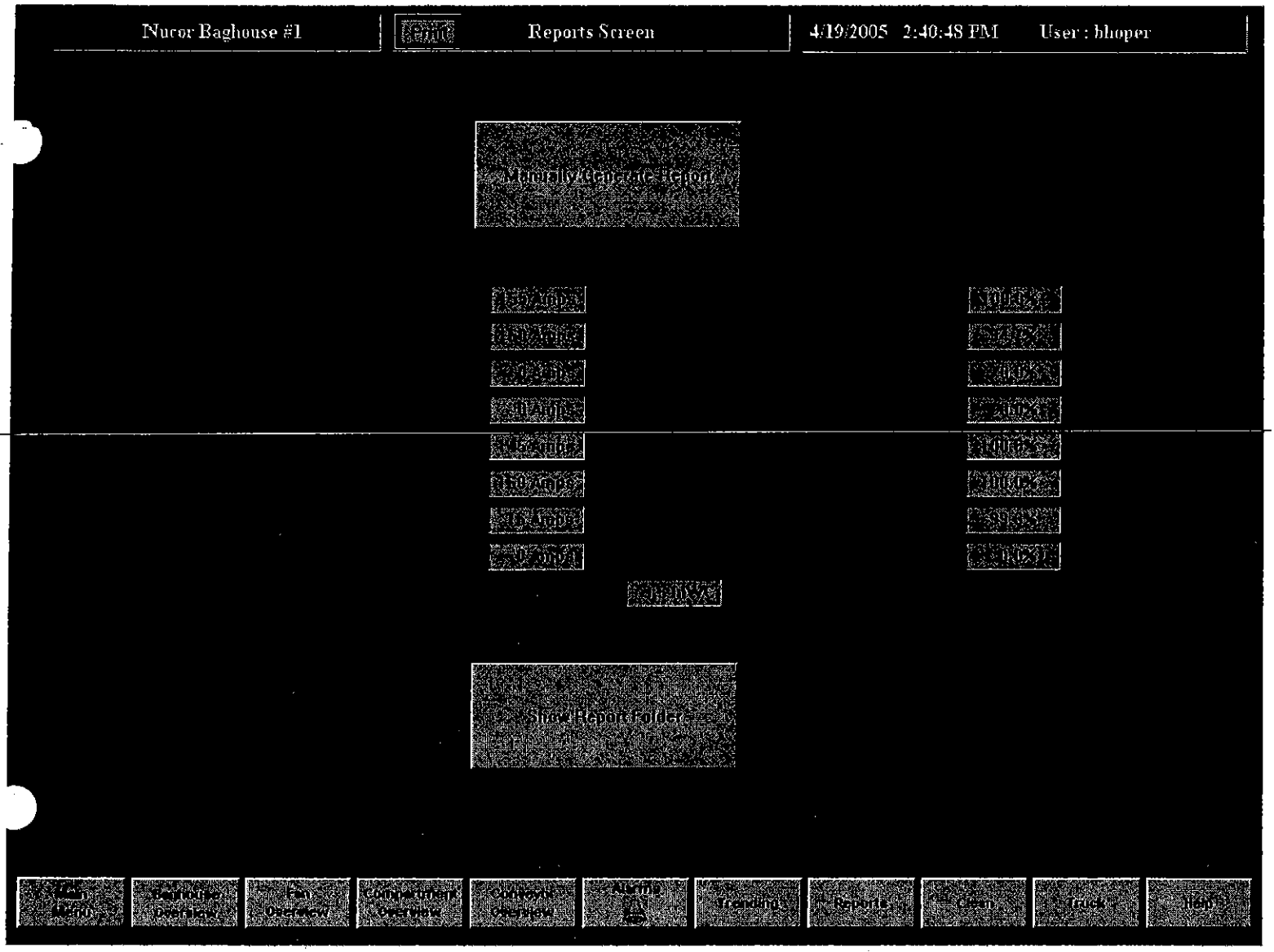
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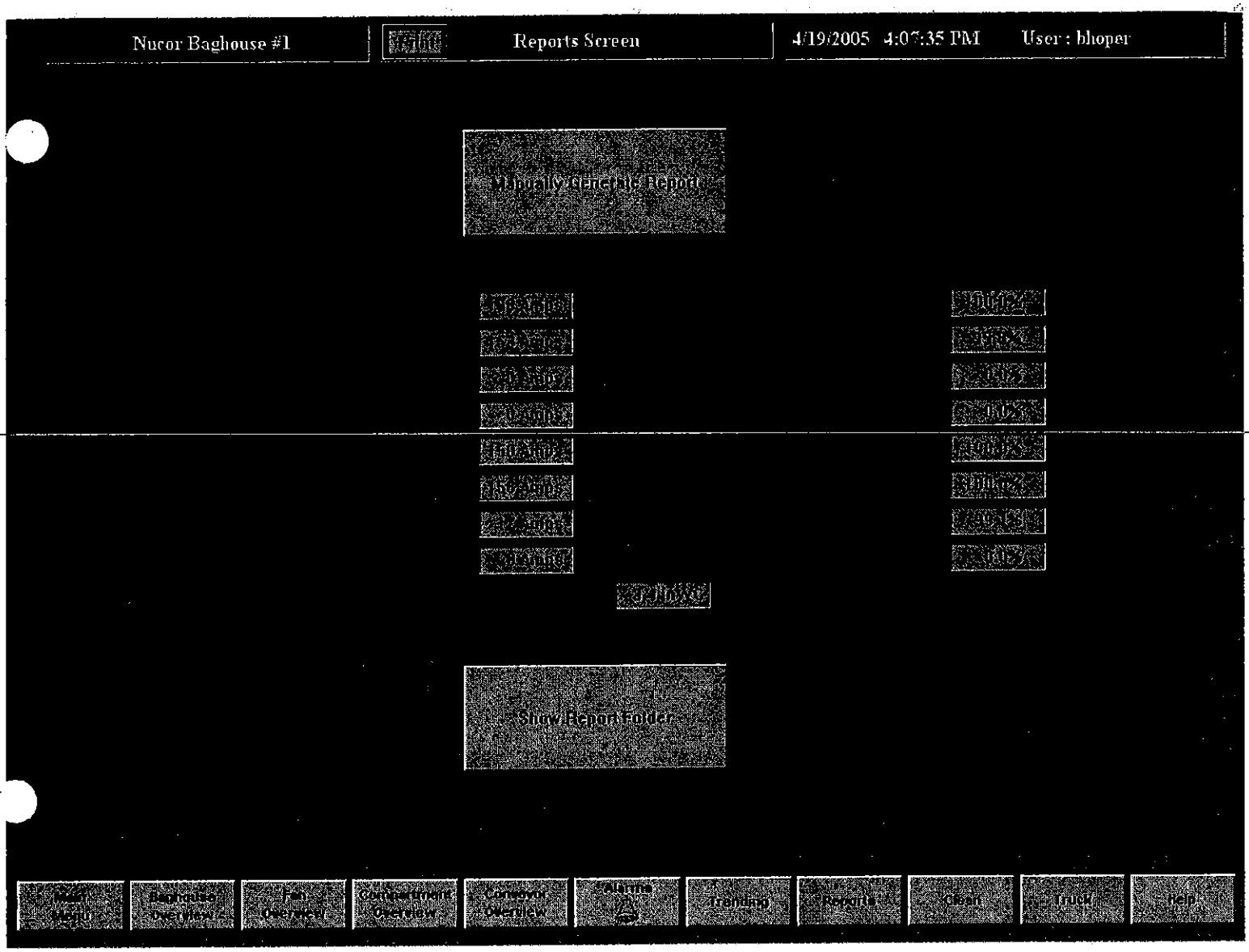
Trending
Reports

7.1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Show Report Folder
Reports

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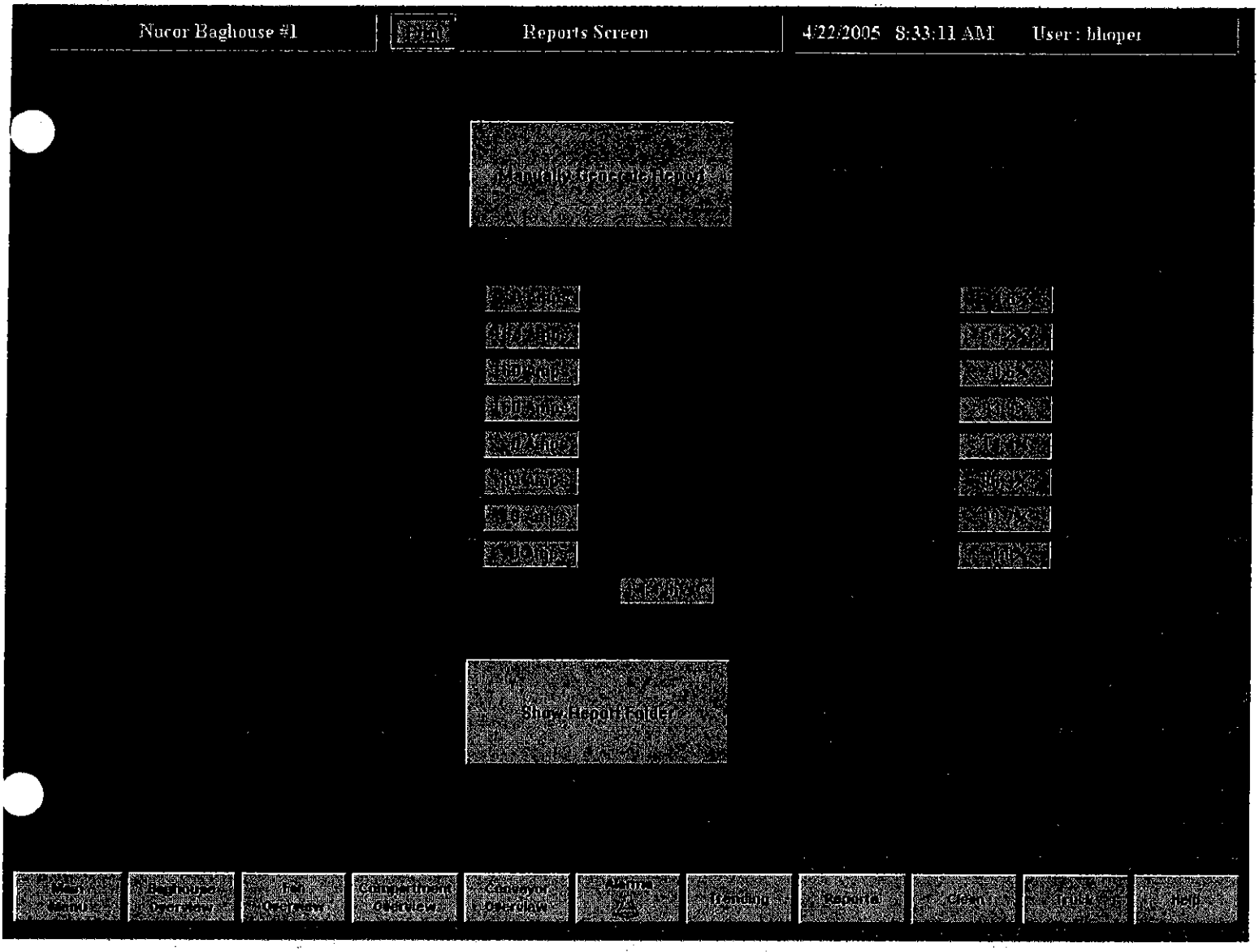
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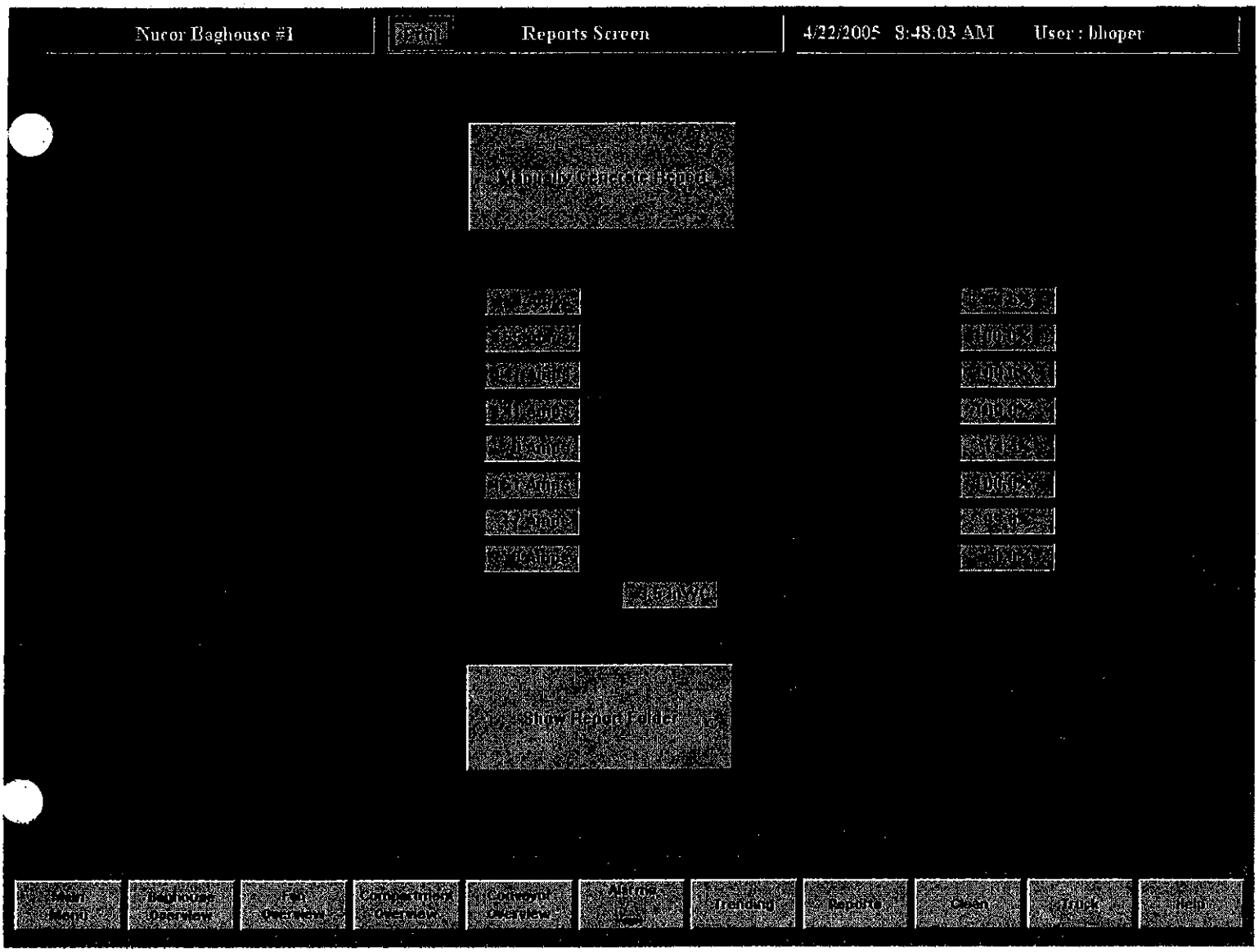
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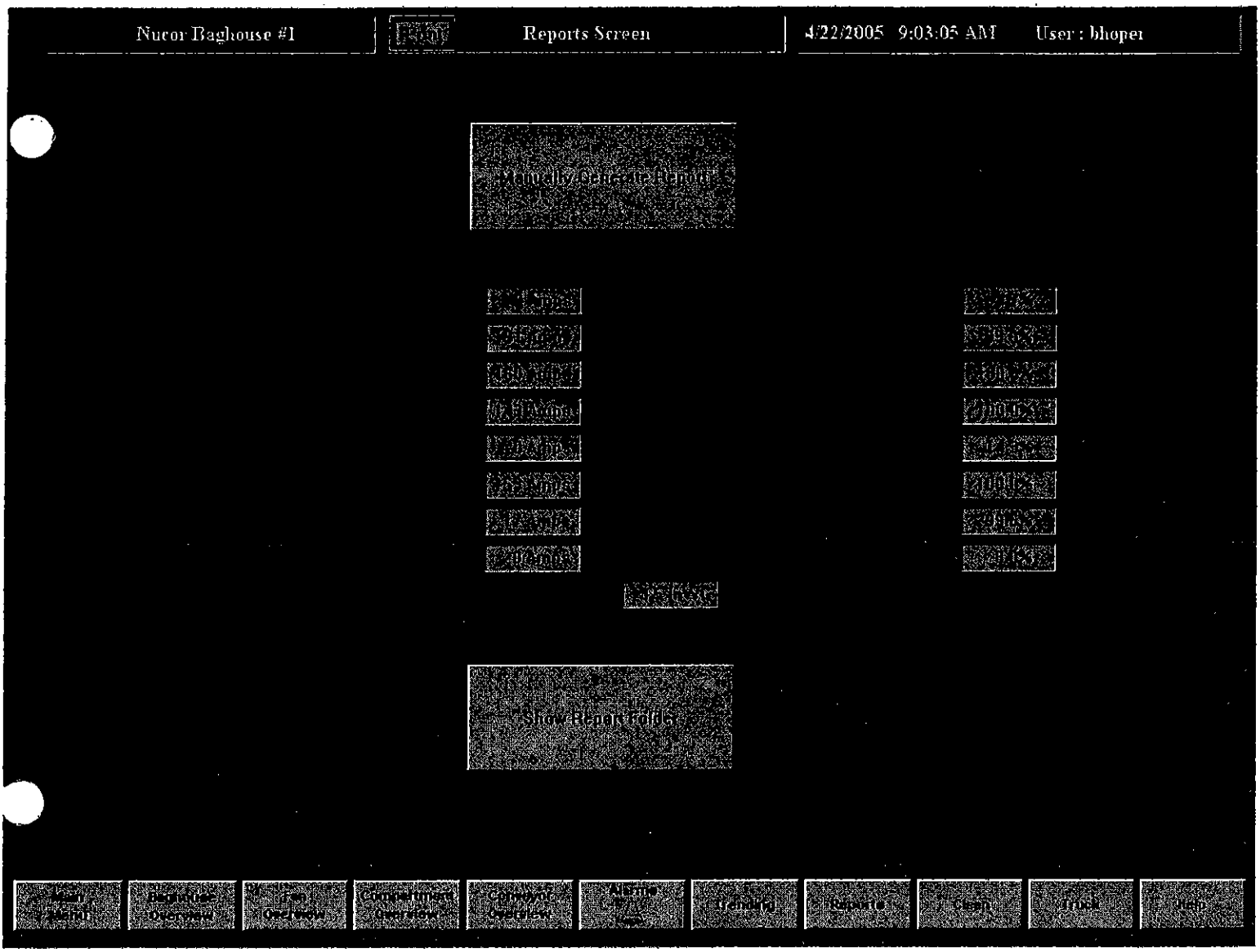
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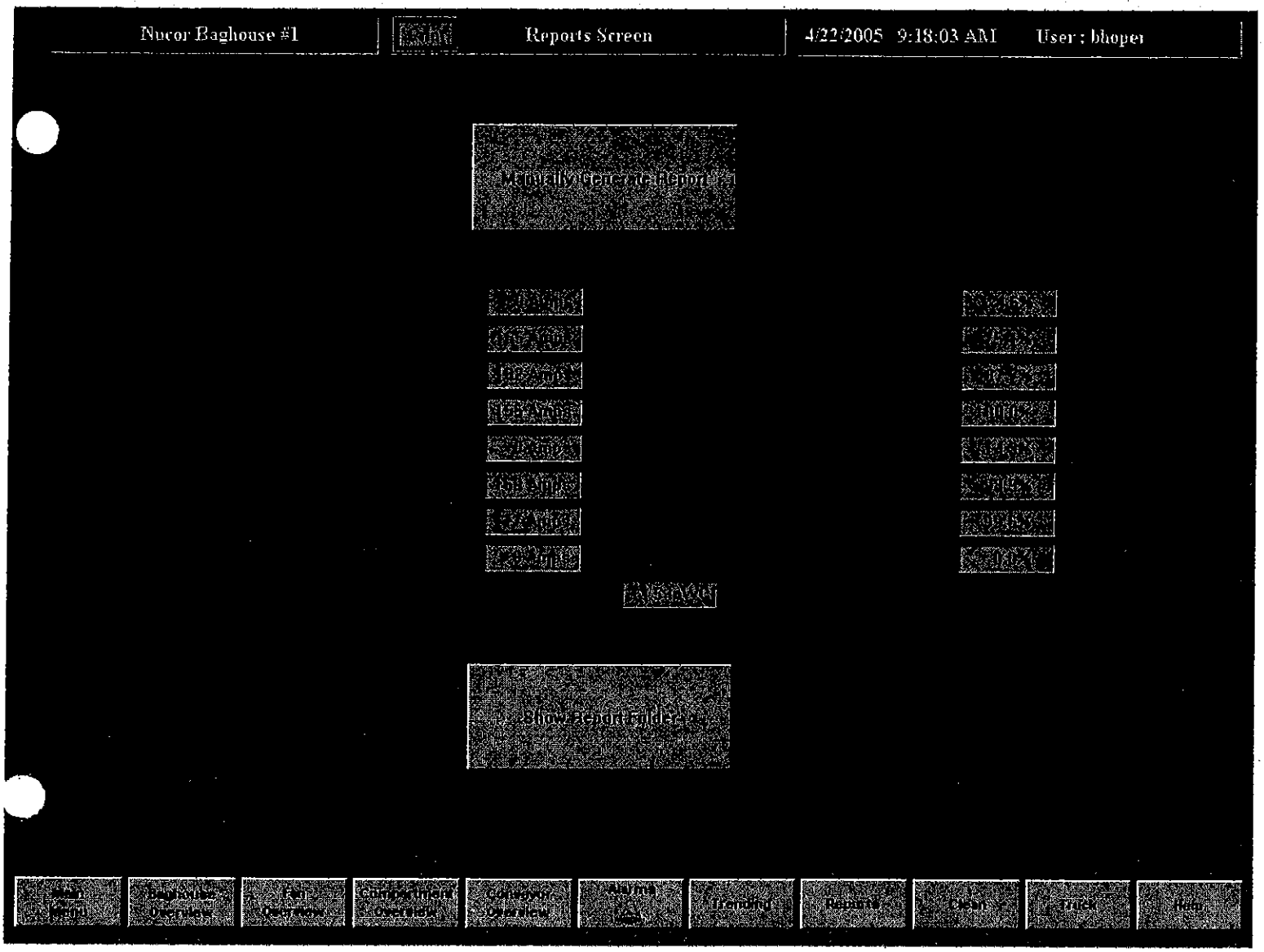
Show Report Folder

8-1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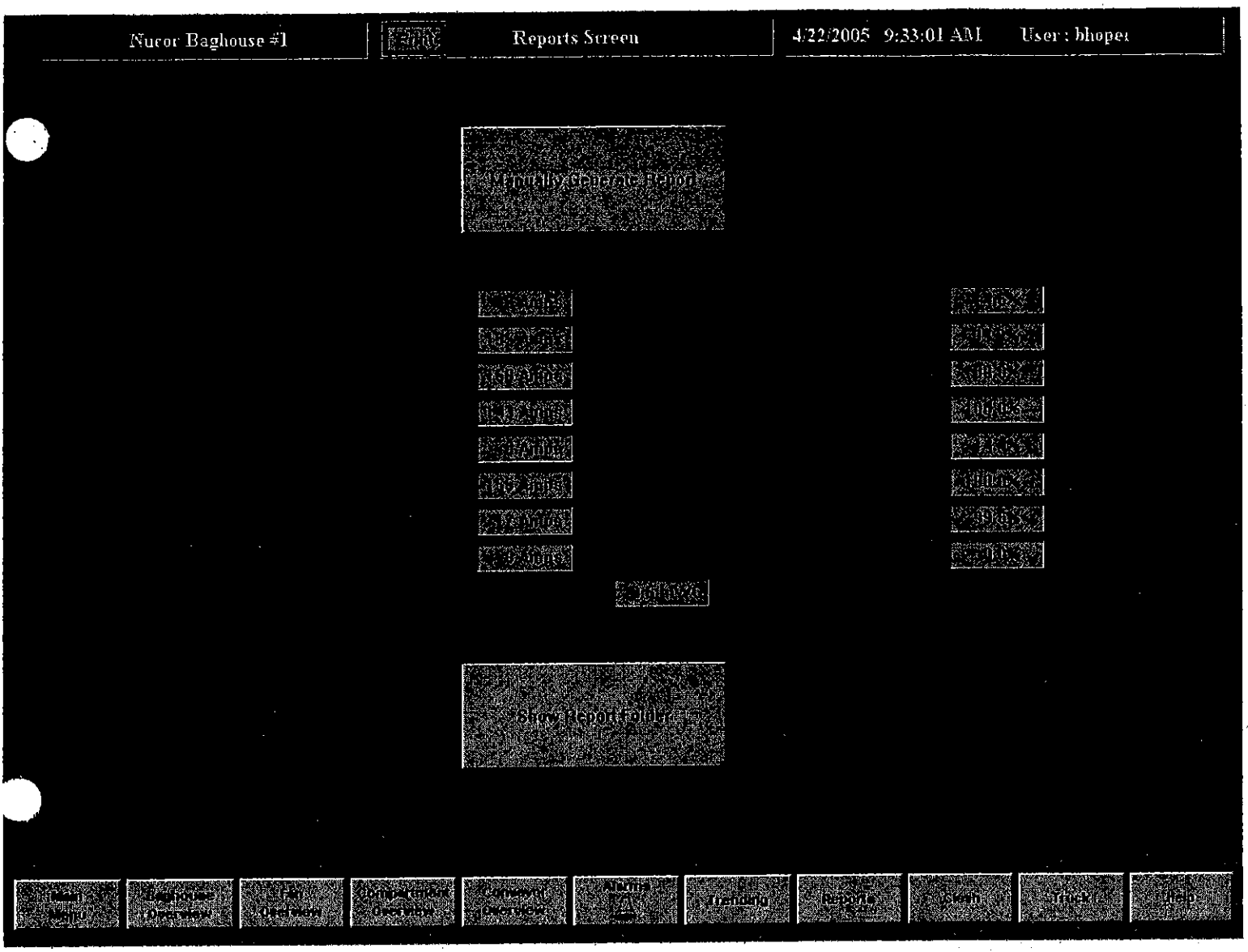
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Show Report Folder
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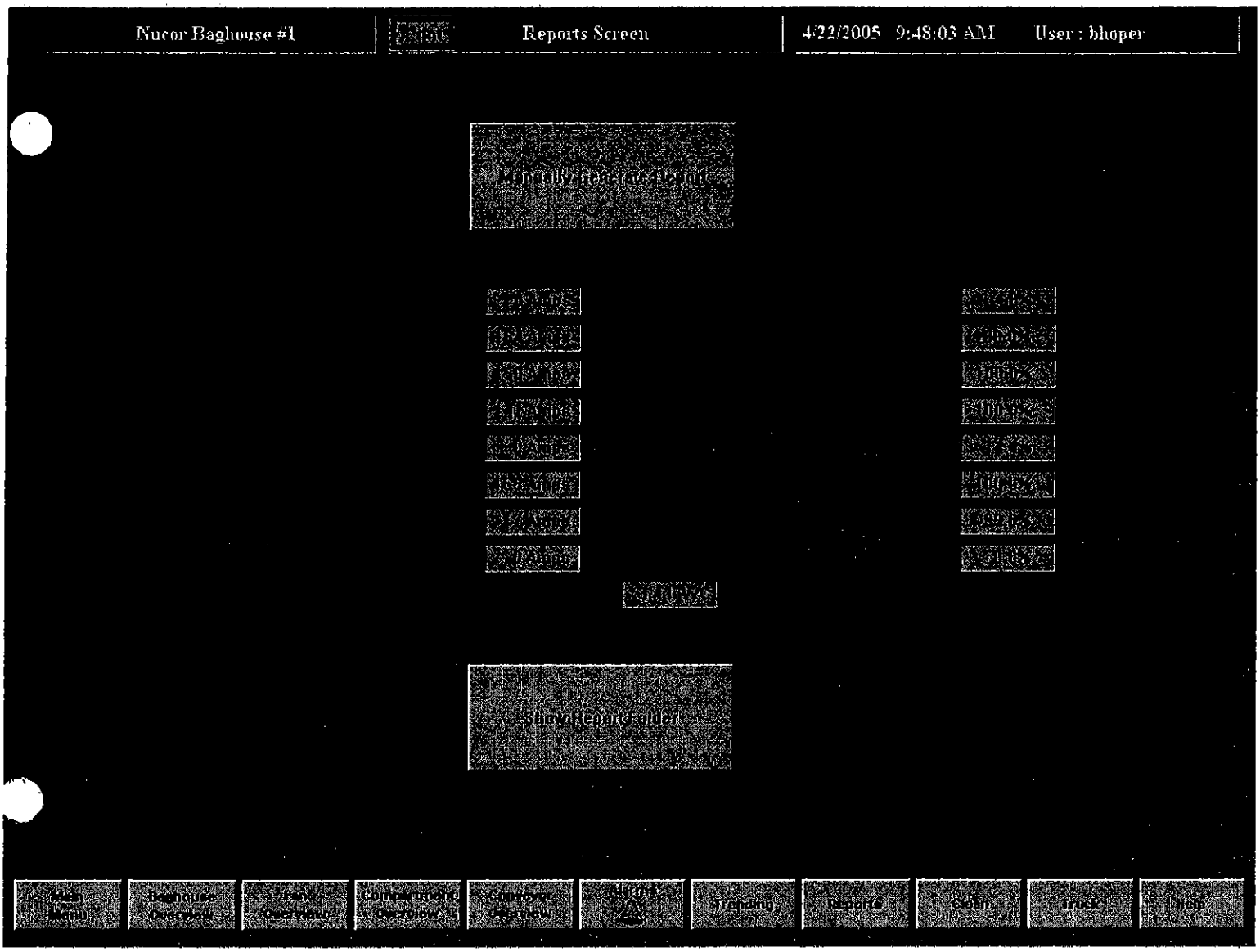
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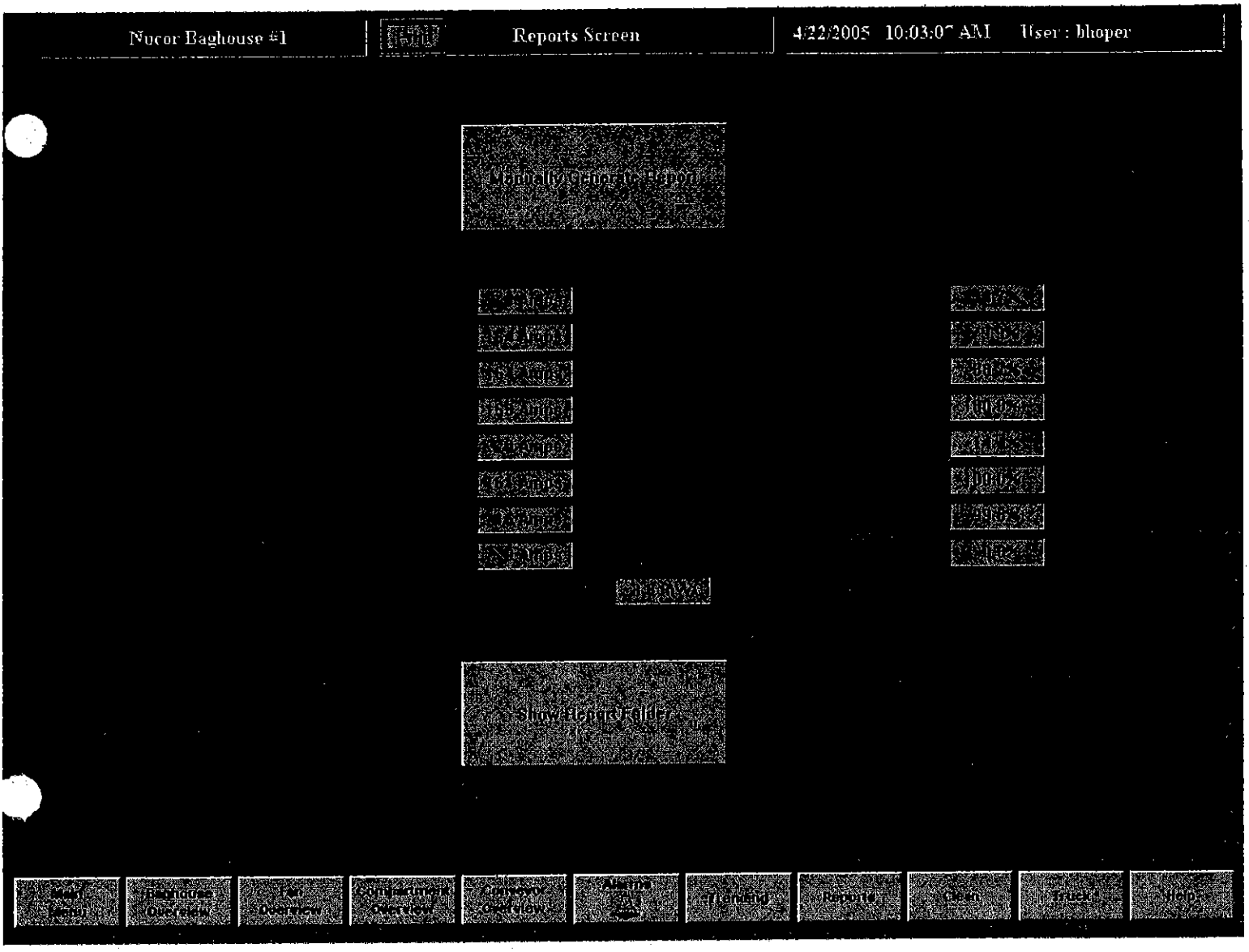
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Alarms
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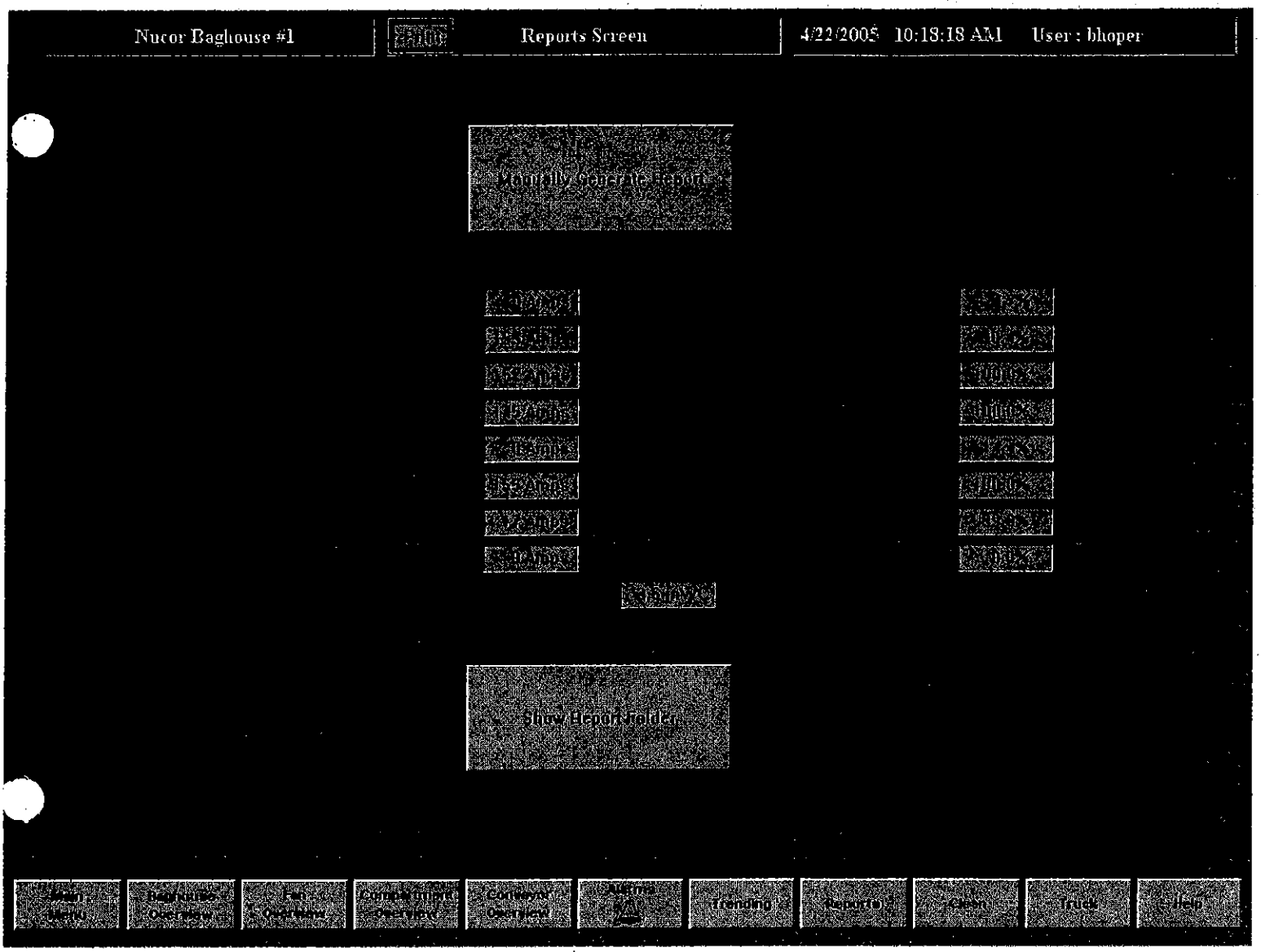
8.4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Training
Reports
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Help

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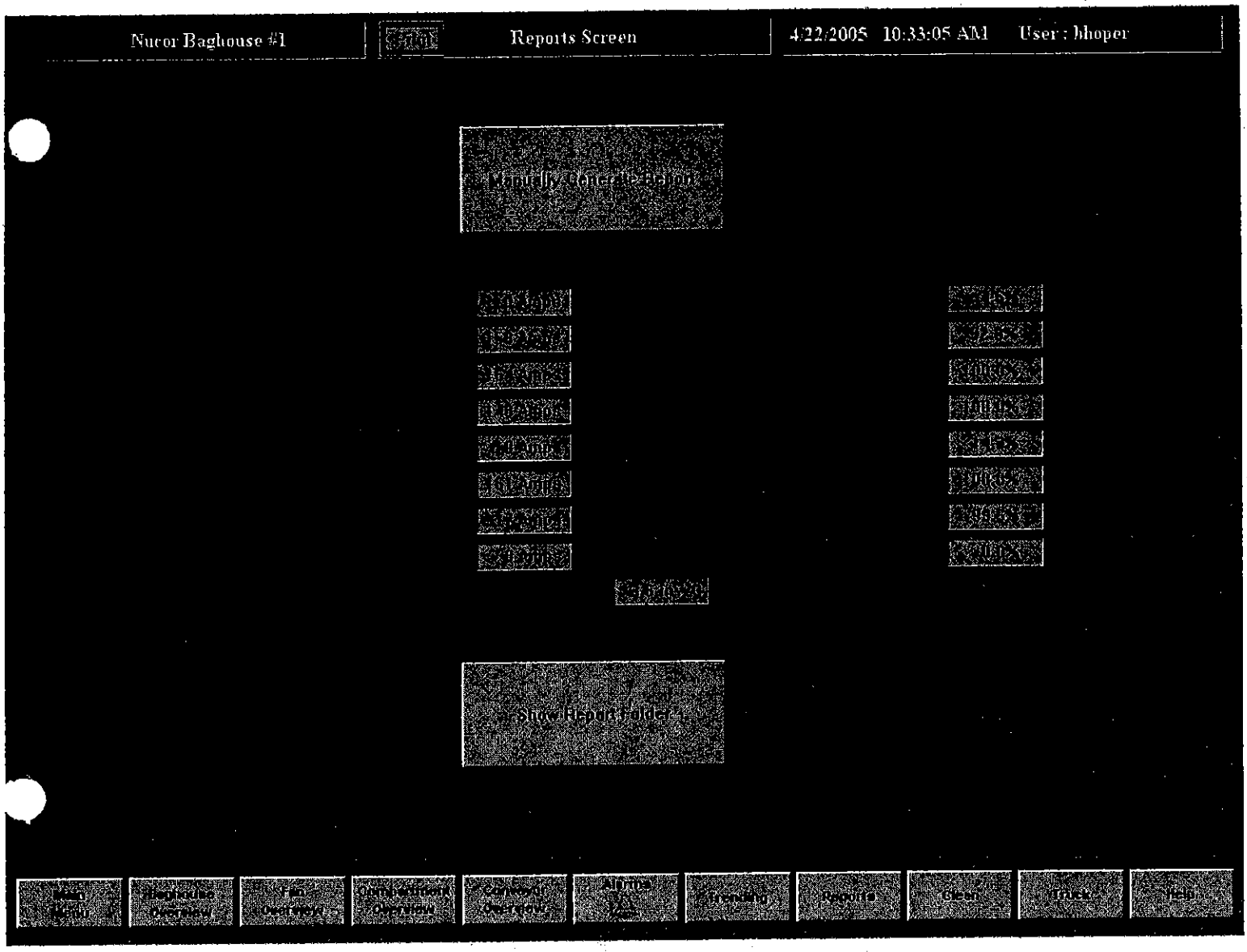
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Manually Generate Report
Show Report Folder

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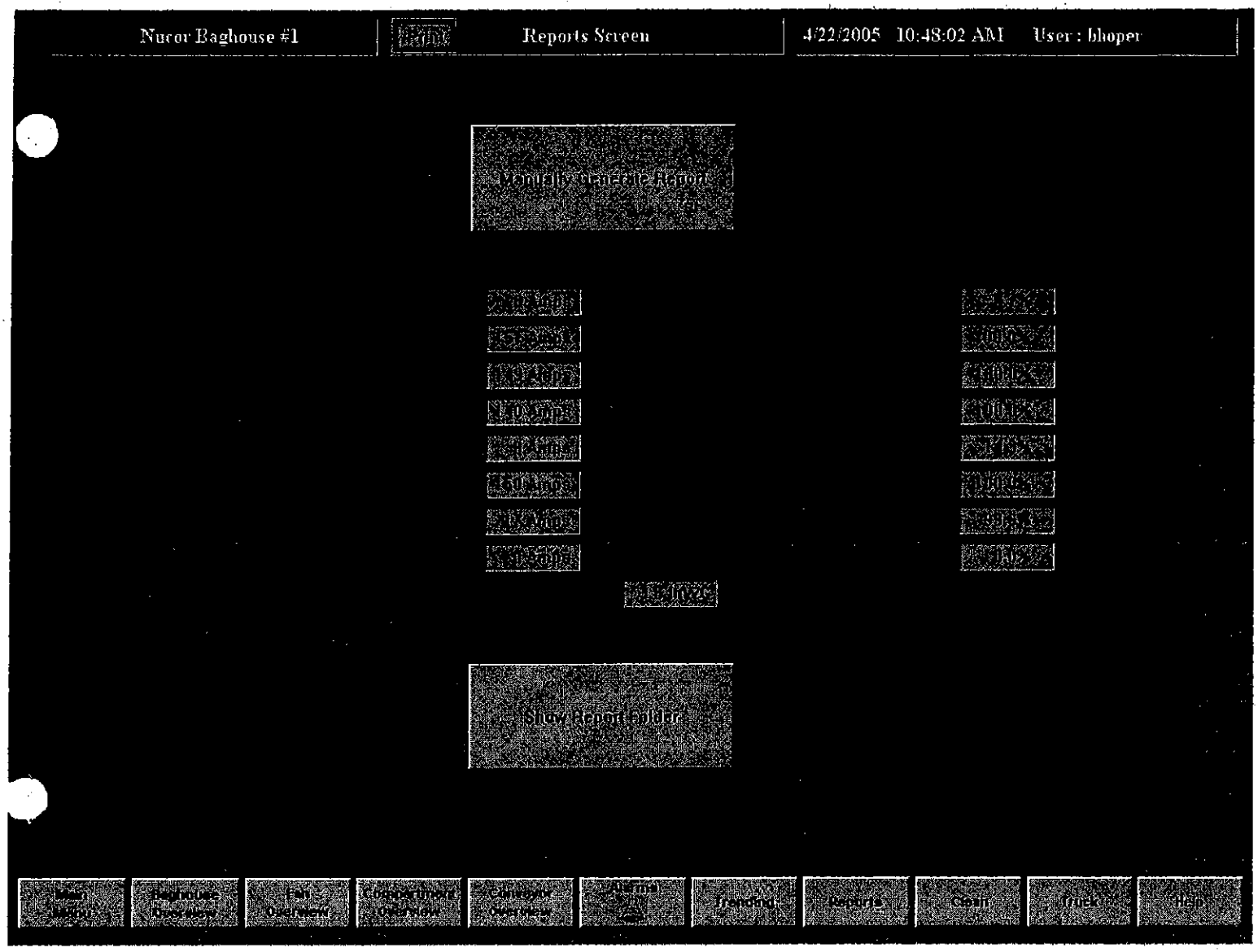
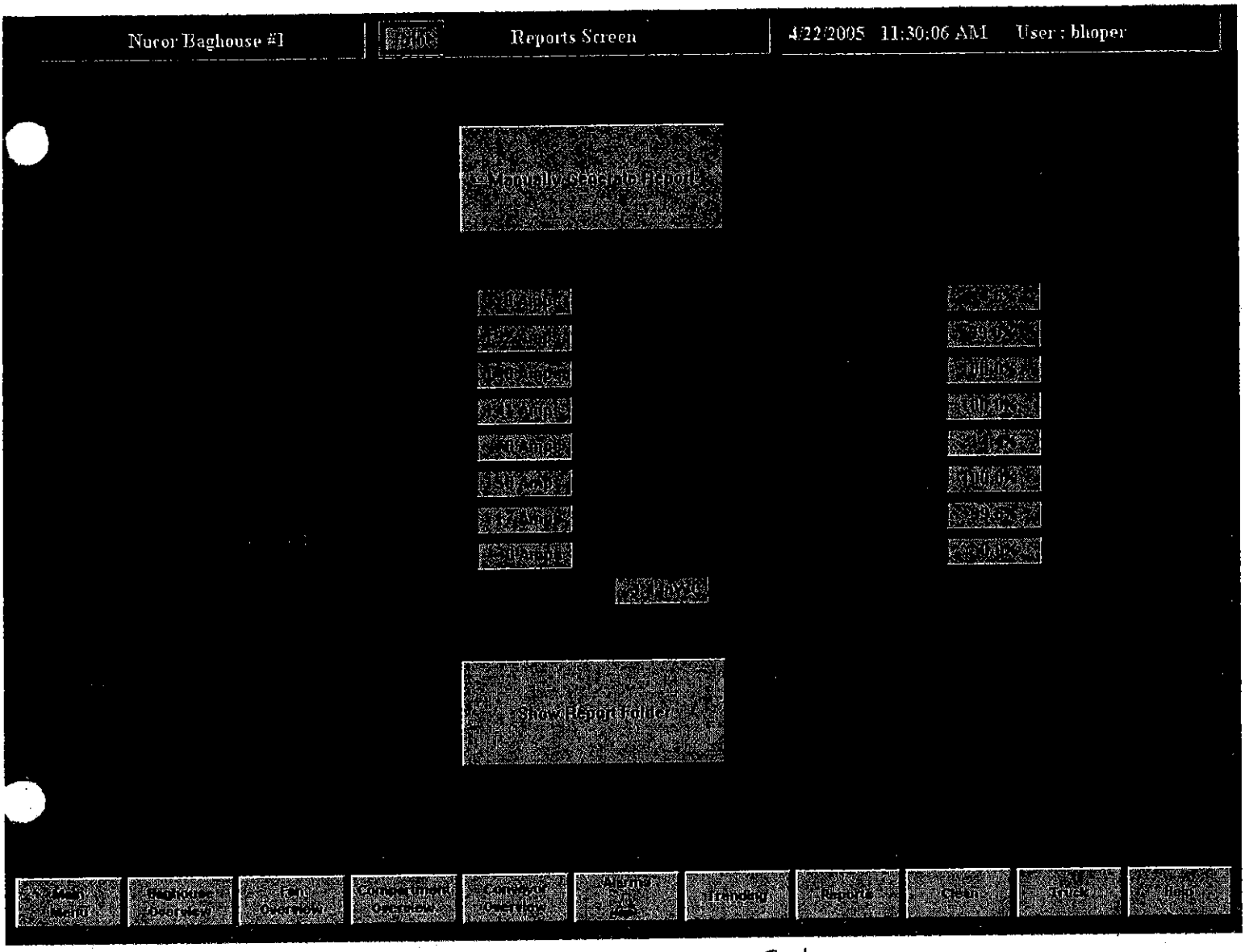


8-0

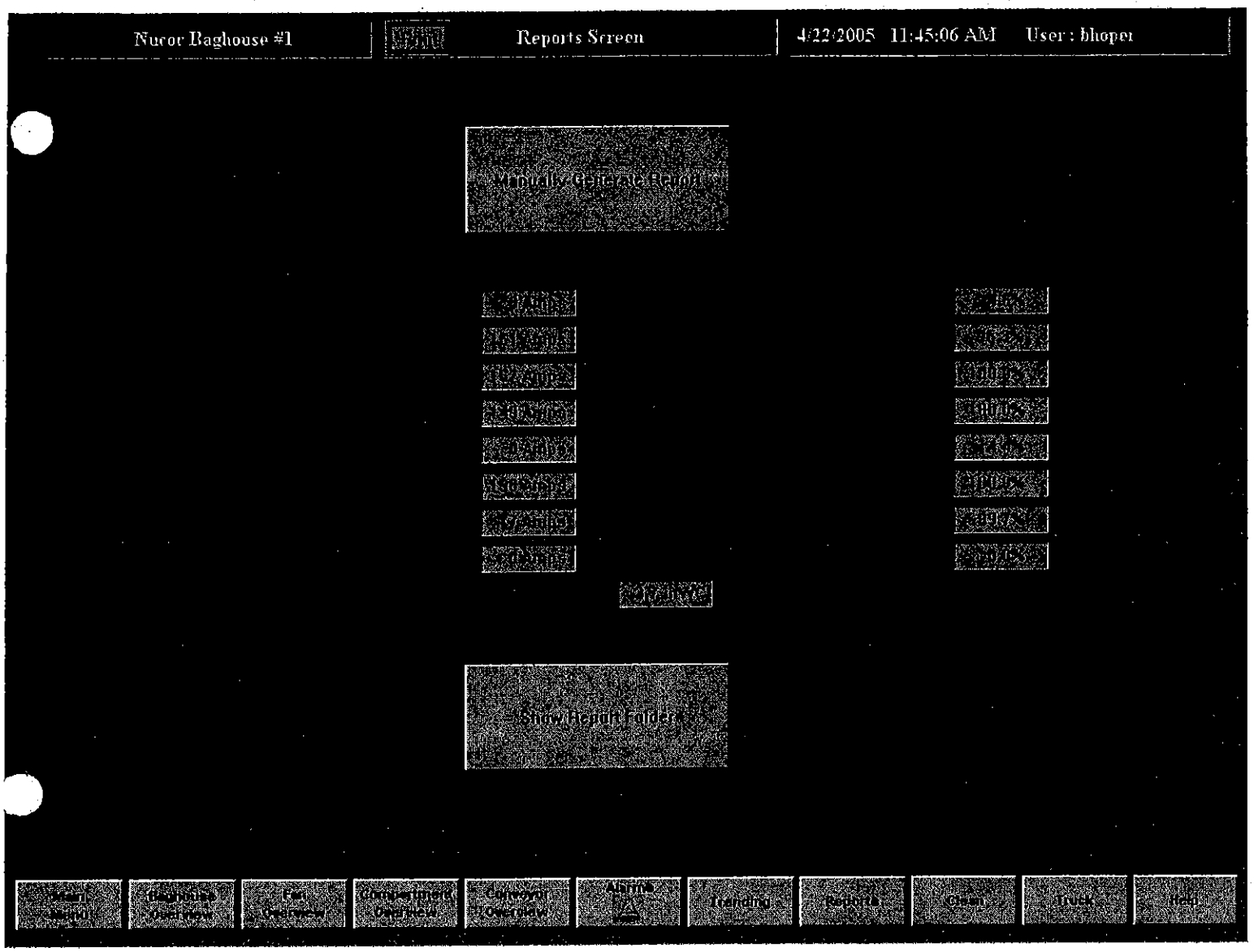
Stop TEST, South Furnace Down waiting on casting TURN Around



8.1

South Furnace Back up and Running

Restart Test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Show Report Folder
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Reports
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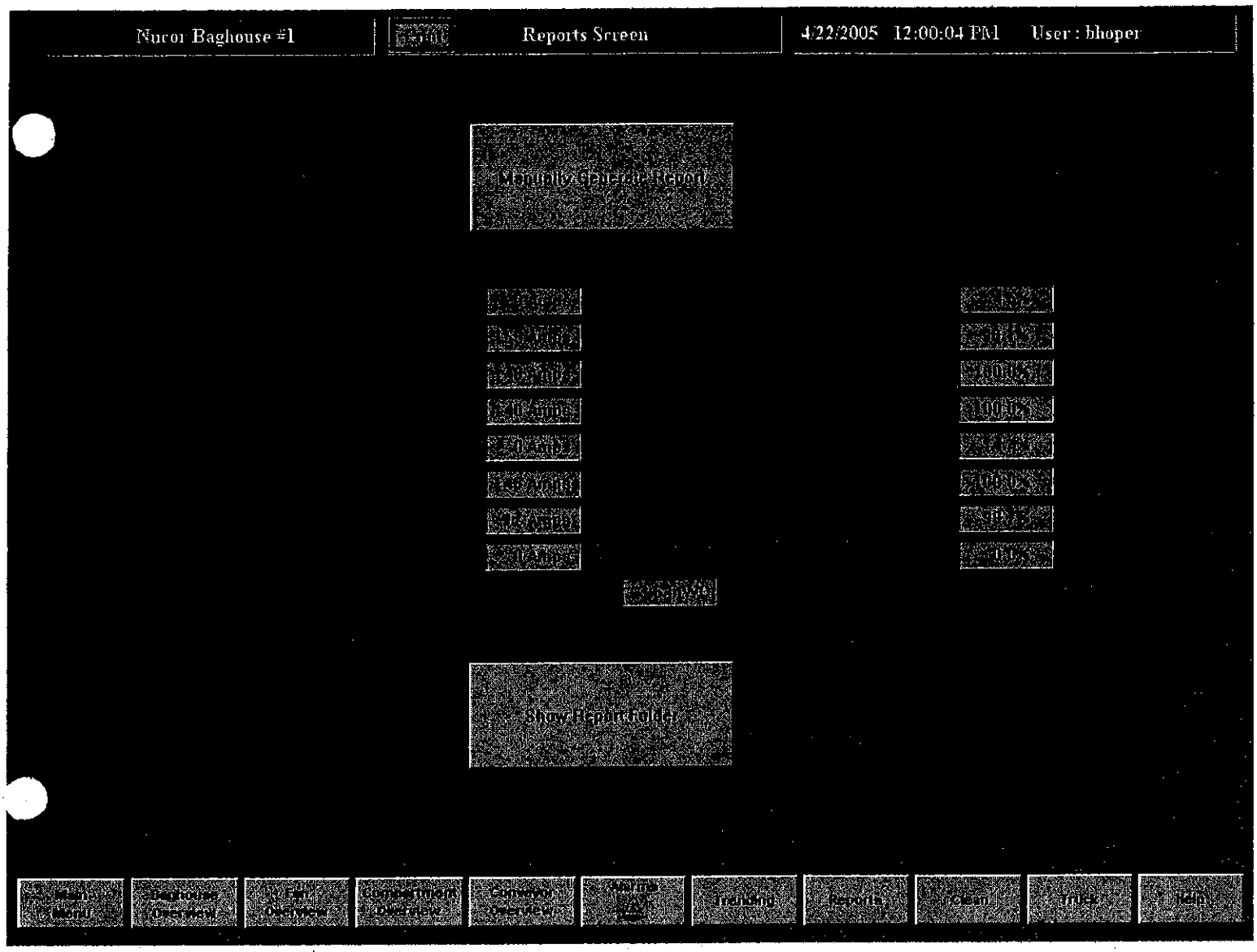
8.6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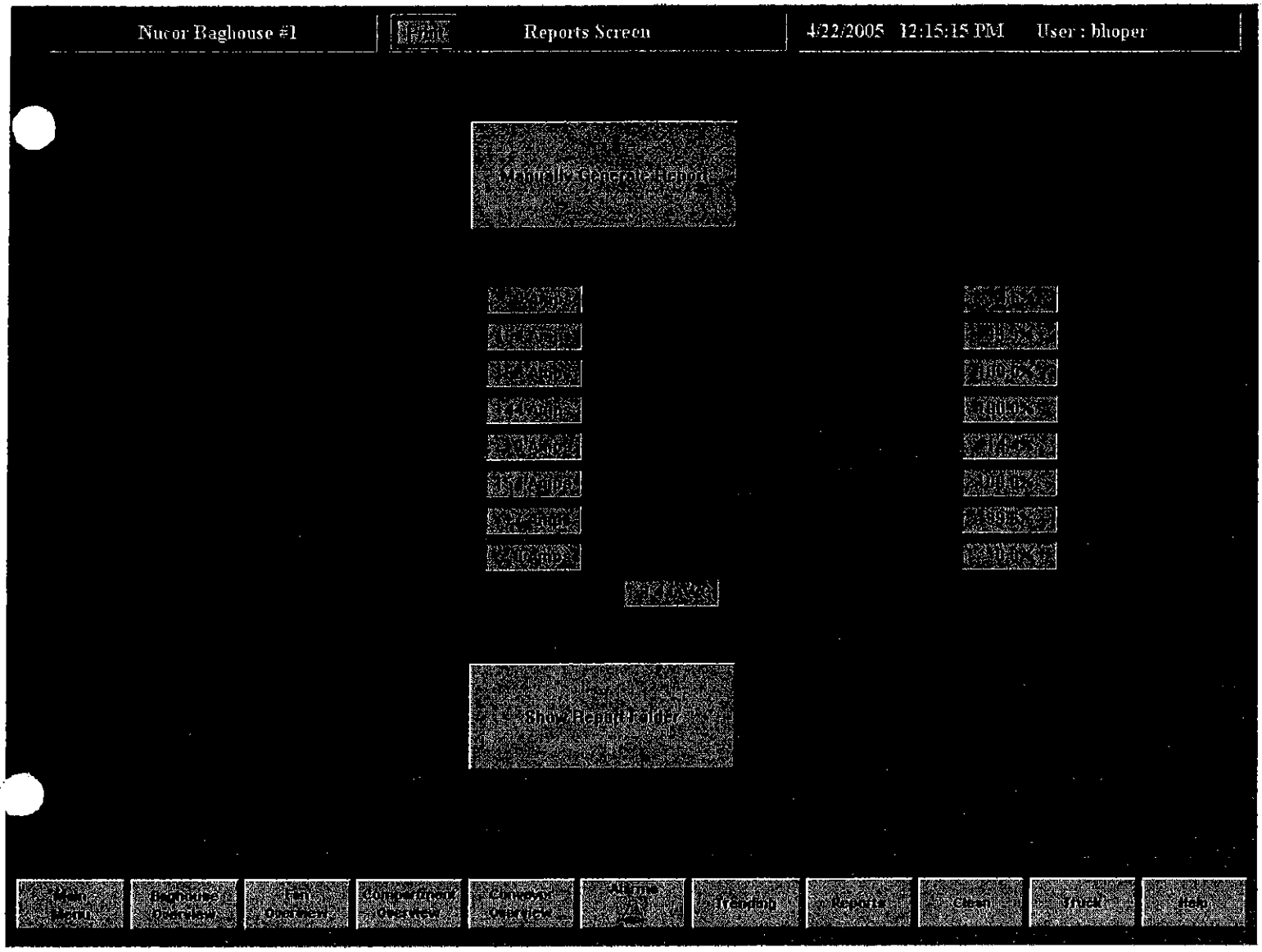
27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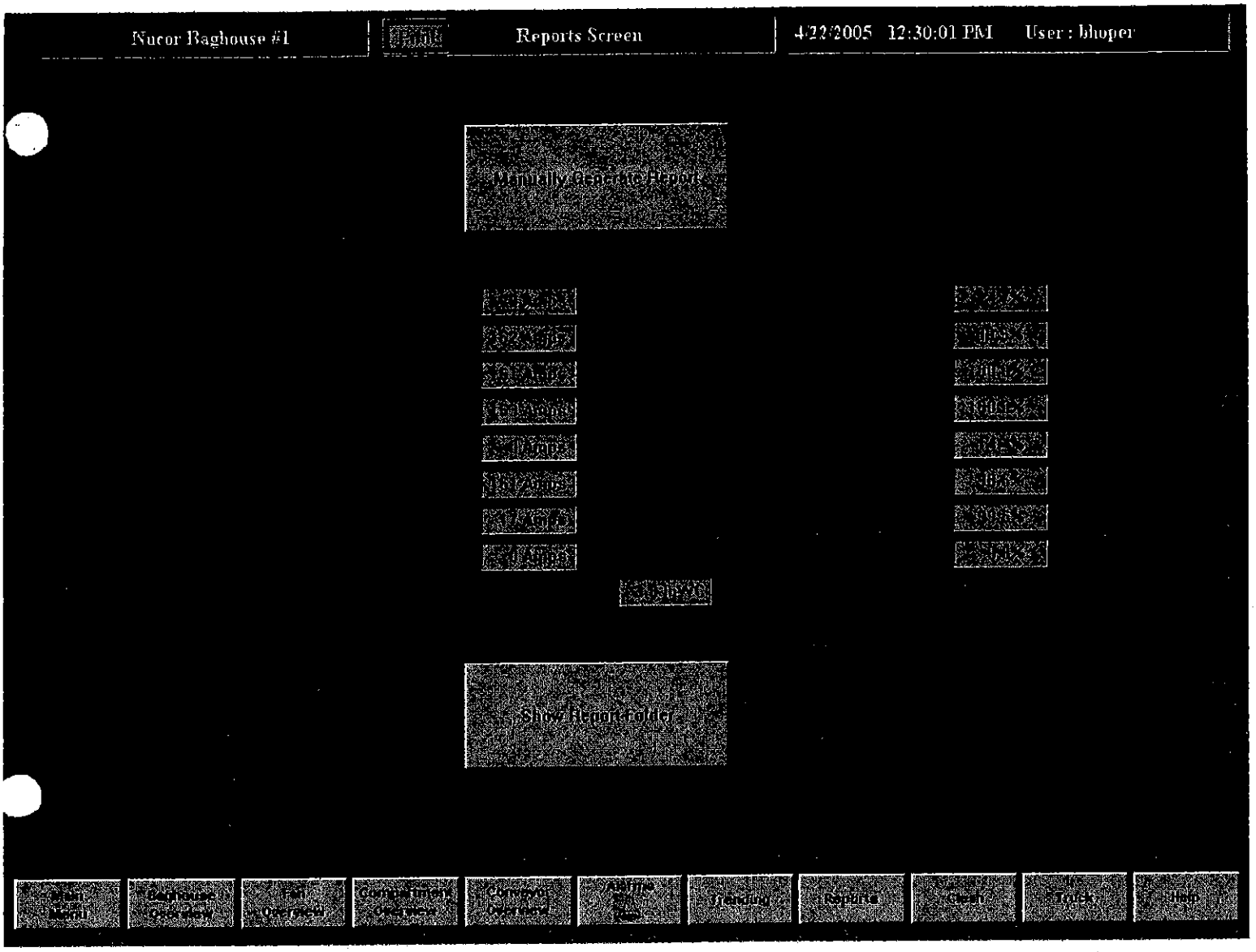
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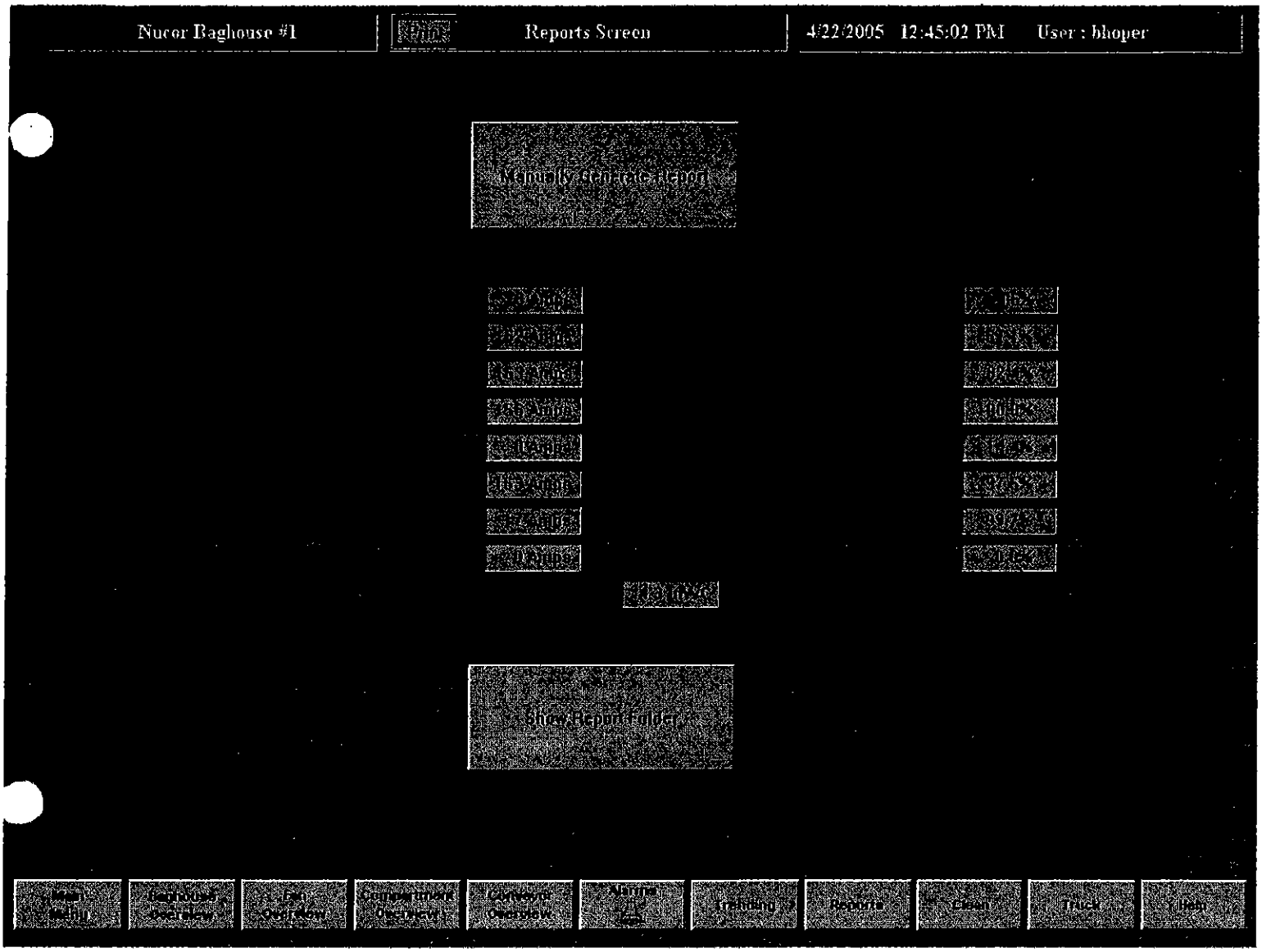
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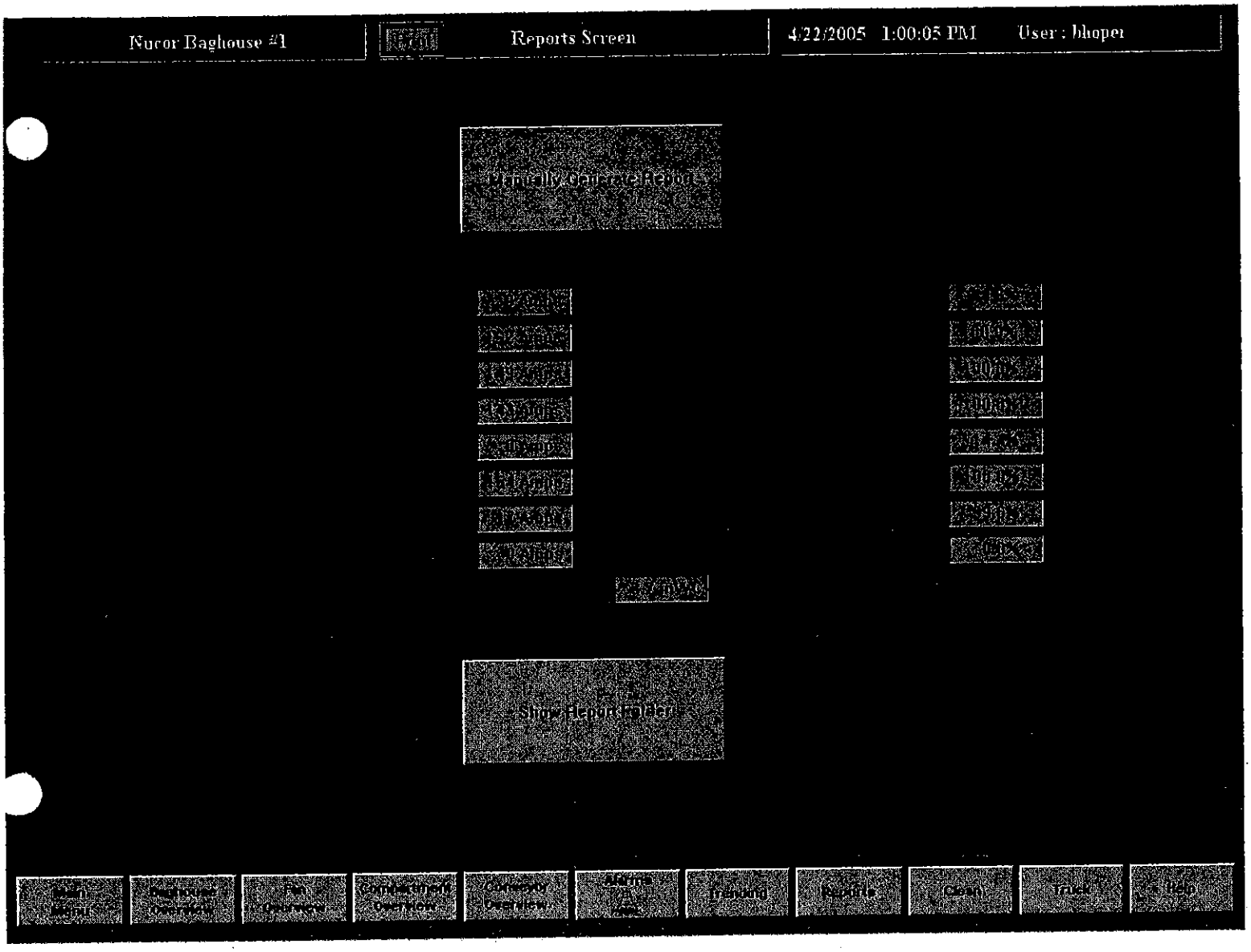
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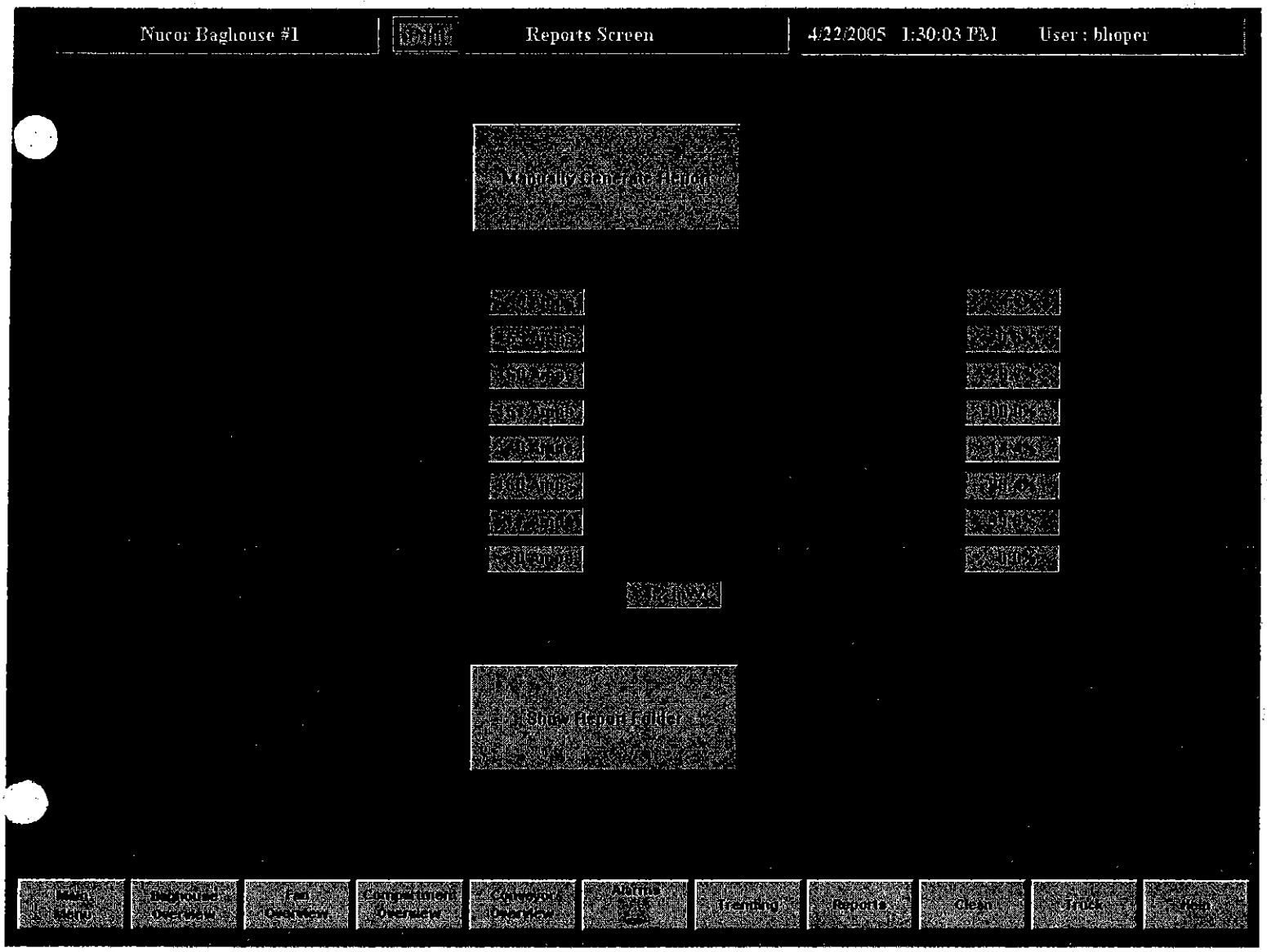
Show Report Folder
Alarms
Reports

8-1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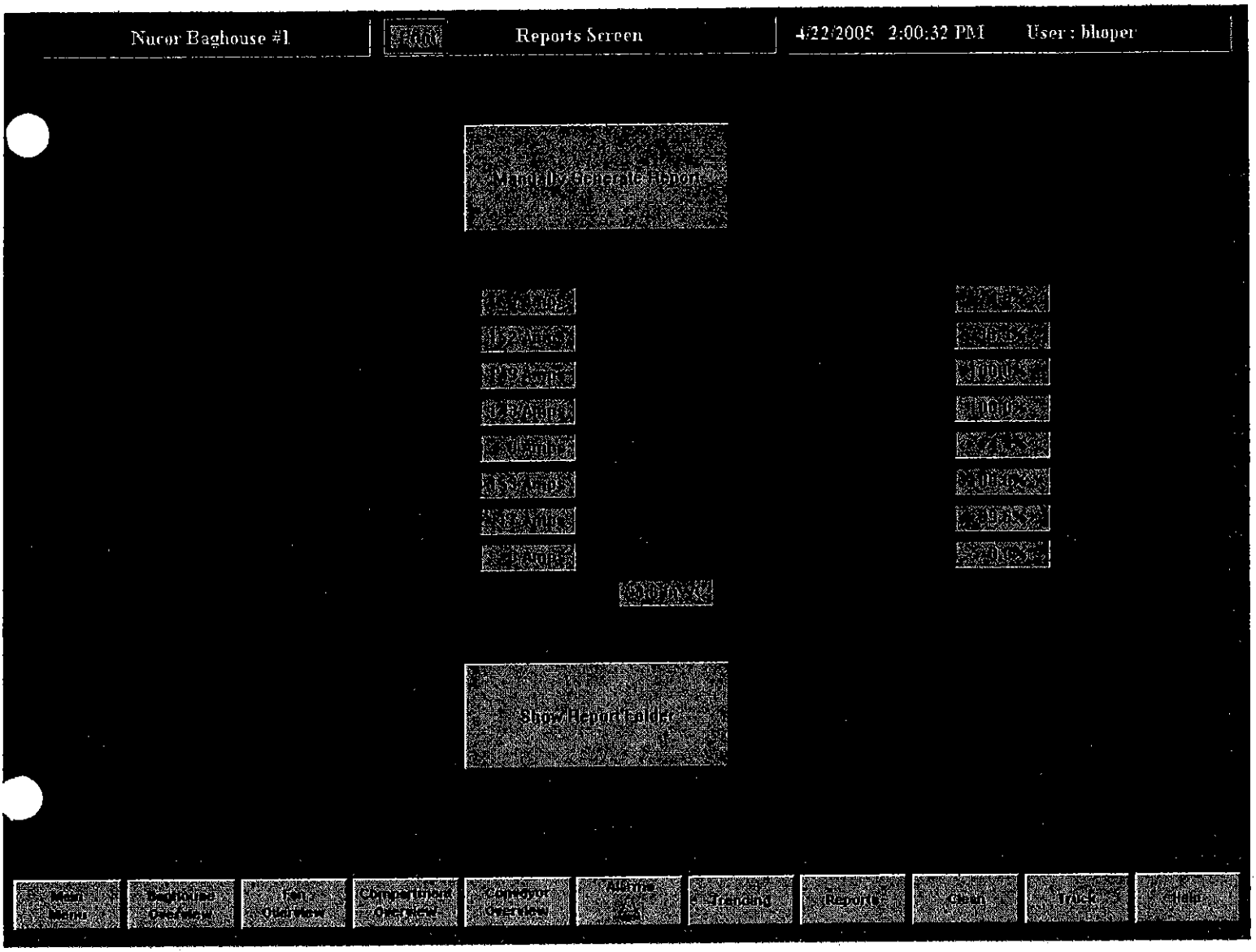
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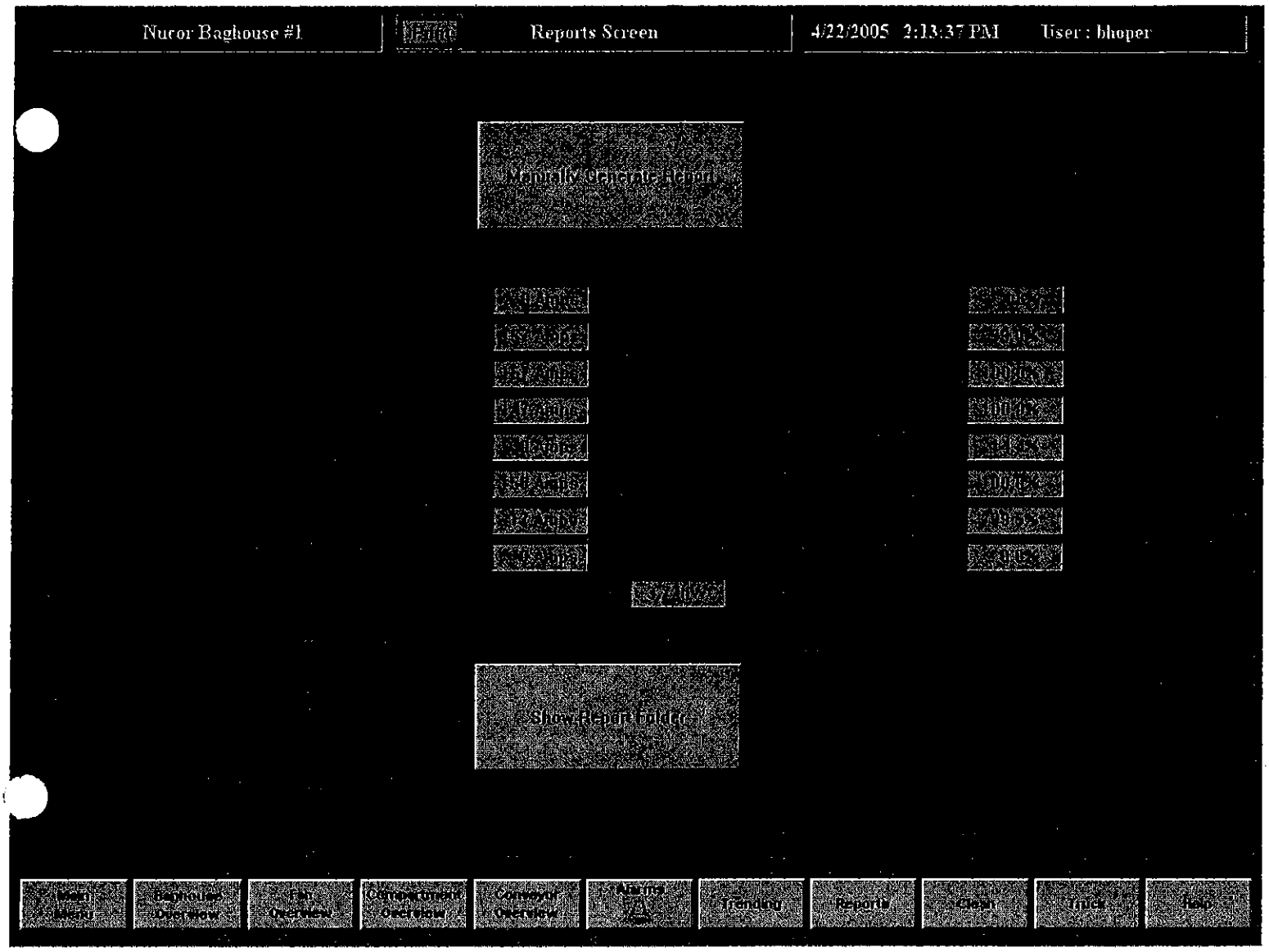
7.8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Reports Screen
4/22/2005 2:13:37 PM
User : bhoper
Show Report Folder
Reports

E-6

ATP – Air Test Professionals, Inc.

1201 North Graham Avenue, Indianapolis, Indiana 4

(317) 345-1720 FAX (317) 351-

REPORT on
PARTICULATE, METALS AND VOC TESTING

Performed for:
Nucor Steel
Crawfordsville, Indiana
PPFF Baghouse #2
on April 18-19, 22, 2005

ATP – Air Test Professionals, Inc.

1201 North Graham Avenue, Indianapolis, Indiana 46219

(317) 345-1720 FAX (317) 351-0411

REPORT on
PARTICULATE, METALS AND VOC TESTING

Performed for:
Nucor Steel
Crawfordsville, Indiana
PPFF Baghouse #2
on April 18-19, 22, 2005

To the best of our knowledge, the data presented in this report is accurate and complete.

Respectfully Submitted by:

Carlos Brown, Project Manager

TABLE OF CONTENTS

1-1 PROJECT OVERVIEW

Air Test Professionals, Inc. was contracted by Nucor Steel to perform air emissions sampling of their Positive Pressure Fabric Filter (PPFF) Baghouse #2, located in Crawfordsville, Indiana on April 18-19, 22, 2005. The objective of the testing was to determine compliance with 40CFR60, Subpart AAa for Particulate Matter (PM) emissions including Condensible Particulate Matter (CPM), Volatile Organic Compound (VOC) emissions, and Metals emissions. Testing was also performed in accordance with paragraph 48 of the Consent Decree to establish operating baselines as required by NSPS at the Electric Arc Furnace. The following personnel were involved with the testing program:

ATP	Carlos Brown
ATP	Andrew Young
ATP	Ron Stapert
Nucor	Mark Washer
Nucor	Rex Kelsey
IDEM	Steve Friend

The testing program included flow and gas analysis (US EPA Methods 1-4), particulate (US EPA Method 5), condensible particulate matter (US EPA Method 202), volatile organic compound emissions (US EPA Method 25A), and metals emissions (US EPA Method 29). Listed below is a summary of the results.

Test Summary

Table 1-1

Pollutant	Location	Emissions Rate (Avgs.) (lbs/hr)	Permitted Limits (lbs/hr)
Lead	PPFF Baghouse #2	0.002	0.134 (Pb)
Mercury		< 0.016	0.023 (Hg)

Pollutant	Location	PM (TSP) Filterable	PM/PM10 Filterable & Condensible
Particulate Matter	PPFF Baghouse #2	0.0003 (gr/dscf)	0.0007 (gr/dscf)
Permitted PM Limits		0.0018 (gr/dscf)	0.0052 (gr/dscf)

Pollutant	Location	VOC Emissions	Permitted Limit
Volatile Organic Compounds	PPFF Baghouse #2	0.027 (lbs/ton)	0.09 (lbs/ton)

1-2 PROJECT OVERVIEW

Test Program

Parameter	Methods	Location	Unit
Gas Velocity / Vol. Flow Rate	EPA RM 1-3	Stack Outlet	Baghouse #2
Particulate (PM)	EPA RM 4-5	Stack Outlet	Baghouse #2
Condensibles (CPM)	EPA RM 202	Stack Outlet	Baghouse #2
Metals	EPA RM 29	Stack Outlet	Baghouse #2
Opacity	EPA RM 9	Stack Outlet	Baghouse #2
Opacity	EPA RM 9	Roof Monitors	*Melt Shop

***NOTE:** Visible emissions data sheets for Melt Shop tests are included with Baghouse #1 Test Report.

The schedule of activities is summarized below:

Schedule of Activities

Date	Run No.	Time
PM Tests		
04/18/2005	1	12:48 – 19:36
04/19/2005	2	08:20 – 16:08
04/22/2005	3	08:33 – 14:14
Metals & VOC Tests		
04/18/2005	1	12:48 – 15:35
04/18/2005	2	16:58 – 19:26
Metals Test		
04/19/2005	3	08:20 – 13:30
VOC Test		
04/19/2005	3	08:20 - 09:52

2-1 RESULTS

FILTERABLE AND CONDENSIBLE PM
PPFF Baghouse

Table 2-1

Gas Conditions		1	2	3	Avg
Ts	Stack Temperature	171.8	156.6	149.0	159.1
Bwo	Moisture (volume %)	2.23	2.15	1.93	2.10
O2	Oxygen (dry volume %)	20.0	20.0	20.0	20.0
CO2	Carbon Dioxide (dry volume %)	0.0	0.0	0.0	0.0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	938,461	949,128	920,303	935,964
Qstd	Standard Conditions (dscfm)	772,653	801,267	781,114	785,012
Emissions Results					
C_{TSP}	Concentration, filterable (gr/dscf)	0.0002	0.0003	0.0004	**0.0003**
C	Concentration, filterable & condensible (gr/dscf)	0.0006	0.0008	0.0007	**0.0007**
Fan Amps / Damper Positions					
	Average Fan Amps	159.8	159.6	159.6	**159.7**
	Average Damper Position	61 %	53 %	57 %	**57 %**

2-2 RESULTS

METALS AND VOC EMISSIONS
PPFF Baghouse

Table 2-1

Gas Conditions		**1**	**2**	**3**	**Avg**
Ts	Stack Temperature	171.7	166.4	156.4	164.8
Bwo	Moisture (volume %)	1.33	1.56	1.47	1.45
O2	Oxygen (dry volume %)	20.0	20.0	20.0	20.0
CO2	Carbon Dioxide (dry volume %)	0.0	0.0	0.0	0.0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	1,038,852	968,442	973,619	993,638
Qstd	Standard Conditions (dscfm)	863,243	809,770	820,262	831,092
Emissions Results					
Lead	Emission Rate (lbs/hr)	0.002	0.003	0.003	**0.002**
Mercury	Emission Rate (lbs/hr)	0.015	0.017	0.016	**0.016**
VOC	Emission Rate (lbs/ton)	0.027	0.023	0.031	**0.027**

2-3 RESULTS

VISIBLE EMISSIONS - OPACITY

PPFF Baghouse #2
Table 2-1

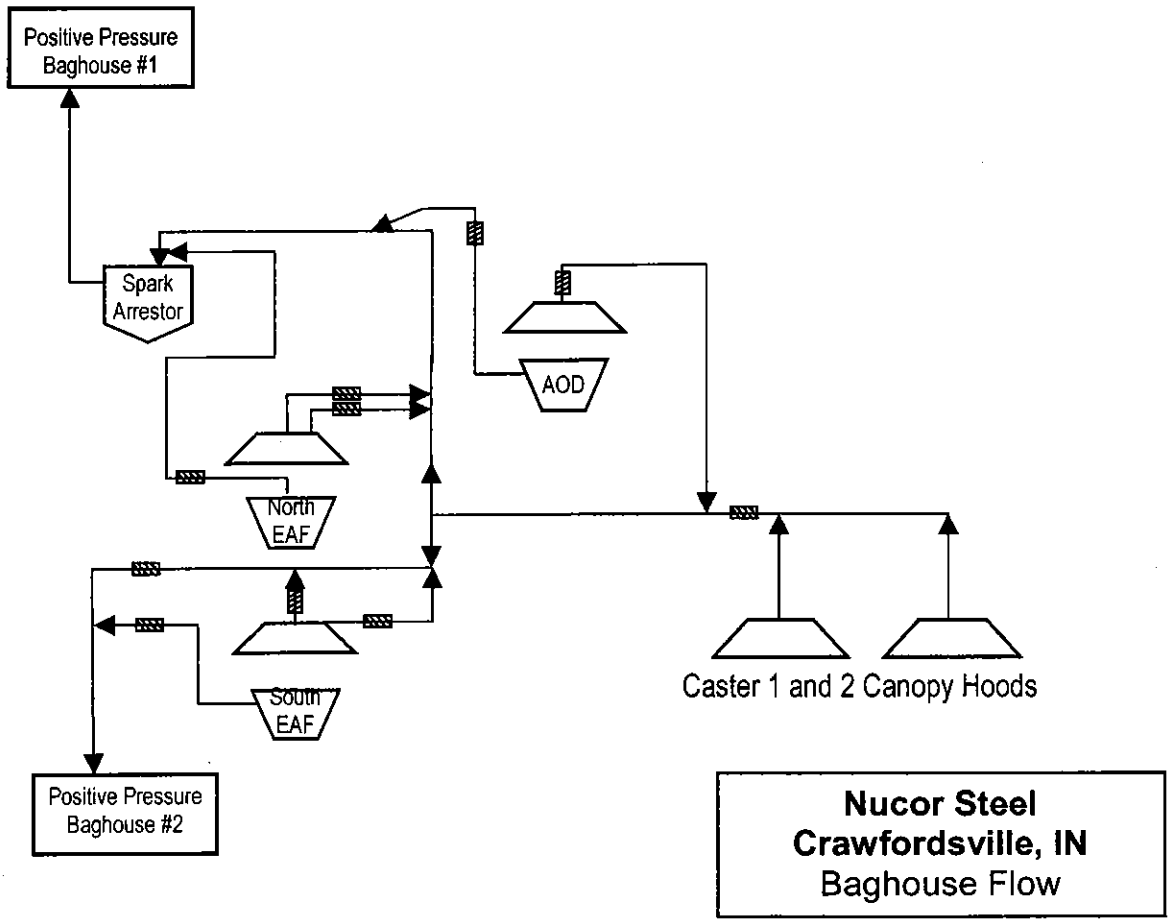
Run No.	**1**	**2**	**3**	Average
Date	April 18, 2005	April 19, 2005	April 22, 2005	
Start Time (approx)	12:47	08:20	09:00	
Stop Time (approx)	16:45	15:15	13:00	
Visible Emissions				
Opacity (EPA RM 9)	0.0	0.0	0.0	**0.0 %**

3-1 PROCESS DESCRIPTION

Nucor Steel operates a meltshop which is comprised of the following process units: Two (2) EAF units, one ladle metallurgy station, one (1) Argon-Oxygen Decarburization (AOD) furnace and two (2) continuous thin slab casters. All of these emission units are evacuated through two (2) positive-pressure filter fabric baghouses.

The EAF units melt various grades of scrap metal, scrap substitutes, lime and coke into molten steel. The molten steel is refined into various grades of steel at the ladle metallurgy station or refined into stainless steel at the AOD. The molten steel from the ladle metallurgy station or AOD is cast into continuous thin slabs at the two continuous casters.

The emissions from the EAF units, AOD, and casters are generated from melting, refining, charging, tapping, and casting operations and are captured in direct shell evacuation systems (DES or 4th hole) and overhead canopy hoods. Prior to 2005, all captured emissions were evacuated through Baghouse #1. In 2005, Nucor commissioned Baghouse #2. The arrangement of the baghouses is such that the all captured emissions from the 4th hole duct of the South furnace are evacuated through Baghouse #2 and all captured emissions from the 4th hole duct of the North furnace are evacuated through Baghouse #1. Emissions from the overhead scavenger hoods may split between both baghouses. Please refer to the schematic below.



4-1 METHODOLOGY

The sampling procedures utilized by Air Test Professionals, Inc. were as follows:

Title 40 CFR Part 60 Appendix A

Method 1	"Sampling of Velocity Traverses for Stationary Sources"
Method 2	"Determining of Stack Gas Velocity and Volumetric Flow Rate"
Method 3	"Gas Analysis for the Determination of Molecular Weight"
Method 4	"Determination of Moisture Content in Stack Gas"
Method 5	"Determination of Particulate Emissions from Stationary Sources"
Method 25A	"Determination of Volatile Organic Compounds from Stationary Sources"
Method 29	"Determination of Metals Emissions from Stationary Sources"

Title 40 CFR Part 51 Appendix M

Method 202	"Determination of Condensible Particulate Emissions from Stationary Sources"

SAMPLE POINT DETERMINATION

Sampling point locations were determined according to EPA Reference Method 1.

Sampling Points
Table 4-1

Location	Dimensions	Points / port	Total Points
Baghouse	25' x 25' ID	5	25

4-2 METHODOLOGY

VELOCITY AND VOLUMETRIC FLOW RATE – EPA METHOD 2
EPA Method 2 was used to determine the gas velocity and flow rate at the stack. Figure 4-2 includes the components of the EPA Method 2 sampling apparatus. Each set of velocity determinations included the measurement of gas velocity pressure and gas temperature at each of the Method 1 determined traverse points. The velocity pressures were measures with a Type S pitot tube. Gas temperature measurements made with a Type K thermocouple and digital pyrometer.

GAS COMPOSITION AND MOLECULAR WEIGHT – EPA METHOD 3
In order to determine the oxygen and carbon dioxide concentrations, a sample of gas was obtained and analyzed in accordance with EPA Method 3. The gas sample was collected using a Fyrite analyzer. The results were used to determine gas molecular weight.

MOISTURE CONTENT – EPA METHOD 4
The flue gas moisture content at the testing locations was determined in accordance with EPA Method 4. The gas moisture was determined by quantitatively condensing moisture in the chilled impingers and silica absorption. The amount of moisture condensed was determined gravimetrically. A dry gas meter was used to measure the volume of gas sampled. Moisture content is used to determine stack gas velocity.

PARTICULATE/CONDENSIBLE DETERMINATION – EPA METHOD 5/202
Stack gas is withdrawn isokinetically and particulate matter is collected on the nozzle and filter. Condensible particulate is captured in the first three impingers; each impinger contains 100 mls of deionized water. A fourth and final impinger contains an amount of approximately 200 grams of silica gel. The impinger temperature exit gas is maintained at or below 68 degrees Fahrenheit.

The nozzle and glass filter holder are rinsed with acetone and captured in a sealed glass container. The impingers and connecting glassware are rinsed twice with deionized water and captured in a sealed container. Two rinses of methylene chloride were captured and stored in a sealed container

DETERMINATION OF METALS EMISSIONS – EPA METHOD 29
Stack gas is withdrawn isokinetically and particulate matter is collected on the nozzle and filter. Gaseous emissions are collected in an absorbing solution of HNO3/H2O2 (*0.1 N Nitric Acid & Hydrogen Peroxide*) in the 2nd and 3rd impingers and then in an aqueous acidic solution of KmnO4 (*Potassium Permanganate*) in the 5th and 6th impingers (*analyzed for Hg*). The 1st and 4th impingers are empty and the 7th impinger contains approximately 200 grams of silica gel. Impinger exit gas temperature is maintained at or below 68 degrees F.

The nozzle and filter holder are rinsed with 100 ml of 0.1 N HNO3 and cleaned with a Teflon brush and collected in a jar. Impingers 1, 2 and 3 are measured for moisture pick-up and then collected in a jar before rinsing the impingers with 100 ml 0.1 N HNO3, along with the back-half of the glass filter holder. Absorbing solutions are combined along with the rinse solution. Impinger 4 is measured for moisture pick-up (individually), collected and then rinsed with 100 ml 0.1 N HNO3 which is combined with the moisture pick-up. Impingers 5 and 6 are measured for moisture pick-up, collected in an amber jar with Teflon lid liner and rinsed with 100 ml of KMnO4 and followed by a 100 ml rinse of HPLC water which is combined with the absorbing solution. Impingers 5 and 6 are then rinsed with 25 ml of 8 N HCl and collected in a jar. Silica gel is also weighed for moisture pick-up.

4-2 METHODOLOGY, cont.

VISIBLE EMISSIONS – EPA METHOD 9

Stack opacity readings were taken at 15-second intervals, for 30-minutes per each 60-minutes tested by a certified visible emissions reader. The visible emissions readings were conducted during each of the particulate test runs. The results are reported as an average emissions percentage for each test period. Copies of the visible emissions certification cards are included in Appendix G.

VOC DETERMINATION – EPA METHOD 25A

Flue gas is drawn into a flame ionization analyzer (FIA) that determines organic concentrations and generates an output proportional to the gas concentration. The sample line is heated to 250 degrees F to prevent the development of condensation in the sampling apparatus. Gases used for, either calibrations, fuel, or combustion air, are contained in compressed gas cylinders and are prepared according to the procedure in EPA Protocol No. 1. Calibration gases consist of Zero Gas with less than 0.1 ppmv, Low-level gas at 25 to 35 percent of span, Mid-level gas at 45 to 55 percent of span and High-level gas at 80 to 90 percent of span. Pre-test instrument calibration checks and post-test drift checks are conducted during the test period to validate sampling accuracy. All calibrations and sample measurements are collected and compiled utilizing an electric data-recording device. The sample average is determined by the integration of the output recorded over the period specified in the applicable regulation.

This method is applicable for the measurement of aromatic hydrocarbons and is expressed in terms of propane or in terms of carbon.

SAMPLE CALCULATIONS

1. Volume of water collected (wstd)

$$V_{wstd} = (0.04707)(V_{lc})$$

V_{wstd}	volume of water collected at standard conditions (ft^3)
V_{lc}	total volume of liquid collected in impingers and silica (ml)
0.04707	conversion factor (ft^3/ml)

2. Volume of gas metered at standard conditions (dscf)

$$V_{mstd} = \frac{(17.64)(V_m)\left(P_{baro} + \frac{\Delta H}{13.6}\right)(\Gamma_d)}{(460 + T_m)}$$

V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
V_m	volume of sample gas through dry gas meter at meter conditions (ft^3)
P_{baro}	barometric pressure (in Hg)
ΔH	average pressure drop across meter box orifice (in H_2O)
Γ_d	gas meter correction factor (dimensionless)
T_m	average dry gas meter temperature (°F)
17.64	conversion factor (°R/in Hg)
13.6	conversion factor (in H_2O/in Hg)
460	conversion constant, °F to °R

3. Sample gas pressure (in Hg)

$$P_s = P_{baro} + \left(\frac{P_g}{13.6}\right)$$

P_s	absolute sample gas pressure (in Hg)
P_{baro}	barometric pressure (in Hg)
P_g	sample gas static pressure (in H_2O)
13.6	conversion factor (in H_2O/in Hg)

4. Actual vapor pressure (in Hg)

$$P_v = P_s$$

P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

5. Moisture content (%)

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

B_{wo}	portion of water vapor in the gas stream by volume (%)
V_{wstd}	volume of water collected at standard conditions (ft^3)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)

6. Saturated moisture content (%)

$$B_{ws} = \frac{P_v}{P_s}$$

B_{ws}	portion of water vapor in gas stream by volume at saturated conditions (%)
P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

7. Molecular weight of dry gas stream (lb/lb-mole)

$$M_d = M_{CO_2}\left(\frac{CO_2}{100}\right) + M_{O_2}\left(\frac{O_2}{100}\right) + M_{CO+N_2}\left(\frac{CO+N_2}{100}\right)$$

M_d	dry molecular weight of sample gas (lb/lb-mole)
M_{CO2}	molecular weight of carbon dioxide (lb/lb-mole)
M_{O2}	molecular weight of oxygen (lb/lb-mole)
M_{CO+N2}	molecular weight of carbon monoxide and nitrogen (lb/lb-mole)
CO_2	portion of carbon dioxide in the gas stream by volume (%)
O_2	portion of oxygen in the gas stream by volume (%)
$CO+N_2$	portion of carbon monoxide and nitrogen in gas stream by volume (%)
100	conversion factor (%)

8. Molecular weight of sample gas (lb/lb-mole)

$$M_s = (M_d)(1 - B_{ws}) + (M_{H_2O})(B_{wo})$$

M_d	dry molecular weight of sample gas (lb/lb-mole)
B_{wo}	portion of water vapor in the gas stream by volume (%)
M_{H2O}	molecular weight of water (lb/lb-mole)
M_s	molecular weight of sample gas, wet basis (lb/lb-mole)

9. Velocity of sample gas (ft/sec)

$$V_s = (K_p)(C_p)(\sqrt{\Delta P})\left(\sqrt{\frac{(t_s + 460)}{(M_s)(P_s)}}\right)$$

V_s	average sample gas velocity (ft/sec)
K_p	velocity pressure coefficient (dimensionless)
C_p	pitot tube constant
ΔP	average differential pressure in the gas stream (in H_2O)
t_s	average sample gas temperature (°F)
M_s	molecular weight of sample gas, wet basis (lb/lb-mole)
P_s	absolute sample gas pressure (in Hg)
460	conversion constant, °F to °R

10. Total flow of sample gas (acfm)

$$Q_a = (60)(A_s)(V_s)$$

Q_a	volumetric flow rate at actual conditions (acfm)
A_s	cross-sectional area of sampling location (ft^2)
V_s	average sample gas velocity (ft/sec)
60	conversion factor (seconds/minute)

11. Total flow of sample gas (dscfm)

$$Q_{std} = \frac{(Q_a)(P_s)(17.64)(1 - B_{wo})}{(t_s + 460)}$$

Q_{std}	volumetric flow rate at standard conditions (dscfm)
Q_a	volumetric flow rate at actual conditions (acfm)
P_s	absolute sample gas pressure (in Hg)
B_{wo}	portion of water vapor in the gas stream by volume (%)
t_s	average sample gas temperature (°F)
17.64	conversion factor (°R/in Hg)
460	conversion constant, °F to °R

12. Percent isokinetic (%)

$$I = \frac{(0.09450)(T_s)(V_{mstd})}{(P_s)(V_s)\left(\frac{(D_n)^2(\pi)}{(144)(4)}\right)(\theta)(1-B_{wo})}$$

I	percent relative to isokinetic sampling (%)
T_s	absolute sample gas temperature (°R)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
P_s	absolute sample gas pressure (in Hg)
V_s	average sample gas velocity (ft/sec)
D_n	diameter of nozzle (inches)
B_{wo}	portion of water vapor in the gas stream by volume (%)
θ	total sample time (minutes)
0.09450	conversion constant

13. Particulate concentration (gr/dscf)

$$C_{gr/dscf} = \frac{(15.43)(M_n)}{V_{mstd}}$$

$C_{gr/dscf}$	measured concentration in gas stream (gr/dscf)
M_n	particulate collected, corrected for reagent blank (grams)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
15.43	conversion factor (grains/gram)

14. Particulate emissions, mass emission rate (lbs/hr)

$$E_{lb/hr} = \frac{(M_n)(Q_{std})}{(7.567)(V_{mstd})}$$

$E_{lbs/hr}$	mass emission rate (lbs/hr)
M_n	particulate collected, corrected for reagent blank (grams)
Q_{std}	volumetric flow rate at standard conditions (dscfm)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
7.567	conversion factor (grams/pound)

15. Gas emission concentration (ppm)

$$C_{gas} = (\overline{C} - C_o)\frac{C_{ma}}{C_m - C_o}$$

C_{gas}	effluent gas concentration (ppm)
C	average gas concentration indicated by gas analyzer (ppm)
C_o	average of initial and final system bias checks for zero gas (ppm)
C_{ma}	actual concentration of the upscale gas (ppm)
C_m	average of initial and final system bias check for upscale cal gas (ppm)

16. VOC emissions, mass emission rate (lbs/hr)

$$VOC_{lb/hr} = \frac{(PPM)(Q_{std})(60)(12)}{(385)(10^6)}$$

$VOC_{lbs/hr}$	mass emission rate (lbs/hr)
PPM	pollutant concentration dry as carbon
Q_{std}	volumetric flow rate at standard conditions (dscfm)
60	per minute to per hour conversion
12	molecular weight factor
385×10^6	ppm to dry standard cubic feet conversion factor

17. Pollutant emission rate (lbs/ton)

$$E_{lbs/ton} = \frac{(E)}{(P_{tons/hr})}$$

$E_{lbs/ton}$	emission rate (lbs/ton)
E	pollutant emission rate (lbs/hr)
$P_{tons/hr}$	facility production rate (tons/hr)

STACK EMISSION SUMMARY

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - PM/PM10
Date:	04/18/05 - 04/22/05

	Run 1	Run 2	Run 3	Average
Particulate Concentration				
Filterable (gr/dscf)	0.0002	0.0003	0.0004	**0.0003**
Filterable & Condsensible (gr/dscf)	0.0006	0.0008	0.0007	**0.0007**
Filterable & Condsensible (lb/hr)	3.7072	5.6825	4.4709	4.6202
Avg. Stack Vol. Flow Rate				
ACFM	938,461	949,128	920,303	935,964
DSCFM	772,653	801,267	781,114	785,012
Avg. Stack Temp	171.8	156.6	149.0	159.1
Stack Gas Velocity	25.03	25.31	24.54	24.96
Avg. Velocity Head	0.166	0.173	0.164	0.168
Avg. Sq. Rt of Delta P	0.407	0.417	0.405	0.409
	ISOKINETIC TESTING SUMMARY			
Allowable isokinetic 90-110%	98.15	97.73	99.38	98.42
% Moisture of Stack Gas	2.23%	2.15%	1.93%	2.10%
Sample Volume	261.902	270.448	268.074	266.808

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - PM/PM10
Date:	04/18/2005
Run Number:	1

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 127.2
Vw (scf) = 5.98730

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 93.6
Vm (ft^3) = 273.333
Pb (in Hg) = 30.15
delta H (in H2O) = 2.917
gamma = 0.99
Vm (dscf) = 261.90

Moisture Content of Stack Gas, Bwo
Bwo = 2.23%
1-Bwo = 97.77%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.56

Area of Stack (enter diameter in inches), As
Depth = 300
Width = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.02
Ps (in Hg) = 30.15

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.407
Ts (F) = 171.8
Vs (fps) = 25.03

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 938,461

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 772,653
Qstd (dscf/hr) = 46,359,180

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.371
Time of Run (min) = 287.50
Vn (fps) = 24.56

Area of Nozzle, An
An (ft^2) = 0.0007507

% Isokinetic, %I
%I = 98.15
% Isokinetic measured from intermediate values
%I = 98.15

Pollutant Mass Emission Rate, PMR

	Filterable	Condensible	Total
Mn (g)	0.0038	0.0057	
PMR (lbs/hr)	1.48	2.22	**3.71**
Grains per acf			
gr/acf =	0.0002	0.0003	0.0005
Grains per dscf			
gr/dscf =	0.0002	0.0003	0.0006

FIELD DATA

K' Factor	16.5

Start Time	12:48
Stop Time	19:36

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.11	0.332		1.82	176	98	98
2	0.12	0.346		1.98	184	94	95
3	0.14	0.374		2.31	177	95	94
4	0.11	0.332		1.82	171	95	94
5	0.09	0.300		1.49	179	92	91
6	0.09	0.300		1.49	176	94	91
7	0.11	0.332		1.82	164	92	91
8	0.08	0.283		1.32	158	94	92
9	0.05	0.224		0.83	165	92	92
10	0.14	0.374		2.31	180	92	92
11	0.08	0.283		1.32	171	92	90
12	0.08	0.283		1.32	171	94	91
13	0.20	0.447		3.30	181	94	92
14	0.15	0.387		2.48	180	96	93
15	0.10	0.316		1.65	170	96	94
16	0.26	0.510		4.29	163	92	91
17	0.26	0.510		4.29	176	94	92
18	0.24	0.490		3.96	182	94	92
19	0.29	0.539		4.79	157	94	92
20	0.27	0.520		4.46	167	94	92
21	0.26	0.510		4.29	176	96	93
22	0.28	0.529		4.62	165	96	94
23	0.28	0.529	1117.533	4.62	166	98	95
24	0.30	0.548	844.2	4.95	172	97	95
25	0.33	0.574		5.45	167	96	95

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.177	0.407	273.333	2.917	171.8	93.6

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - PM/PM10
Date:	04/19/05
Run Number:	2

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 126
Vw (scf) = 5.93082

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 87.2
Vm (ft^3) = 278.874
Pb (in Hg) = 30.15
delta H (in H2O) = 3.073
gamma = 0.99
Vm (dscf) = 270.45

Moisture Content of Stack Gas, Bwo
Bwo = 2.15%
1-Bwo = 97.85%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.57

Area of Stack (enter diameter in inches), As
L = 300
W = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.05
Ps (in Hg) = 30.15

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.417
Ts (F) = 156.6
Vs (fps) = 25.31

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 949,128

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 801,267
Qstd (dscf/hr) = 48,076,037

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.371
Time of Run (min) = 287.5
Vn (fps) = 24.74

Area of Nozzle, An
An (ft^2) = 0.0007507

% Isokinetic, %I
%I = 97.73
% Isokinetic measured from intermediate values
%I = 97.74

Pollutant Mass Emission Rate, PMR

	Filterable	Condensible	Total
Mn (g)	0.0051	0.0094	
PMR (lbs/hr)	1.9987	3.68	5.68
Grains per acf			
gr/acf =	0.0002	0.0005	0.0007
Grains per dscf			
gr/dscf =	0.0003	0.0005	0.0008

FIELD DATA

K' Factor	16.7

Start Time	8:20
Stop Time	16:08

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.21	0.458		3.51	144	87	86
2	0.28	0.529		4.68	156	87	86
3	0.33	0.574		5.51	163	87	86
4	0.16	0.400		2.67	154	89	88
5	0.26	0.510		4.34	164	92	90
6	0.30	0.548		5.01	168	96	93
7	0.20	0.447		3.34	163	99	96
8	0.27	0.520		4.51	155	100	98
9	0.25	0.500		4.18	148	83	82
10	0.17	0.412		2.84	161	84	84
11	0.23	0.480		3.84	136	87	84
12	0.27	0.520		4.51	151	87	84
13	0.19	0.436		3.17	160	87	85
14	0.28	0.529		4.68	157	88	86
15	0.27	0.520		4.51	142	87	86
16	0.14	0.374		2.34	133	84	84
17	0.13	0.361		2.17	152	86	84
18	0.09	0.300		1.50	162	85	84
19	0.08	0.283		1.34	152	86	85
20	0.08	0.283		1.34	163	87	85
21	0.08	0.283		1.34	164	87	85
22	0.08	0.283		1.34	163	86	86
23	0.07	0.265	398.785	1.17	159	86	85
24	0.09	0.300	119.911	1.50	169	86	85
25	0.09	0.300		1.50	177	86	85

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.184	0.417	278.874	3.073	156.6	87.2

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - PM/PM10
Date:	04/22/05
Run Number:	3

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 112.2
Vw (scf) = 5.28125

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 72.4
Vm (ft^3) = 271.529
Pb (in Hg) = 29.87
delta H (in H2O) = 2.957
gamma = 0.99
Vm (dscf) = 266.07

Moisture Content of Stack Gas, Bwo
Bwo = 1.93%
1-Bwo = 98.07%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.59

Area of Stack (enter diameter in inches), As
L = 300
W = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.03
Ps (in Hg) = 29.87

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.405
Ts (F) = 149.0
Vs (fps) = 24.54

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 920,303

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 781,114
Qstd (dscf/hr) = 46,866,869

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.371
Time of Run (min) = 287.5
Vn (fps) = 24.39

Area of Nozzle, An
An (ft^2) = 0.000751

% Isokinetic, %I
%I = 99.38
% Isokinetic measured from intermediate values
%I = 99.38

Pollutant Mass Emission Rate, PMR			
Mn (g)	0.0076	0.0040	
PMR (lbs/hr)	2.9292	1.54	4.47
	Filterable	Condensible	Total
Grains per acf			
gr/acf =	0.0004	0.0002	0.0006
Grains per dscf			
gr/dscf =	0.0004	0.0002	0.0007

FIELD DATA

K' Factor	16.5

Start Time	8:33
Stop Time	14:14

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.13	0.361		2.15	116	58	57
2	0.13	0.361		2.15	131	60	58
3	0.12	0.346		1.98	142	63	59
4	0.09	0.300		1.49	149	64	61
5	0.08	0.283		1.32	138	65	61
6	0.08	0.283		1.32	140	67	63
7	0.10	0.316		1.65	147	69	64
8	0.07	0.265		1.16	164	72	67
9	0.06	0.245		0.99	143	74	69
10	0.07	0.265		1.16	134	75	71
11	0.07	0.265		1.16	148	76	72
12	0.08	0.283		1.32	156	77	73
13	0.08	0.283		1.32	131	76	75
14	0.17	0.412		2.81	128	77	75
15	0.14	0.374		2.31	150	77	75
16	0.24	0.490		3.96	161	77	75
17	0.26	0.510		4.29	147	79	76
18	0.27	0.520		4.46	156	79	76
19	0.31	0.557		5.12	164	79	77
20	0.34	0.583		5.61	170	79	77
21	0.28	0.529		4.62	144	78	77
22	0.30	0.548		4.95	153	80	77
23	0.33	0.574	670.847	5.45	169	81	78
24	0.34	0.583	399.318	5.61	180	83	79
25	0.34	0.583		5.61	164	84	80

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.179	0.405	271.529	2.957	149.0	72.4

STACK EMISSION SUMMARY

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - Metals/VOC
Date:	4/18/05 - 4/19/05

	Run 1	Run 2	Run 3	Average
Pollutant Concentration				
Lead (lbs/hr)	0.002	0.003	0.003	**0.002**
Mercury (lbs/hr)	0.015	0.017	0.016	**0.016**
VOC (lbs/hr)	9.40	8.50	11.64	**9.84**
VOC (lbs/ton)	0.027	0.023	0.031	**0.027**
Avg. Stack Vol. Flow Rate				
ACFM	1,038,852	968,442	973,619	993,638
DSCFM	863,243	809,770	820,262	831,092
Avg. Stack Temp	171.7	166.4	156.4	164.8
Stack Gas Velocity	27.70	25.83	25.96	26.50
Avg. Velocity Head	0.204	0.178	0.181	0.188
Avg. Sq. Rt of Delta P	0.451	0.422	0.426	0.433
	ISOKINETIC TESTING SUMMARY			
Allowable isokinetic 90-110%	98.04	95.42	94.61	96.02
% Moisture of Stack Gas	1.33%	1.56%	1.47%	1.45%
Sample Volume	90.159	82.319	82.673	85.050

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - Metals/VOC
Date:	04/18/2005
Run Number:	1

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 25.9
Vw (scf) = 1.21911

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 93.1
Vm (ft^3) = 94.265
Pb (in Hg) = 30.15
delta H (in H2O) = 1.768
gamma = 0.99
Vm (dscf) = 90.16

Moisture Content of Stack Gas, Bwo
Bwo = 1.33%
1-Bwo = 98.67%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.66

Area of Stack (enter diameter in inches), As
Depth = 300
Width = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.02
Ps (in Hg) = 30.15

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.451
Ts (F) = 171.7
Vs (fps) = 27.70

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 1,038,852

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 863,243
Qstd (dscf/hr) = 51,794,579

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.3125
Time of Run (min) = 125
Vn (fps) = 27.16

Area of Nozzle, An
An (ft^2) = 0.0005326

% Isokinetic, %I
%I = 98.04
% Isokinetic measured from intermediate values
%I = 98.04

Pollutant Mass Emission Rate, PMR

Mn (g)	1.82E-06	1.20E-05
PMR (lbs/hr)	**0.002**	**0.015**
	Lead	Mercury

Grains per acf

gr/acf	2.59E-07	1.71E-06

Grains per dscf

gr/dscf	3.12E-07	2.05E-06

Pollutant Mass Emission Rate, PMR
VOC Conc. (PPM) = 1.94
PMR (lbs/hr) = **9.40**
PMR (lbs/ton) = **0.027**
VOC

FIELD DATA

K' Factor	8.2

Start Time	12:48
Stop Time	15:35

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.32	0.566		2.62	172	96	96
2	0.32	0.566		2.62	175	95	95
3	0.32	0.566		2.62	175	93	93
4	0.32	0.566		2.62	170	93	94
5	0.32	0.566		2.62	170	94	94
6	0.30	0.548		2.46	170	95	93
7	0.28	0.529		2.30	170	95	93
8	0.28	0.529		2.30	182	94	93
9	0.26	0.510		2.13	177	94	93
10	0.25	0.500		2.05	179	94	93
11	0.25	0.500		2.05	181	95	93
12	0.28	0.529		2.30	166	94	93
13	0.22	0.469		1.80	157	93	93
14	0.30	0.548		2.46	158	93	93
15	0.30	0.548		2.46	157	93	93
16	0.15	0.387		1.23	163	93	92
17	0.16	0.400		1.31	177	93	92
18	0.10	0.316		0.82	176	93	92
19	0.10	0.316		0.82	181	93	92
20	0.08	0.283		0.66	167	92	91
21	0.06	0.245		0.49	162	92	91
22	0.12	0.346		0.98	176	92	91
23	0.12	0.346	852.265	0.98	179	93	91
24	0.09	0.300	758	0.74	173	93	91
25	0.09	0.300		0.74	180	93	92

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.216	0.451	94.265	1.768	171.7	93.1

Production Rate

South EAF	151.1 tons/hr
North EAF	93.7 tons/hr
AOD	97.6 tons/hr
Total Avg Tons/hour	**342.6**

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - Metals/VOC
Date:	04/18/05
Run Number:	2

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 27.7
Vw (scf) = 1.30384

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 92.2
Vm (ft^3) = 85.98
Pb (in Hg) = 30.15
delta H (in H2O) = 1.546
gamma = 0.99
Vm (dscf) = 82.32

Moisture Content of Stack Gas, Bwo
Bwo = 1.56%
1-Bwo = 98.44%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.63

Area of Stack (enter diameter in inches), As
L = 300
W = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.02
Ps (in Hg) = 30.15

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.422
Ts (F) = 166.4
Vs (fps) = 25.83

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 968,442

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 809,770
Qstd (dscf/hr) = 48,586,212

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.3125
Time of Run (min) = 125
Vn (fps) = 24.64

Area of Nozzle, An
An (ft^2) = 0.0005326

% Isokinetic, %I
%I = 95.42
% Isokinetic measured from intermediate values
%I = 95.42

Pollutant Mass Emission Rate, PMR

Mn (g)	1.96E-06	1.31E-05
PMR (lbs/hr)	**0.003**	**0.017**
	Lead	Mercury

Grains per acf

gr/acf	3.07E-07	2.05E-06

Grains per dscf

gr/dscf	3.67E-07	2.46E-06

Pollutant Mass Emission Rate, PMR
VOC Conc. (PPM) 1.87
PMR (lbs/hr) 8.50
PMR (lbs/ton) **0.023**
VOC

FIELD DATA

K' Factor	8.2

Start Time	16:58
Stop Time	19:26

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.16	0.400		1.31	163	89	89
2	0.17	0.412		1.39	165	89	89
3	0.17	0.412		1.39	175	89	89
4	0.12	0.346		0.98	177	89	89
5	0.12	0.346		0.98	178	90	89
6	0.12	0.346		0.98	175	90	89
7	0.12	0.346		0.98	162	90	89
8	0.07	0.265		0.57	152	91	89
9	0.07	0.265		0.57	154	91	89
10	0.11	0.332		0.90	171	91	89
11	0.09	0.300		0.74	170	92	90
12	0.09	0.300		0.74	173	92	90
13	0.16	0.400		1.31	176	93	91
14	0.14	0.374		1.15	157	93	91
15	0.14	0.374		1.15	151	94	91
16	0.23	0.480		1.89	162	95	92
17	0.30	0.548		2.46	164	97	93
18	0.30	0.548		2.46	169	97	93
19	0.30	0.548		2.46	175	97	94
20	0.29	0.539		2.40	157	97	93
21	0.29	0.539		2.40	164	97	93
22	0.29	0.539		2.40	165	98	94
23	0.29	0.539	938.69	2.40	168	98	94
24	0.29	0.539	852.71	2.40	175	98	94
25	0.27	0.520		2.21	161	98	94

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.188	0.422	85.98	1.546	166.4	92.2

Production Rate

South EAF	190.5 tons/hr
North EAF	84.6 tons/hr
AOD	92.9 tons/hr
Total Avg Tons/hour	**368.0**

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - Metals/VOC
Date:	04/19/05
Run Number:	3

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 20
Md (g/gmol) = 28.8

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 26.2
Vw (scf) = 1.23323

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 96.1
Vm (ft^3) = 87.75
Pb (in Hg) = 29.87
delta H (in H2O) = 1.587
gamma = 0.99
Vm (dscf) = 82.67

Moisture Content of Stack Gas, Bwo
Bwo = 1.47%
1-Bwo = 98.53%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.64

Area of Stack (enter diameter in inches), As
L = 300
W = 300
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 625.0
As(dia.) (ft^2) = 625.0

Absolute Pressure, Ps
Static (in H2O) = -0.02
Ps (in Hg) = 29.87

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.426
Ts (F) = 156.4
Vs (fps) = 25.96

Stack Gas Flowrate, Qs
As (ft^2) = 625.00
Qs (acfm) = 973,619

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 820,262
Qstd (dscf/hr) = 49,215,715

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.3125
Time of Run (min) = 125
Vn (fps) = 24.56

Area of Nozzle, An
An (ft^2) = 0.000533

% Isokinetic, %I
%I = 94.61
% Isokinetic measured from intermediate values
%I = 94.61

Pollutant Mass Emission Rate, PMR

Mn (g)	1.91E-06	1.24E-05
PMR (lbs/hr)	**0.003**	**0.016**
	Lead	Mercury

Grains per acf

gr/acf	3.00E-07	1.95E-06

Grains per dscf

gr/dscf	3.57E-07	2.31E-06

Pollutant Mass Emission Rate, PMR
VOC Conc. (PPM) 2.53
PMR (lbs/hr) **11.64**
PMR (lbs/ton) **0.031**
VOC

FIELD DATA

K' Factor	8.3

Start Time	8:20
Stop Time	13:30

	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.23	0.480		1.91	155	92	90
2	0.23	0.480		1.91	164	92	90
3	0.22	0.469		1.83	166	93	91
4	0.24	0.490		1.99	158	95	91
5	0.24	0.490		1.99	158	97	93
6	0.25	0.500		2.08	153	99	95
7	0.27	0.520		2.24	161	99	96
8	0.28	0.529		2.32	166	102	98
9	0.28	0.529		2.32	177	103	98
10	0.30	0.548		2.49	160	104	100
11	0.30	0.548		2.49	158	107	102
12	0.30	0.548		2.49	155	107	102
13	0.22	0.469		1.83	154	108	103
14	0.20	0.447		1.66	142	95	95
15	0.20	0.447		1.66	152	96	95
16	0.13	0.361		1.08	148	94	93
17	0.10	0.316		0.83	141	94	93
18	0.10	0.316		0.85	140	94	93
19	0.11	0.332		0.94	145	95	93
20	0.08	0.283		0.68	151	94	93
21	0.08	0.283		0.68	156	94	93
22	0.10	0.316		0.85	160	94	93
23	0.10	0.316	1027.05	0.85	168	94	93
24	0.10	0.316	939.3	0.85	161	95	94
25	0.10	0.316		0.85	162	96	93

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.19	0.426	87.75	1.587	156.4	96.1

Production Rate

South EAF	139.7 tons/hr
North EAF	98.2 tons/hr
AOD	176 tons/hr
Total Avg Tons/hour	**413.9**
Tons/hr during VOC testing	370.7

VELOCITY TRAVERSE POINT DETERMINATION

(EPA Method 1)

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2 - PM/PM10
Date:	04/18/05 - 04/22/05

Rectangular Stack

Depth-in : 300 **Diameter (inches):** **300.0**

Width-in : 300 **Ports:** **5**

Points per port:	**2**	**4**	**5**	**8**	**10**	**13**
1	75.0	37.5	**30.0**	18.8	15.0	11.5
2	225.0	112.5	**90.0**	56.3	45.0	34.6
3		187.5	**150.0**	93.8	75.0	57.7
4		262.5	**210.0**	131.3	105.0	80.8
5			**270.0**	168.8	135.0	103.8
6				206.3	165.0	126.9
7				243.8	195.0	150.0
8				281.3	225.0	173.1
9					255.0	196.2
10					285.0	219.2
11						242.3
12						265.4
13						288.5
Spacing	0.00	75.00	**60.00**	37.50	30.00	23.08

AIR TES ROFESSIONALS FIELD DATA SHEET PM/PM10 TEST. EPA METHOD 1-5/202/9 RUN 1 PAGE ___ OF ___

CLIENT NUCOR STEEL	METER BOX ID 4-1	K FACTOR 16.5	DUCT DIMENSIONS (in.) 25' x 25'	Diagram of Test Location
LOCATION CRAWFORDSVILLE, IN	METER γ 0.99	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0	
UNIT BAGHOUSE #2	PITOT C_p 0.84	PROBE LINER TEFLON	FILTER ID R1	SILICA ID 1
DATE 04-18-05	PROJECT #	PROBE ID 13-1	NOZZLE ID 0.371	TEDLAR BAG ID
METER OPERATOR ANDREW YOUNG	BAROMETRIC 30.15	AMBIENT TEMP (°F)	PITOT CHECK PASS ☒ FAIL ☐	O_2 20.0
PROBE OPERATOR ANDREW YOUNG	STATIC PRESSURE (in. H_2O) -0.02			CO_2 0.0
VISIBLE EMISSIONS READER RON STAPERT	LEAK RATE BEFORE (cfm) 0.000 @ (in. Hg) 10"			H_2O (mL) 85
CLIENT CONTACT MARK WASHER	LEAK RATE AFTER (cfm) 0.000 @ (in. Hg) 12"			SILICA GEL (g) 42.2
AGENCY CONTACT STEVE FRIEND	START TIME 1248	STOP TIME 1936		TOTAL Vic 127.2

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 845.20	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
1	11.5	0.11	1.82	853.1	176	249	249	67	98	98	3	
2	23.0	0.12	1.98	862.4	184	250	251	66	94	95	3	
3	34.5	0.14	2.31	872.41	177	251	251	66	95	94	4	
4	46.0	0.11	1.82	881.7	171	252	248	65	95	94	3.5	pH = 6.0
5	57.5	0.09	1.49	889.6	179	254	247	66	92	91	3.5	
6	69.0	0.09	1.49	897.9	176	251	248	65	94	91	3.0	
7	80.5	0.11	1.82	906.2	164	255	251	65	92	91	3.0	
8	92.0	0.08	1.32	914.5	158	251	252	66	94	92	3.0	
9	103.5	0.05	0.83	920.7	165	248	246	65	92	92	3.0	
10	115.0	0.14	2.31	930.8	180	254	253	65	92	92	4.0	
11	126.5	0.08	1.32	938.5	171	250	248	65	92	90	3.0	
12	138.0	0.08	1.32	946.0	171	245	248	66	94	91	3.0	
13	149.5	0.20	3.30	958.0	181	256	252	66	94	92	6.0	
14	161.0	0.15	2.48	969.1	180	243	247	65	96	93	5.0	
15	172.5	0.10	1.65	976.5	170	247	259	66	96	94	3.0	
16	184.0	0.26	4.29	990.2	163	247	252	64	92	91	7.5	
17	195.5	0.26	4.29	1004.0	176	245	248	59	94	92	7.5	
18	207.0	0.24	3.96	1017.2	182	246	250	61	94	92	7.5	
19	218.5	0.29	4.79	1031.8	157	246	251	58	94	92	8.5	
20	230.0	0.27	4.46	1045.8	167	245	250	57	94	92	8.5	
21	241.5	0.26	4.29	1059.1	176	242	249	58	96	93	8.5	
22	253.0	0.28	4.62	1072.9	165	247	250	59	96	94	8.5	
23	264.5	0.28	4.62	1087.1	166	241	250	58	98	95	8.5	
24	276	0.30	4.95	1105.0	172	240	250	58	97	95	9.0	
25	287.5	0.33	5.45	1117.533	167	246	248	58	96	95	9.5	

AIR TES ROFESSIONALS FIELD DATA SHEET PM/PM10 TEST - EPA METHOD 5/202 RUN 2 PAGE ___ OF ___

CLIENT	Nucor Steel	METER BOX ID	A-1	K FACTOR	16.~~7~~	DUCT DIMENSIONS (in.)	25' x 25'
LOCATION	Crawfordsville IN	METER γ	0.99	METER ΔH@	1.72	PORT LENGTH (in.)	—
UNIT	PPFF Baghouse #2	PITOT C_p	0.84	PROBE LINER	Teflon	FILTER ID	R2 / SILICA ID 2
DATE	4-19-05 / PROJECT #	PROBE ID	13-1	NOZZLE ID	0.371	TEDLAR BAG ID	
METER OPERATOR	A. Young	BAROMETRIC	30.15	AMBIENT TEMP (°F)	70°	PITOT CHECK PASS ☒ FAIL ☐	O_2 20 / CO_2 0
PROBE OPERATOR	A. Young	STATIC PRESSURE (in. H_2O)	-0.05				
VISIBLE EMISSIONS READER	R. Stapert	LEAK RATE BEFORE (cfm)	0.000	@ (in. Hg)	15	H_2O (mL)	84
CLIENT CONTACT	S. Friend	LEAK RATE AFTER (cfm)	0.000	@ (in. Hg)	14	SILICA GEL (g)	42.0
AGENCY CONTACT	M. Washer	START TIME	0830	STOP TIME	1608	TOTAL Vic	126

Diagram of Test Location

Traverse Point Number	Min/Point 11.5 / Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Point 250	Filter Tf (°F) Set Point 250	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				119.911								
	11.5	0.21	3.5	132.2	144	251	247	64	87	86	7	
	23.0	0.28	4.7	145.7	156	249	246	61	87	86	8	
	34.5	0.33	5.51	160.9	163	249	248	61	87	86	11	
	46.0	0.16	2.7	171.8	154	248	250	58	89	88	5	
	57.5	0.26	4.34	185.9	164	250	248	57	92	90	8	
	69.0	0.30	5.01	200.15	168	252	250	58	96	93	10	
	80.5	0.20	3.34	212.3	163	251	253	58	99	96	7	
	92.0	0.27	4.51	226.0	155	253	249	58	100	98	8	← ~ 3 hour delay
31	103.5	0.25	4.18	239.5	148	245	248	56	83	82	8	
	115.0	0.17	2.84	251.1	161	249	251	59	84	84	5	
	126.5	0.23	3.80	262.95	136	248	249	57	87	84	7	
	138.0	0.27	4.51	277.3	151	247	252	58	87	84	9	
	149.5	0.19	3.17	289.0	160	248	250	61	87	85	6	
	161.0	0.28	4.68	302.9	157	247	251	63	88	86	10	
	172.5	0.27	4.51	317.1	142	245	254	65	87	86	9	
	184.0	0.14	2.34	327.2	133	255	257	66	84	84	4	
	195.5	0.13	2.17	336.9	152	246	249	62	86	84	4	
	207.0	0.09	1.50	344.9	162	256	256	61	85	84	3.5	pH = 6
	218.5	0.08	1.34	352.4	152	257	254	58	86	85	3.5	
	230.0	0.08	1.34	360.1	163	250	252	59	87	85	3.5	
	241.5	0.08	1.34	367.7	164	246	251	60	87	85	3.5	
	253.0	0.08	1.34	375.2	163	254	254	62	86	86	3.5	
	264.5	0.07	1.17	382.1	159	250	251	62	86	85	3.5	
	276.0	0.09	1.50	390.5	169	251	253	62	86	85	3.5	
	287.5	0.09	1.50	398.785	177	250	254	62	86	85	3.5	

AIR TES ROFESSIONALS FIELD DATA SHEET PM/PM10 TEST... EPA METHOD 5/202 RUN 3 PAGE ___ OF ___

CLIENT	Nucor Steel	METER BOX ID	A-1	K FACTOR	16.5	DUCT DIMENSIONS (in.)	25' x 25'
LOCATION	Crawfordsville IN	METER γ	0.99	METER ΔH@	1.72	PORT LENGTH (in.)	—
UNIT	PPFF Rughouse #2	PITOT C_p	0.84	PROBE LINER	Teflon	FILTER ID	SILICA ID 3
DATE	4-22-05 PROJECT #	PROBE ID	B-1	NOZZLE ID	0.371	TEDLAR BAG ID	
METER OPERATOR	A Young	BAROMETRIC	29.87	AMBIENT TEMP (°F)		PITOT CHECK PASS ☒ FAIL ☐	O_2 20
PROBE OPERATOR	A Young	STATIC PRESSURE (in. H_2O)		-0.03			CO_2 0
VISIBLE EMISSIONS READER	C Brown	LEAK RATE BEFORE (cfm)	0.000	@ (in. Hg)	15	H_2O (mL)	72
CLIENT CONTACT	M Washer	LEAK RATE AFTER (cfm)	0.000	@ (in. Hg)	12	SILICA GEL (g)	40.2
AGENCY CONTACT	S Friend	START TIME	0833	STOP TIME	1414	TOTAL Vic	112.2

Diagram of Test Location

Traverse Point Number	Min/Point 11.5 Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 399.318	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
	11.5	0.13	2.15	409.1	116	250	249	47	58	57	4	
	23	0.13	2.15	418.4	131	248	251	48	60	58	4	
	34.5	0.12	1.98	427.2	142	248	248	49	63	59	4	
	46	0.09	1.49	436.7	149	253	254	51	64	61	3	
	57.5	0.08	1.32	443.1	138	247	249	50	65	61	3	pH = 6.0
	69	0.08	1.32	450.7	140	250	244	50	67	63	3	
	80.5	0.10	1.65	459.2	147	251	253	51	69	64	3	
	92	0.07	1.16	466.3	164	249	246	52	72	67	3	
32	103.5	0.06	0.99	472.0	143	249	244	52	74	69	3	
	115	0.07	1.16	480.0	134	251	249	53	75	71	3	
	126.5	0.07	1.16	487.5	148	252	251	53	76	72	3	
	138	0.08	1.32	494.5	156	250	247	53	77	73	3	← Furnace Delay
	149.5	0.08	1.32	502.3	131	249	256	52	76	75	3	
	161	0.17	2.81	513.4	128	250	252	52	77	75	5	
	172.5	0.14	2.31	523.5	150	245	243	54	77	75	4	
	184	0.24	3.96	536.6	161	254	255	53	77	75	6	
	195.5	0.26	4.29	550.5	147	247	247	53	79	76	6	
	207	0.27	4.46	564.4	156	249	246	53	79	76	6	
	218.5	0.31	5.12	580.1	164	250	246	54	79	77	7	
	230	0.34	5.61	594.9	170	251	250	54	79	77	8	
	241.5	0.28	4.62	610.5	144	250	253	54	78	77	7	
	253	0.30	4.95	624.0	153	250	247	54	80	77	7	
	264.5	0.33	5.45	639.3	169	250	244	55	81	78	8	
	276	0.34	5.61	655.0	180	250	248	57	83	79	8	
	287.5	0.34	5.61	670.847	164	251	251	58	84	80	8	

VELOCITY TRAVERSE POINT DETERMINATION

(EPA Method 1)

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse #2
Date:	04/18/05 - 04/22/05

Rectangular Stack

Depth-in : 300 **Diameter (inches):** **300.0**

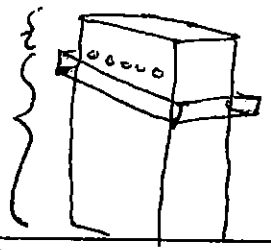
Width-in : 300 **Ports:** **5**

Points per port:	**2**	**4**	**5**	**8**	**10**	**13**
1	75.0	37.5	**30.0**	18.8	15.0	11.5
2	225.0	112.5	**90.0**	56.3	45.0	34.6
3		187.5	**150.0**	93.8	75.0	57.7
4		262.5	**210.0**	131.3	105.0	80.8
5			**270.0**	168.8	135.0	103.8
6				206.3	165.0	126.9
7				243.8	195.0	150.0
8				281.3	225.0	173.1
9					255.0	196.2
10					285.0	219.2
11						242.3
12						265.4
13						288.5
Spacing	0.00	75.00	**60.00**	37.50	30.00	23.08

AIR TES ROFESSIONALS FIELD DATA SHEET METALS TEST. EPA METHOD 1-4/29/9 RUN 1 PAGE ___ OF ___

CLIENT	NUCOR STEEL	METER BOX ID	A-2	K FACTOR	8.2	DUCT DIMENSIONS (in.)	25 x 25
LOCATION	CRAWFORDSVILLE, IN	METER γ	0.99	METER ΔH@	1.83	PORT LENGTH (in.)	0.0
UNIT	BAGHOUSE #2	PITOT C_P	0.84	PROBE LINER	TEFLON	FILTER ID	R1 / SILICA ID #4
DATE	4-18-05 / PROJECT #	PROBE ID	13' 2	NOZZLE ID	0.3125	TEDLAR BAG ID	
METER OPERATOR	CARLOS BROWN	BAROMETRIC	30.15	AMBIENT TEMP (°F)		PITOT CHECK PASS ☒ FAIL ☐	O_2 20.0 / CO_2 0.0
PROBE OPERATOR	CARLOS BROWN	STATIC PRESSURE (in. H_2O)	-0.02				
VISIBLE EMISSIONS READER	RON STAPERT	LEAK RATE BEFORE (cfm)	0.000	@ (in. Hg)	11"	H_2O (mL)	10
CLIENT CONTACT	MARK WASHER	LEAK RATE AFTER (cfm)	0.000	@ (in. Hg)	12"	SILICA GEL (g)	15.9
AGENCY CONTACT	STEVE FRIEND	START TIME	1248	STOP TIME	1535	TOTAL Vic	25.9

Diagram of Test Location



Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				758.0								
1	5	.32	2.62	763.2	172	250	248	55	96	96	8	K' = 8.2
2	10	.32	2.62	768.6	175	250	248	55	95	95	8	
3	15	.32	2.62	774.7	175	250	250	54	93	93	8	
4	20	.32	2.62	779.5	170	248	250	55	93	94	8	
5	25	.32	2.62	748.5	170	248	250	56	94	94	8	
6	30	.30	2.46	788.3	170	251	252	56	95	93	7.5	
7	35	.28	2.30	792.9	170	251	254	57	95	93	7.0	
8	40	.28	2.30	797.8	182	254	250	63	94	93	7.0	
9	45	.26	2.13	801.3	177	253	250	64	94	93	7.0	
10	50	.25	2.05	805.6	179	252	251	63	94	93	7.0	
11	55	.25	2.05	809.1	181	250	249	61	95	93	7.0	
12	60	.28	2.30	813.8	166	245	252	61	94	93	7.0	
13	65	.22	1.80	818.2	157	250	251	61	93	93	6.0	
14	70	.30	2.46	821.34	158	248	250	58	93	93	8.0	
15	75	.30	2.46	825.8	157	246	253	58	93	93	8.0	
16	80	.15	1.23	829.2	163	254	245	61	93	92	5.0	
17	85	.16	1.31	832.4	177	255	244	57	93	92	5.0	
18	90	.10	0.82	834.9	176	247	244	60	93	92	3.0	
19	95	.10	0.82	837.4	181	248	247	60	93	92	3.0	
20	100	.08	0.66	839.7	167	248	250	62	92	91	3.0	
21	105	.06	0.49	841.8	162	252	248	59	92	91	2.0	
22	110	.12	0.98	844.9	176	247	252	61	92	91	3.0	
23	115	.12	0.98	847.4	179	250	259	59	93	91	3.5	
24	120	.09	0.74	850.0	173	251	260	62	93	91	3.0	
25	125	.09	0.74	852.265	180	252	248	62	93	92	3.0	

AIR TES ROFESSIONALS FIELD DATA SHEET METALS TEST EPA METHOD 1-4/23 RUN 2 PAGE ___ OF ___

CLIENT	NUCOR STEEL	METER BOX ID	A-2	K FACTOR	8.2	DUCT DIMENSIONS (in.)	25" x 25"
LOCATION	CRAWFORDSVILLE, IN	METER γ	0.99	METER ΔH@	1.83	PORT LENGTH (in.)	—
UNIT	BAGHOUSE #2	PITOT C_p	0.84	PROBE LINER	TEFLON	FILTER ID	P-2
DATE	04-18-05	PROJECT #		PROBE ID	13' 2	NOZZLE ID	0.3125
METER OPERATOR	CARLOS BROWN	BAROMETRIC	30.15	AMBIENT TEMP (°F)		TEDLAR BAG ID	
PROBE OPERATOR	CARLOS BROWN	STATIC PRESSURE (in. H_2O)	-0.02	PITOT CHECK PASS ☒ FAIL ☐		O_2	20.0
VISIBLE EMISSIONS READER	RON STAPERT	LEAK RATE BEFORE (cfm)	0.000 @ (in. Hg)	12"		H_2O (mL)	11
CLIENT CONTACT	MARK WASHER	LEAK RATE AFTER (cfm)	0.000 @ (in. Hg)	14"		CO_2	0.0
AGENCY CONTACT	STEVE FRIEND	START TIME	1655 STOP TIME 1926			SILICA GEL (g)	16.7
						TOTAL Vic	27.7

Diagram of Test Location

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				852.71								
1	5	0.16	1.31	856.0	163	248	250	64	89	89	4.5	
2	10	0.17	1.39	859.2	165	249	250	59	89	89	4.5	
3	15	0.17	1.39	862.3	175	249	250	61	89	89	4.5	
4	20	0.12	0.98	865.5	177	250	246	60	89	89	4.0	
5	25	0.12	0.98	868.2	178	253	251	60	90	89	4.0	
6	30	0.12	0.98	871.0	175	246	248	60	90	89	4.0	
7	35	0.12	0.98	874.2	162	251	251	62	90	89	4.0	
8	40	0.07	0.57	876.1	152	251	248	61	91	89	3.0	
9	45	0.07	0.57	878.2	154	250	249	62	91	89	3.0	
10	50	0.11	0.90	881.6	171	252	251	62	91	89	3.5	
11	55	0.09	0.74	883.6	170	250	249	61	92	90	3.5	
12	60	0.09	0.74	885.9	173	248	249	61	92	90	3.5	
13	65	0.16	1.31	889.2	176	253	250	64	93	91	4.0	
14	70	0.14	1.15	892.0	157	251	248	64	93	91	4.0	
15	75	0.14	1.15	895.0	151	247	250	62	94	91	4.0	
16	80	0.23	1.89	898.9	162	253	250	62	95	92	6.0	
17	85	0.30	2.46	903.5	164	250	250	62	97	93	8.0	
18	90	0.30	2.46	907.6	169	245	248	63	97	93	8.0	
19	95	0.30	2.46	912.0	175	250	250	65	97	94	8.0	
20	100	0.29	2.40	916.8	157	250	252	63	97	93	8.0	
21	105	0.29	2.40	921.1	164	249	250	63	97	93	8.0	
22	110	0.29	2.40	925.5	165	250	252	63	98	94	8.0	
23	115	0.29	2.40	929.7	168	250	251	63	98	94	8.0	
24	120	0.29	2.40	933.9	175	250	249	63	98	94	8.0	
25	125	0.27	2.21	938.69	161	249	250	63	98	94	7.5	

AIR TES PROFESSIONALS FIELD DATA SHEET METALS TEST... EPA METHOD 1-4/29 RUN 3 PAGE ___ OF ___

CLIENT	NUCOR STEEL	METER BOX ID	A-2	K FACTOR	8.3e	DUCT DIMENSIONS (in.)	25' x 25'
LOCATION	CRAWFORDSVILLE, IN	METER γ	0.99	METER ΔH@	1.83	PORT LENGTH (in.)	0.0
UNIT	FFFF BAGHOUSE #2	PITOT C_p	0.84	PROBE LINER	TEFLON	FILTER ID	R3 / SILICA ID 6
DATE	04-19-05	PROJECT #		PROBE ID	13' 2	NOZZLE ID	0.3125
METER OPERATOR	CARLOS BROWN	BAROMETRIC	30.15	AMBIENT TEMP (°F)		TEDLAR BAG ID	
PROBE OPERATOR	CARLOS BROWN	STATIC PRESSURE (in. H_2O)	-0.02			PITOT CHECK PASS ☒ FAIL ☐	O_2 20.0 / CO_2 0.0
VISIBLE EMISSIONS READER	RON STAFFORT	LEAK RATE BEFORE (cfm)	0.000	@ (in. Hg)	15"	H_2O (mL)	10
CLIENT CONTACT	MARK WAGNER	LEAK RATE AFTER (cfm)	0.000	@ (in. Hg)	10"	SILICA GEL (g)	16.2
AGENCY CONTACT	STEVE FRIEND	START TIME	0820	STOP TIME	1330	TOTAL Vic	26.2

Diagram of Test Location

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 939.3e	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
1	5	0.23	1.91	943.2	155	252	249	62	92	90	6.0	
2	10	0.23	1.91	946.9	164	248	250	54	92	90	6.0	
3	15	0.22	1.83	950.8	166	249	249	54	93	91	6.0	
4	20	0.24	1.99	955.0	158	250	252	54	95	91	6.0	
5	25	0.24	1.99	959.0	158	252	248	55	97	93	6.0	• 10 m/s pick-up RUN 1
6	30	0.25	2.08	962.7	153	246	252	55	99	95	6.5	
7	35	0.27	2.24	967.1	161	257	253	56	99	96	7.0	
8	40	0.28	2.32	971.3	166	251	250	56	102	98	7.0	• 11 m/s pick-up RUN 2
9	45	0.28	2.32	975.7	177	250	248	56	103	98	7.0	
10	50	0.30	2.49	979.2	160	250	256	57	104	100	7.0	
11	55	0.30	2.49	983.0	158	250	249	57	107	102	7.0	
12	60	0.30	2.49	987.0	155	249	252	57	107	102	7.0	
13	65	0.22	1.83	993.1	154	250	250	58	108	103	6.0	
14	70	0.20	1.66	996.0	142	250	246	58	95	95	6.0	
15	75	0.20	1.66	1000.0	152	250	252	57	96	95	6.0	
16	80	0.13	1.08	1003.8	148	250	251	61	94	93	5.0	
17	85	0.10	0.83	1006.4	141	250	250	61	94	93	4.0	
18	90	0.10	0.85	1009.1	140	249	248	61	94	93	4.0	CHANGE K' = 8.5
19	95	0.11	0.94	1012.0	145	250	250	60	95	93	4.0	
20	100	0.08	0.68	1014.0	151	250	252	61	94	93	3.0	
21	105	0.08	0.68	1016.3	156	250	250	62	94	93	3.0	
22	110	0.10	0.85	1018.7	160	250	247	63	94	93	3.0	
23	115	0.10	0.85	1021.8	168	250	248	63	94	93	3.0	
24	120	0.10	0.85	1025.0	161	250	253	63	95	94	3.0	
25	125	0.10	0.85	1027.05	162	249	249	64	96	93	3.0	

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

NUCOR STEEL
******** OFF ********
VOC - Baghouse #2
******** ON ********
******** RUN ********

10:18:57 04/18/05
2 0076.7
77.0

******** OFF ********

******** ON ********
******** RUN ********

10:21:04 04/18/05
2 0000.3
zero

******** OFF ********

******** ON ********
******** RUN ********

10:24:30 04/18/05
2 0029.6
29.6

******** OFF ********

******** ON ********
******** RUN ********

10:27:51 04/18/05
2 0048.4
48.6

******** OFF ********

******** ON ********
******** RUN ********

******** RUN (1) ********

12:50:12 04/18/05
2 0002.3

12:51:12 04/18/05
2 0002.2

12:52:12 04/18/05
2 0002.2

12:53:12 04/18/05
2 0002.2

12:54:12 04/18/05
2 0002.2

12:55:12 04/18/05
2 0002.2

12:56:12 04/18/05
2 0002.2

12:57:12 04/18/05
2 0002.9

12:58:12 04/18/05
2 0002.3

12:59:12 04/18/05
2 0002.3

13:00:12 04/18/05
2 0002.3

13:01:12 04/18/05
2 0002.2

13:02:12 04/18/05
2 0002.1

13:03:12 04/18/05
2 0001.9

13:04:12 04/18/05
2 0001.9

13:05:12 04/18/05
2 0001.9

13:06:12 04/18/05
2 0001.9

13:07:12 04/18/05
2 0002.0

13:08:12 04/18/05
2 0002.0

13:09:12 04/18/05
2 0001.9

13:10:12 04/18/05
2 0002.0

13:11:12 04/18/05
2 0002.1

13:12:12 04/18/05
2 0002.1

13:13:12 04/18/05
2 0002.0

13:14:12 04/18/05
2 0002.2

13:15:12 04/18/05
2 0002.3

13:16:12 04/18/05
2 0002.3

13:17:12 04/18/05
2 0002.2

13:18:12 04/18/05
2 0002.3

13:19:12 04/18/05
2 0002.1

13:20:12 04/18/05
2 0002.2

13:21:12 04/18/05
2 0002.2

13:22:12 04/18/05
2 0002.5

13:23:12 04/18/05
2 0002.4

13:24:12 04/18/05
2 0002.4

13:25:12 04/18/05
2 0002.3

13:26:12 04/18/05
2 0002.2

13:27:12 04/18/05
2 0002.1

13:28:12 04/18/05
2 0001.9

13:29:12 04/18/05
2 0001.9

13:30:12 04/18/05
2 0001.9

13:31:12 04/18/05
2 0001.9

13:32:12 04/18/05
2 0001.8

13:33:12 04/18/05
2 0002.1

13:34:12 04/18/05
2 0002.0

13:35:12 04/18/05
2 0001.9

13:36:12 04/18/05
2 0001.9

13:37:12 04/18/05
2 0002.0

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

13:38:12	04/18/05	
2	0002.1	
13:39:12	04/18/05	
2	0002.3	
13:40:12	04/18/05	
2	0002.2	
13:41:12	04/18/05	
2	0002.1	
13:42:12	04/18/05	
2	0002.1	
13:43:12	04/18/05	
2	0002.1	
13:44:12	04/18/05	
2	0002.0	
13:45:12	04/18/05	
2	0001.9	
13:46:12	04/18/05	
2	0002.0	
13:47:12	04/18/05	
2	0002.0	
13:48:12	04/18/05	
2	0002.0	
13:49:12	04/18/05	
2	0002.0	
13:50:12	04/18/05	
2	0001.9	
13:51:12	04/18/05	
2	0001.8	
13:52:12	04/18/05	
2	0001.7	
13:53:12	04/18/05	
2	0001.4	
13:54:12	04/18/05	
2	0001.7	
13:55:12	04/18/05	
2	0001.8	
13:56:12	04/18/05	
2	0001.9	
13:57:12	04/18/05	
2	0001.8	
13:58:12	04/18/05	
2	0001.5	
13:59:12	04/18/05	
2	0001.5	
14:00:12	04/18/05	
2	0001.5	
14:01:12	04/18/05	
2	0001.7	
14:02:12	04/18/05	
2	0001.7	
14:03:12	04/18/05	
2	0001.8	
14:04:12	04/18/05	
2	0001.9	
14:05:12	04/18/05	
2	0002.1	
14:06:12	04/18/05	
2	0002.2	
14:07:12	04/18/05	
2	0002.2	
14:08:12	04/18/05	
2	0002.2	
14:09:12	04/18/05	
2	0002.1	
14:10:12	04/18/05	
2	0002.0	
14:11:12	04/18/05	
2	0002.1	
14:12:12	04/18/05	
2	0002.0	
14:13:12	04/18/05	
2	0001.9	
14:14:12	04/18/05	
2	0001.9	
14:15:12	04/18/05	
2	0001.9	
14:16:12	04/18/05	
2	0001.8	
14:17:12	04/18/05	
2	0001.8	
14:18:12	04/18/05	
2	0002.0	
14:19:12	04/18/05	
2	0001.9	
14:20:12	04/18/05	
2	0001.9	
14:21:12	04/18/05	
2	0001.8	
14:22:12	04/18/05	
2	0002.0	
14:23:12	04/18/05	
2	0001.8	
14:24:12	04/18/05	
2	0001.9	
14:25:12	04/18/05	
2	0001.9	
14:26:12	04/18/05	
2	0001.9	
14:27:12	04/18/05	
2	0001.8	
14:28:12	04/18/05	
2	0001.9	
14:29:12	04/18/05	
2	0001.9	
14:30:12	04/18/05	
2	0001.8	
14:31:12	04/18/05	
2	0001.7	
14:32:12	04/18/05	
2	0001.7	
14:33:12	04/18/05	
2	0001.5	
14:34:12	04/18/05	
2	0001.4	
14:35:12	04/18/05	
2	0001.7	
14:36:12	04/18/05	
2	0001.7	
14:37:12	04/18/05	
2	0001.8	
14:38:12	04/18/05	
2	0001.8	
14:39:12	04/18/05	
2	0002.1	
14:40:12	04/18/05	
2	0002.2	

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

2	14:41:12	04/18/05	0002.1
2	14:42:12	04/18/05	0002.1
2	14:43:12	04/18/05	0002.1
2	14:44:12	04/18/05	0001.9
2	14:45:12	04/18/05	0001.9
2	14:46:12	04/18/05	0002.0
2	14:47:12	04/18/05	0002.1
2	14:48:12	04/18/05	0002.1
2	14:49:12	04/18/05	0002.3
2	14:50:12	04/18/05	0002.2
2	14:51:12	04/18/05	0001.9
2	14:52:12	04/18/05	0001.9
2	14:53:12	04/18/05	0002.1
2	14:54:12	04/18/05	0002.0
2	14:55:12	04/18/05	0001.7
2	14:56:12	04/18/05	0001.7
2	14:57:12	04/18/05	0001.5
2	14:58:12	04/18/05	0001.7
2	14:59:12	04/18/05	0001.5
2	15:00:12	04/18/05	0001.5
2	15:01:12	04/18/05	0001.7
2	15:02:12	04/18/05	0001.7
2	15:03:12	04/18/05	0001.7
2	15:04:12	04/18/05	0001.5
2	15:05:12	04/18/05	0001.5
2	15:06:12	04/18/05	0001.4
2	15:07:12	04/18/05	0001.4
2	15:08:12	04/18/05	0001.4
2	15:09:12	04/18/05	0001.4
2	15:10:12	04/18/05	0001.5
2	15:11:12	04/18/05	0001.5
2	15:12:12	04/18/05	0001.7
2	15:13:12	04/18/05	0001.8
2	15:14:12	04/18/05	0001.9
2	15:15:12	04/18/05	0001.9
2	15:16:12	04/18/05	0001.9
2	15:17:12	04/18/05	0002.1
2	15:18:12	04/18/05	0002.2
2	15:19:12	04/18/05	0002.1
2	15:20:12	04/18/05	0002.2
2	15:21:12	04/18/05	0002.4
2	15:22:12	04/18/05	0002.2
2	15:23:12	04/18/05	0002.1
2	15:24:12	04/18/05	0001.9
2	15:25:12	04/18/05	0001.9
2	15:26:12	04/18/05	0001.9
2	15:27:12	04/18/05	0001.8
2	15:28:12	04/18/05	0001.8
2	15:29:12	04/18/05	0001.5
2	15:30:12	04/18/05	0001.5
2	15:31:12	04/18/05	0001.4
2	15:32:12	04/18/05	0001.4
2	15:33:12	04/18/05	0001.4
2	15:34:12	04/18/05	0001.5
2	15:35:12	04/18/05	0001.4
2	15:36:12	04/18/05	0001.5
2	15:37:12	04/18/05	0001.5
2	15:38:12	04/18/05	0001.4
2	15:39:12	04/18/05	0001.5
2	15:40:12	04/18/05	0001.7
2	15:41:12	04/18/05	0001.5

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

15:42:12 04/18/05
2 0001.8

15:43:12 04/18/05
2 0001.8

15:44:12 04/18/05
2 0001.8

15:45:12 04/18/05
2 0001.4

15:46:12 04/18/05
2 0001.4

15:47:12 04/18/05
2 0001.5

15:48:12 04/18/05
2 0001.5

15:49:12 04/18/05
2 0001.5

15:50:12 04/18/05
2 0001.7

15:51:12 04/18/05
2 0001.7

15:52:12 04/18/05
2 0001.8

15:53:12 04/18/05
2 0001.8

15:54:12 04/18/05
2 0001.9

15:55:12 04/18/05
2 0002.1

15:56:12 04/18/05
2 0002.1

15:57:12 04/18/05
2 0002.2

15:58:12 04/18/05
2 0002.2

15:59:12 04/18/05
2 0002.2

*** ON (RUNNING) ***
******** STOP ********
15:59:21 04/18/05
Run statistics N=00190
Min Avg Max
2 0001.4 0001.9 0002.9

******** RUN ********

16:06:03 04/18/05
2 0048.0 486

******** OFF ********

******** ON ********
******** RUN ********

16:09:02 04/18/05
2 -0000.4 ZERO

******** OFF ********

******** ON ********
******** RUN (2) ********

17:00:08 04/18/05
2 0002.0

17:01:08 04/18/05
2 0001.9

17:02:08 04/18/05
2 0001.9

17:03:08 04/18/05
2 0001.9

17:04:08 04/18/05
2 0001.9

17:05:08 04/18/05
2 0001.9

17:06:08 04/18/05
2 0001.9

17:07:08 04/18/05
2 0001.8

17:08:08 04/18/05
2 0001.9

17:09:08 04/18/05
2 0001.8

17:10:08 04/18/05
2 0001.8

17:11:08 04/18/05
2 0001.8

17:12:08 04/18/05
2 0002.1

17:13:08 04/18/05
2 0002.1

17:14:08 04/18/05
2 0002.2

17:15:08 04/18/05
2 0002.1

17:16:08 04/18/05
2 0002.2

17:17:08 04/18/05
2 0002.3

17:18:08 04/18/05
2 0002.1

17:19:08 04/18/05
2 0001.9

17:20:08 04/18/05
2 0001.8

17:21:08 04/18/05
2 0001.8

17:22:08 04/18/05
2 0001.9

17:23:08 04/18/05
2 0001.9

17:24:08 04/18/05
2 0001.9

17:25:08 04/18/05
2 0001.9

17:26:08 04/18/05
2 0001.9

17:27:08 04/18/05
2 0001.8

17:28:08 04/18/05
2 0001.8

17:29:08 04/18/05
2 0001.9

17:30:08 04/18/05
2 0001.9

17:31:08 04/18/05
2 0002.0

17:32:08 04/18/05
2 0001.9

17:33:08 04/18/05
2 0001.9

17:34:08 04/18/05
2 0001.9

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

17:35:08 04/18/05	17:56:08 04/18/05	18:17:08 04/18/05
2 0002.0	2 0001.9	2 0001.5
17:36:08 04/18/05	17:57:08 04/18/05	18:18:08 04/18/05
2 0002.1	2 0002.1	2 0001.7
17:37:08 04/18/05	17:58:08 04/18/05	18:19:08 04/18/05
2 0001.9	2 0002.2	2 0001.5
17:38:08 04/18/05	17:59:08 04/18/05	18:20:08 04/18/05
2 0002.0	2 0002.1	2 0001.5
17:39:08 04/18/05	18:00:08 04/18/05	18:21:08 04/18/05
2 0002.1	2 0002.0	2 0001.5
17:40:08 04/18/05	18:01:08 04/18/05	18:22:08 04/18/05
2 0003.1	2 0002.0	2 0002.6
17:41:08 04/18/05	18:02:08 04/18/05	18:23:08 04/18/05
2 0002.9	2 0001.9	2 0002.6
17:42:08 04/18/05	18:03:08 04/18/05	18:24:08 04/18/05
2 0002.1	2 0002.0	2 0001.9
17:43:08 04/18/05	18:04:08 04/18/05	18:25:08 04/18/05
2 0001.9	2 0001.8	2 0002.1
17:44:08 04/18/05	18:05:08 04/18/05	18:26:08 04/18/05
2 0001.9	2 0001.9	2 0001.9
17:45:08 04/18/05	18:06:08 04/18/05	18:27:08 04/18/05
2 0001.8	2 0001.9	2 0001.5
17:46:08 04/18/05	18:07:08 04/18/05	18:28:08 04/18/05
2 0001.7	2 0001.9	2 0001.5
17:47:08 04/18/05	18:08:08 04/18/05	18:29:08 04/18/05
2 0001.8	2 0001.8	2 0001.7
17:48:08 04/18/05	18:09:08 04/18/05	18:30:08 04/18/05
2 0001.8	2 0001.7	2 0001.5
17:49:0^ 04/18/05	18:10:08 04/18/05	18:31:08 04/18/05
2 0001.8	2 0001.8	2 0001.5
17:50:08 04/18/05	18:11:08 04/18/05	18:32:08 04/18/05
2 0001.8	2 0001.5	2 0001.5
17:51:08 04/18/05	18:12:08 04/18/05	18:33:08 04/18/05
2 0001.8	2 0001.8	2 0001.7
17:52:08 04/18/05	18:13:08 04/18/05	18:34:08 04/18/05
2 0001.8	2 0001.7	2 0001.8
17:53:08 04/18/05	18:14:08 04/18/05	18:35:08 04/18/05
2 0001.8	2 0001.8	2 0002.5
17:54:08 04/18/05	18:15:08 04/18/05	18:36:08 04/18/05
2 0001.8	2 0001.7	2 0002.1
17:55:08 04/18/05	18:16:08 04/18/05	18:37:08 04/18/05
2 0001.9	2 0001.7	2 0002.1

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

2	18:38:08	04/18/05	0001.9
2	18:39:08	04/18/05	0001.9
2	18:40:08	04/18/05	0001.9
2	18:41:08	04/18/05	0001.9
2	18:42:08	04/18/05	0002.0
2	18:43:08	04/18/05	0002.0
2	18:44:08	04/18/05	0002.1
2	18:45:08	04/18/05	0002.2
2	18:46:08	04/18/05	0002.0
2	18:47:08	04/18/05	0001.9
2	18:48:08	04/18/05	0001.8
2	18:49:08	04/18/05	0001.8
2	18:50:08	04/18/05	0001.8
2	18:51:08	04/18/05	0001.7
2	18:52:08	04/18/05	0001.8
2	18:53:08	04/18/05	0001.8
2	18:54:08	04/18/05	0001.8
2	18:55:08	04/18/05	0002.0
2	18:56:08	04/18/05	0001.9
2	18:57:08	04/18/05	0001.9
2	18:58:08	04/18/05	0001.9
2	18:59:08	04/18/05	0001.9
2	19:00:08	04/18/05	0001.8
2	19:01:08	04/18/05	0001.8
2	19:02:08	04/18/05	0001.9
2	19:03:08	04/18/05	0001.9
2	19:04:08	04/18/05	0001.9
2	19:05:08	04/18/05	0001.8
2	19:06:08	04/18/05	0001.7
2	19:07:08	04/18/05	0001.5
2	19:08:08	04/18/05	0001.4
2	19:09:08	04/18/05	0001.5
2	19:10:08	04/18/05	0001.5
2	19:11:08	04/18/05	0001.5
2	19:12:08	04/18/05	0001.7
2	19:13:08	04/18/05	0001.5
2	19:14:08	04/18/05	0001.5
2	19:15:08	04/18/05	0001.7
2	19:16:08	04/18/05	0001.7
2	19:17:08	04/18/05	0001.5
2	19:18:08	04/18/05	0001.8
2	19:19:08	04/18/05	0001.8
2	19:20:08	04/18/05	0002.0
2	19:21:08	04/18/05	0001.9
2	19:22:08	04/18/05	0002.0
2	19:23:08	04/18/05	0001.9
2	19:24:08	04/18/05	0001.8
2	19:25:08	04/18/05	0001.9
2	19:26:08	04/18/05	0001.8
2	19:27:08	04/18/05	0001.8
2	19:28:08	04/18/05	0001.9
2	19:29:08	04/18/05	0001.9
2	19:30:08	04/18/05	0001.9
2	19:31:08	04/18/05	0002.0
2	19:32:08	04/18/05	0001.9
2	19:33:08	04/18/05	0001.9
2	19:34:08	04/18/05	0001.9
2	19:35:08	04/18/05	0002.0
2	19:36:08	04/18/05	0001.9
2	19:37:08	04/18/05	0001.9
2	19:38:08	04/18/05	0002.1

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

19:39:08 04/18/05
2 0001.8

19:40:08 04/18/05
2 0001.8

19:41:08 04/18/05
2 0001.8

19:42:08 04/18/05
2 0001.7

19:43:08 04/18/05
2 0001.7

19:44:08 04/18/05
2 0001.5

19:45:08 04/18/05
2 0001.5

19:46:08 04/18/05
2 0001.5

19:47:08 04/18/05
2 0001.4

19:48:08 04/18/05
2 0001.4

19:49:08 04/18/05
2 0001.2

19:50:08 04/18/05
2 0001.2

19:51:08 04/18/05
2 0001.2

19:52:08 04/18/05
2 0001.2

19:53:08 04/18/05
2 0001.7

19:54:08 04/18/05
2 0001.5

19:55:08 04/18/05
2 0001.5

19:56:08 04/18/05
2 0001.5

19:57:08 04/18/05
2 0001.5

19:58:08 04/18/05
2 0001.4

19:59:08 04/18/05
2 0001.4

20:00:08 04/18/05
2 0001.5

20:01:08 04/18/05
2 0001.8

20:02:08 04/18/05
2 0001.9

20:03:08 04/18/05
2 0001.8

20:04:08 04/18/05
2 0001.8

20:05:08 04/18/05
2 0001.8

20:06:08 04/18/05
2 0001.8

20:07:08 04/18/05
2 0001.7

20:08:08 04/18/05
2 0001.4

20:09:08 04/18/05
2 0001.4

20:10:08 04/18/05
2 0001.4

20:11:08 04/18/05
2 0001.5

20:12:08 04/18/05
2 0001.8

20:13:08 04/18/05
2 0001.5

20:14:08 04/18/05
2 0001.4

20:15:08 04/18/05
2 0001.5

20:16:08 04/18/05
2 0001.5

20:17:08 04/18/05
2 0001.5

*** ON (RUNNING) ***
******** STOP ********
20:17:16 04/18/05
Run statistics N=00198
Min Avg Max
2 0001.4 0001.8 0003.1

******** RUN ********

20:18:12 04/18/05
2 0048.6
48.6

******** OFF ********

******** ON ********
******** RUN ********

20:20:12 04/18/05
2 -0000.7
zero

4/19/05

[illegible] 04/19/05
2 0000.2
zero

******** OFF ********

******** ON ********
******** RUN ********

07:22:28 04/19/05
2 0076.9
77

******** OFF ********

******** ON ********
******** RUN ********

07:25:04 04/19/05
2 0029.9
29.6

******** OFF ********

******** ON ********
******** RUN ********

07:27:29 04/19/05
2 0048.8
48.6

******** OFF ********

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

******** ON ********
******** RUN 3 ********

07:30:09	04/19/05	Z 0002.8
07:31:09	04/19/05	Z 0002.5
07:32:09	04/19/05	Z 0002.5
07:33:09	04/19/05	Z 0002.6
07:34:09	04/19/05	Z 0002.6
07:35:09	04/19/05	Z 0002.5
07:36:09	04/19/05	Z 0002.8
07:37:09	04/19/05	Z 0002.8
07:38:09	04/19/05	Z 0002.9
07:39:09	04/19/05	Z 0002.8
07:40:09	04/19/05	Z 0002.8
07:41:09	04/19/05	Z 0002.8
07:42:09	04/19/05	Z 0002.8
07:43:09	04/19/05	Z 0002.6
07:44:09	04/19/05	Z 0002.5
07:45:09	04/19/05	Z 0002.5
07:46:09	04/19/05	Z 0002.5
07:47:09	04/19/05	Z 0002.4
07:48:09	04/19/05	Z 0002.5
07:49:09	04/19/05	Z 0002.5
07:50:09	04/19/05	Z 0002.5
07:51:09	04/19/05	Z 0002.5
07:52:09	04/19/05	Z 0002.6
07:53:09	04/19/05	Z 0002.5
07:54:09	04/19/05	Z 0002.5
07:55:09	04/19/05	Z 0002.5
07:56:09	04/19/05	Z 0002.4
07:57:09	04/19/05	Z 0002.3
07:58:09	04/19/05	Z 0002.2
07:59:09	04/19/05	Z 0002.2
08:00:09	04/19/05	Z 0002.3
08:01:09	04/19/05	Z 0002.3
08:02:09	04/19/05	Z 0002.2
08:03:09	04/19/05	Z 0002.4
08:04:09	04/19/05	Z 0002.4
08:05:09	04/19/05	Z 0002.3
08:06:09	04/19/05	Z 0002.3
08:07:09	04/19/05	Z 0002.3
08:08:09	04/19/05	Z 0002.2
08:09:09	04/19/05	Z 0002.2
08:10:09	04/19/05	Z 0002.3
08:11:09	04/19/05	Z 0002.4
08:12:09	04/19/05	Z 0002.4
08:13:09	04/19/05	Z 0002.5
08:14:09	04/19/05	Z 0002.4
08:15:09	04/19/05	Z 0002.3
08:16:09	04/19/05	Z 0002.4
08:17:09	04/19/05	Z 0002.3
08:18:09	04/19/05	Z 0002.4
08:19:09	04/19/05	Z 0002.4
08:20:09	04/19/05	Z 0002.5
08:21:09	04/19/05	Z 0002.6
08:22:09	04/19/05	Z 0003.2
08:23:09	04/19/05	Z 0002.8
08:24:09	04/19/05	Z 0002.6
08:25:09	04/19/05	Z 0002.5
08:26:09	04/19/05	Z 0002.5
08:27:09	04/19/05	Z 0002.3
08:28:09	04/19/05	Z 0002.2
08:29:09	04/19/05	Z 0002.3
08:30:09	04/19/05	Z 0002.3
08:31:09	04/19/05	Z 0002.4

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

08:32:09	04/19/05	
2 0002.3		
08:33:09	04/19/05	
2 0002.3		
08:34:09	04/19/05	
2 0002.4		
08:35:09	04/19/05	
2 0003.0		
08:36:09	04/19/05	
2 0002.8		
08:37:09	04/19/05	
2 0002.8		
08:38:09	04/19/05	
2 0002.8		
08:39:09	04/19/05	
2 0002.6		
08:40:09	04/19/05	
2 0002.5		
08:41:09	04/19/05	
2 0002.5		
08:42:09	04/19/05	
2 0002.4		
08:43:09	04/19/05	
2 0002.3		
08:44:09	04/19/05	
2 0002.3		
08:45:09	04/19/05	
2 0002.4		
08:46:09	04/19/05	
2 0002.4		
08:47:09	04/19/05	
2 0002.4		
08:48:09	04/19/05	
2 0002.4		
08:49:09	04/19/05	
2 0002.4		
08:50:09	04/19/05	
2 0002.4		
08:51:09	04/19/05	
2 0002.5		
08:52:09	04/19/05	
2 0002.4		
08:53:09	04/19/05	
2 0002.4		
08:54:09	04/19/05	
2 0002.5		
08:55:09	04/19/05	
2 0002.6		
08:56:09	04/19/05	
2 0002.6		
08:57:09	04/19/05	
2 0002.5		
08:58:09	04/19/05	
2 0002.5		
08:59:09	04/19/05	
2 0002.4		
09:00:09	04/19/05	
2 0002.4		
09:01:09	04/19/05	
2 0002.4		
09:02:09	04/19/05	
2 0003.0		
09:03:09	04/19/05	
2 0002.8		
09:04:09	04/19/05	
2 0002.5		
09:05:09	04/19/05	
2 0002.6		
09:06:09	04/19/05	
2 0002.5		
09:07:09	04/19/05	
2 0002.4		
09:08:09	04/19/05	
2 0002.4		
09:09:09	04/19/05	
2 0002.4		
09:10:09	04/19/05	
2 0002.4		
09:11:09	04/19/05	
2 0002.4		
09:12:09	04/19/05	
2 0002.4		
09:13:09	04/19/05	
2 0002.5		
09:14:09	04/19/05	
2 0002.5		
09:15:09	04/19/05	
2 0002.8		
09:16:09	04/19/05	
2 0003.7		
09:17:09	04/19/05	
2 0002.8		
09:18:09	04/19/05	
2 0002.5		
09:19:09	04/19/05	
2 0002.4		
09:20:09	04/19/05	
2 0002.4		
09:21:09	04/19/05	
2 0002.4		
09:22:09	04/19/05	
2 0002.3		
09:23:09	04/19/05	
2 0002.4		
09:24:09	04/19/05	
2 0002.4		
09:25:09	04/19/05	
2 0002.4		
09:26:09	04/19/05	
2 0002.5		
09:27:09	04/19/05	
2 0002.5		
09:28:09	04/19/05	
2 0002.5		
09:29:09	04/19/05	
2 0002.5		
09:30:09	04/19/05	
2 0002.5		
09:31:09	04/19/05	
2 0002.5		
09:32:09	04/19/05	
2 0002.5		
09:33:09	04/19/05	
2 0002.4		
09:34:09	04/19/05	
2 0002.3		

ANALYZER FIELD DATA

Company: Nucor Steel
Location: Crawfordsville, Indiana
Source: PPFF Baghouse #2 - VOC
Date: 4/18/05 - 4/19/05

```
   09:35:09  04/19/05
2  0002.4

   09:36:09  04/19/05
2  0002.4

   09:37:09  04/19/05
2  0002.3

   09:38:09  04/19/05
2  0002.3

   09:39:09  04/19/05
2  0002.4

   09:40:09  04/19/05
2  0002.4

   09:41:09  04/19/05
2  0002.4

   09:42:09  04/19/05
2  0002.4

   09:43:09  04/19/05
2  0002.4

   09:44:09  04/19/05
2  0002.5

   09:45:09  04/19/05
2  0002.5

   09:46:09  04/19/05
2  0002.5

   09:47:09  04/19/05
2  0003.2

   09:48:09  04/19/05
2  0003.1

   09:49:09  04/19/05
2  0003.1

   09:50:09  04/19/05
2  0003.0

   09:51:09  04/19/05
2  0003.0

   09:52:09  04/19/05
2  0002.8
```

```
********  ON     ********
********  RUN    ********

   10:12:05  04/19/05
2  0048.3
```

48.6

```
********  OFF    ********

********  ON     ********
********  RUN    ********

   10:13:51  04/19/05
2  0000.6
```

zero

LABORATORY DATA

PARTICULATE WEIGHT SHEET

Source: Nucor Steel PPFF #2 – Crawfordsville, IN

Date:		04/18/05	04/19/05	04/22/05
Acetone	**Blank**	**1**	**2**	**3**
Run ID#	A-10	A1	A3	A7
Tare Wt	63.8178	66.3444	64.5674	65.7277
Gross Wt	63.8178	66.3467	64.5708	65.7334
Correction	0.0000	0.0000	0.0000	0.0000
Net Wt	0.0000	0.0023	0.0034	0.0057
Filter		**1**	**2**	**3**
Run ID#		#330	#329	#331
Tare Wt		0.4353	0.4382	0.4400
Gross Wt		0.4368	0.4399	0.4419
Net Wt		0.0015	0.0017	0.0019

Total Gain		**0.0038**	**0.0051**	**0.0076**

Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, IN 46219

Nucor Steel-PPFF Baghouse # 2

PO# 128

Analytical Report

(0405-92)

EPA Method 202

Condensible particulate

HPLC Analysis

Sulfate

Enthalpy Analytical, Inc.

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
2202 Ellis Road Durham, NC 27703 - 5518

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)
- This analytical report was prepared in Portable Document Format (.PDF) and contains 57 pages.

Michael Steven Schapira

QA Review Performed by: Michael Steven Schapira

Summary of Results

EPA Method 202 - Condensible Particulate Determination - Data Analysis

Company	Air Test Professionals
Analyst	SLG
Parameters	Method 202
# Samples	3 Runs and 1 Blank

Client #	Nucor Steel-PPFF BH-2
Job #	0405-92
PO #	128
Report Date	5/16/05

Analysis of Particulate Recovery

Sample ID Number	Run-1	Run-2	Run-3
Organic			
Beaker Number	6827	6832	6839
Final Weight, g	0.9379	0.9422	0.9423
Reweigh, Final, g	0.9378	0.9422	0.9423
Beaker Tare Weight, g	0.9345	0.9390	0.9387
Beaker Tare Reweigh, Initial, g	0.9345	0.9387	0.9386
Solvent Blank, g	0.0017	0.0017	0.0017
MeCl2 FV, mL	230	212	226
Net Organic Catch, mg	1.6	1.8	2.0
Inorganic			
Beaker Number	6873	6879	6895
Final Weight, g	0.9486	0.9537	0.9448
Reweigh, Final, g	0.9485	0.9537	0.9447
Beaker Tare Weight, g	0.9417	0.9374	0.9397
Beaker Tare Reweigh, Initial, g	0.9416	0.9374	0.9396
Water Blank, g	0.0009	0.0008	0.0010
Sample Final Volume, mL	509	479	547
Charge and Rinse Vol, mL	424	395	475
Sulfate aliquot, mL	5.00	5.00	5.00
Sulfate aliquot CF	1.01	1.01	1.01
Net Inorganic CF	1.09	1.09	1.09
Net Inorganic, mg	6.7	17.1	4.6
Sulfate Catch, ug	7,126	26,499	7,158
Sulfate Correction, mg	2.5	9.5	2.6
Total Correction, mg	2.5	9.5	2.6
Corrected Inorganic, mg	4.2	7.6	2.0
Condensible Particulate, mg	5.7	9.4	4.0

Blank Analysis

Sample ID Number	MeCl Blank
Beaker Number	6837
Final Weight, g	0.9375
Reweigh, Final, g	0.9376
Initial Weight, g	0.9389
Reweigh, Initial, g	0.9390
MeCl2 Residue, g	-0.0014
MeCl2 Volume, mL	102
Max. MeCl2 Residue, g	0.0014

Sample ID Number	H2O Blank
Beaker Number	6877
Final Weight, g	0.9358
Reweigh, Final, g	0.9358
Initial Weight, g	0.9349
Reweigh, Initial, g	0.9348
Water Residue, g	0.0010
Water Volume, mL	469
Max. Water Residue, g	0.0047

In-House Blank Analysis

Sample ID Number	MeCl Blank
Beaker Number	6836
Final Weight, g	0.9390
Reweigh, Final, g	0.9390
Initial Weight, g	0.9365
Reweigh, Initial, g	0.9364
MeCl2 Residue, g	0.0026
MeCl2 Volume, mL	225
Max. MeCl2 Residue, g	0.0030

Sample ID Number	H2O Blank
Beaker Number	6894
Final Weight, g	0.9416
Reweigh, Final, g	0.9416
Initial Weight, g	0.9409
Reweigh, Initial, g	0.9409
Water Residue, g	0.0007
Water Volume, mL	250
Max. Water Residue, g	0.0025

Company	Air Test Professionals
Analyst Initials	TG
Parameters	HPLC Analysis
# Samples	3 Runs & 1 blank

Client #	Nucor Steel-PPFF-BH#2
Job #	0405-92
PO #	128
Report Date	5/16/2005

Compound	Sample ID / Catch Weight (ug)			
	Run 1	***Run 2***	***Run 3***	***Blank***
Sulfate	7,126	26,499	7,158	53.6

Results

Company	Air Test Professionals
Analyst Initials	TG
Parameters	HPLC Analysis
# Samples	3 Runs & 1 blank

Client #	Nucor Steel-PPFF-BH#2
Job #	0405-92
PO #	128
Report Date	5/16/2005

MDL 0.0622 (ug/mL)
LOQ 0.300 (ug/mL)
Compound Sulfate

Lower Curve Limit 0.617 (ug/mL)
Upper Curve Limit 13.0 (ug/mL)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time # 1	Ret Time # 2	% Diff Ret	Conc # 1	Conc # 2	% Diff Conc	Avg Conc (ug/mL)	Vol (mL)	DF	Catch Weight (ug)	Qual
Run 1	033-3801.D	033-3802.D	0405-92R.	9.37	9.37	0.1	1.19	1.18	0.6	1.19	60.0	100	7,126	
Run 2	034-3901.D	034-3902.D	0405-92R.	9.36	9.36	0.0	4.44	4.39	0.5	4.42	60.0	100	26,499	
Run 3	035-4001.D	035-4002.D	0405-92R.	9.37	9.37	0.0	1.19	1.19	0.1	1.19	60.0	100	7,158	
Blank	014-1201.D	014-1202.D	0405-92R.	9.37	9.40	0.3	0.898	0.889	0.5	0.893	60.0	1	53.6	
IH Blank	036-4101.D	036-4102.D	0405-92R.	9.40	9.38	0.2	0.468	0.482	1.5	0.475	60.0	1	28.5	
Lab blank	008-0801.D	008-0802.D	0405-92R.	NA	NA	NA	0.0622	0.0622	NA	0.0622	1.00	1	0.0622	ND
MS / Run 2	045-4401.D	045-4402.D	0405-92R.	9.36	9.36	0.0	6.90	6.82	0.5	6.86	1.05	1	7.20	

spike amount (ug)	2.50
native amount (ug)	4.42
spike recovery	111%

Narrative Summary

Enthalpy Analytical Narrative Summary

Company:	Air Test Professionals
Client #:	Nucor Steel-PPFF Baghouse #2
PO #	128

Enthalpy #:	0405-92
Analyst:	SLG / TG
Parameters:	EPA Method 202

Custody

Craig Mefford of Enthalpy Analytical, Inc. received the samples at 15.8 °C on 4/28/05 after being relinquished by Air Test Professionals, Inc. Prior to analysis the samples were kept under lock with access only by authorized personnel of Enthalpy Analytical, Inc.

Methodology

All samples were analyzed in accordance to the requirements and specifications of EPA Method 202.

Instrumentation

All samples were weighed on a Mettler AB265-S (SN-1125163272), certified by Precision Weighing, Inc. through November 8, 2005 (NIST Test # 936770B).

Labeling

OK

Reporting Notes

The inorganic and organic catch weights are adjusted by a blank correction value. A mathematically determined (theoretical) maximum value is calculated and compared with the actual value measured for each blank. The lower of the two values is used as the blank correction value, which is then factored by the sample volume divided by the blank volume, and subtracted from the sample's catch weight.

The client's methylene chloride blank had a negative particulate weight. The final value was remeasured again and confirmed the earlier measurements, so it appears that the tare weight must have been wrong. No blank adjustment has been made for the portion of the methylene chloride sample which was from the client. The blank adjustment which does appear in the spreadsheet for the organic fractions is from the 150 mL of Enthalpy's purchased methylene chloride, which is used to complete the sample extraction process.

Enthalpy considers gravimetric analyses for M202 ±0.5 mg at best. Therefore, negative catch weights between 0 and –0.5 mg are set to zero and no investigation is undertaken. Negative catch weights <-0.5 mg are investigated. None of the catch results for this data set were <-0.5 mg.

We have reported the sulfate result from the analysis of the post- (resuspended liquid) fraction of the samples, rather then the pre- (initial liquid) fraction. This gives the more scientifically correct number.

Enthalpy Analytical Narrative Summary

Company:	Air Test Professionals	Enthalpy #:	0405-92
Client #:	Nucor Steel-PPFF	Analyst:	TG
PO #:	128	Parameters:	HPLC Analysis

Custody Craig Mefford of Enthalpy Analytical, Inc. received the samples at 15.8 °C on 4/28/05 after being relinquished by Air Test Professionals, Inc. Prior to analysis the samples were kept under lock with access only by authorized personnel of Enthalpy Analytical, Inc.

Analysis The samples were analyzed for sulfate using a Hewlett-Packard series 1100 High Performance Liquid Chromatograph with a Waters 430 conductivity detector and an Alltech ERIS 1000HP Autosuppressor.

Separation Separation was accomplished by a Dionex IonPac AS14A 250 x 4.0 mm analytical column using 8.0 *mM* Na_2CO_3/1.0 *mM* $NaHCO_3$ as the eluent at 1.2 mL per minute. A copy of the analytical method (0305-96.M) is included.

Before the sample analyses, a calibration curve was prepared and analyzed.

Sulfate eluted at approximately 9.4 minutes, separated well, and was easily identified.

Matrix Spike A matrix spike was prepared by spiking a 1.00-mL aliquot of sample ***Run 2*** with 2.50 µg of sulfate (50.0 µL of a 50.0 µg/mL solution). The spiked sample was analyzed in the same manner as the other samples. The calculated spike recovery was 111%.

Reproducibility OK

Blank One blank sample, ***Blank***, was analyzed and reported. No blank adjustments were made to any of the reported data.

Reporting Notes None.

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, Inc. reports, unless specifically noted otherwise.

- The symbol ***MDL*** represents the Minimum Detection Limit. Below this value the laboratory cannot confirm the presence of the analyte of interest reliably.
- The symbol ***LOQ*** represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.
- The symbol ***ND*** following a value indicates a non-detect or analytical result below the MDL.
- The symbol ***J*** following a value indicates an analytical result between the MDL and the LOQ. A J flag indicates that the laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.
- The symbol ***E*** following a value indicates an analytical result exceeding 100% of the highest calibration point.
- The symbol ***DF*** represents a Dilution Factor. This number represents dilutions during the extraction and/or laboratory stages of sample treatment. The analytical result taken from a laboratory instrument is multiplied by the DF to get final results.
- The Sample ID ***MS*** represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. This shows what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix prohibits analysis for the analyte(s).
- The Sample ID ***MSD*** represents a Matrix Spike Duplicate. Prepared in the same manner as an MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times. Most methods performed by Enthalpy do not require analysis of an MSD.
- The Sample ID ***BS*** represents a Blind Spike. A member of the Quality Assurance department has created BS samples for many of the analytes Enthalpy tests for, and only QA and the Enthalpy Analytical ownership have access to the actual values of these samples. The laboratory analyzes them without knowledge of the actual value, and the spreadsheets get completed for these samples solely by the QA group.
- The Sample ID ***LCS*** represents a Laboratory Control Sample. Whenever spikes are prepared for our clients more spikes are prepared than needed. The extras (randomly chosen) are kept in-house at the appropriate temperature conditions. When the spike samples come back from the client for analysis, the LCSs (usually two are saved) are analyzed to confirm that the analyte could be recovered from the media, separate from the spike samples which were used on the project and which may have had issues caused during collection and/or transport.
- **Significant Figures**: Where the reported value is much greater than unity (1.00) in the units expressed (specifically values of 1,000 or greater), the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits reported, but no confidence should be placed on more than three significant digits.

Sample Custody

ATP - Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, Indiana 46219

Phone (317) 345-1723
Fax (317) 351-0411
Email: atp_stack@sbcglobal.net

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF Baghouse #2
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO. 128

LAB JOB NO.

SAMPLE NO	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV	No. OF CONTAINERS	EPA METHOD 202	REMARKS / PRECAUTIONS
Run 1	MeCl2 Rinse	04/18/05		AQ	4 oz		1	X	
Run 2	MeCl2 Rinse	04/19/05		AQ	4 oz		1	X	
Run 3	MeCl2 Rinse	04/22/05		AQ	4 oz		1	X	
Run 1	DI H2O Rinse	04/18/05		AQ	500 ml		1	X	** Perform Sulfate Correction
Run 2	DI H2O Rinse	04/19/05		AQ	500 ml		1	X	
Run 3	DI H2O Rinse	04/22/05		AQ	500 ml		1	X	
BLANK	Common - MeCl2			AQ	4 oz		1	X	← USE COMMON
BLANK	Common - DI H2O			AQ	500 ml		1	X	BLANKS - ISSUE

SEPARATE REPORTS..

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND: *

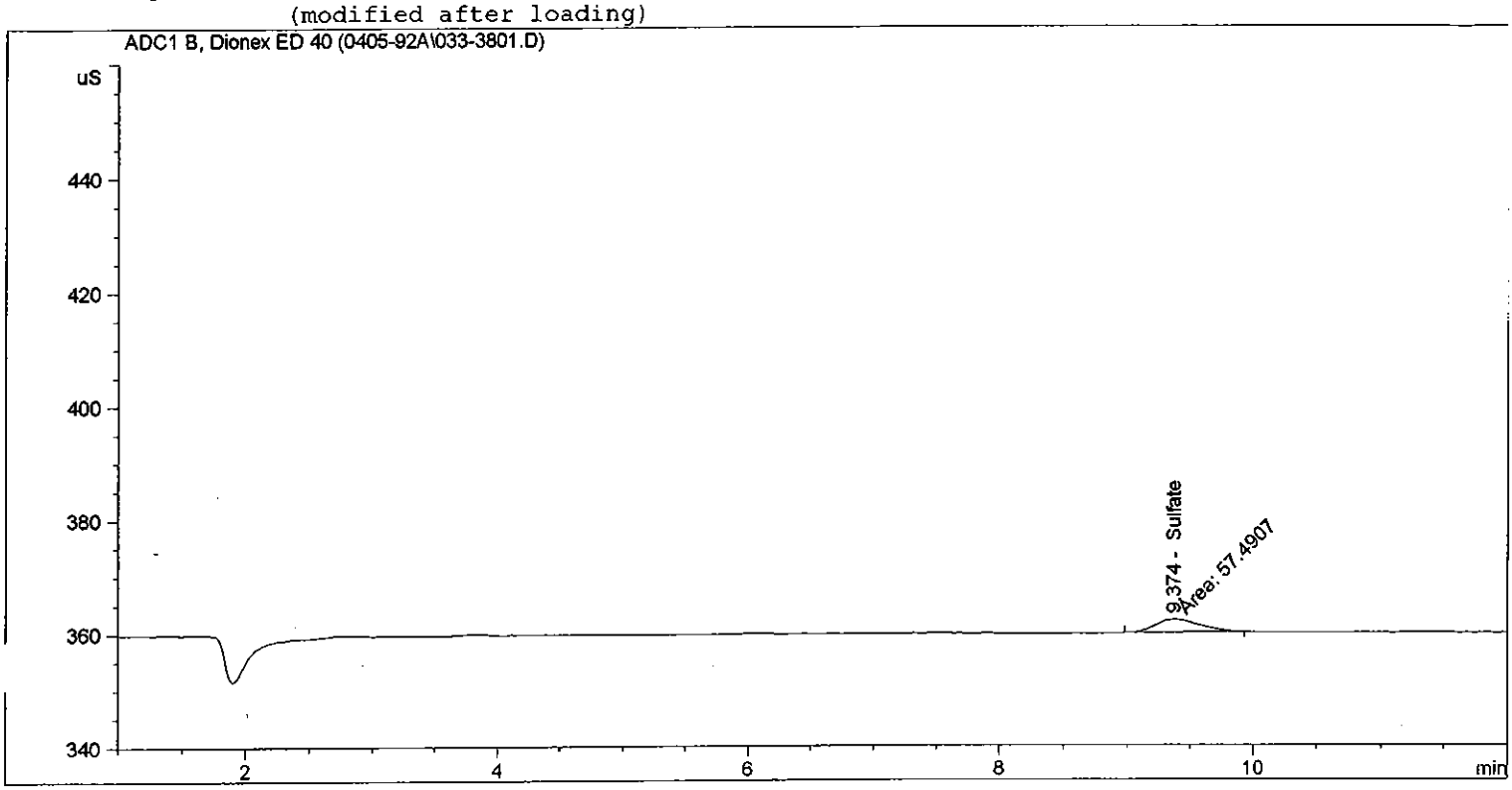
1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	04/27/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE 4/28/05
SIGNATURE:		SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY Enthalpy	TIME 9:30

T = 15.8°C

Sample Chromatograms

0405-92

```
================================================================================
Injection Date  : 5/12/2005 12:40:32 PM          Seq. Line :  38
Sample Name     : Run 1 Post*100                  Location : Vial 33
Acq. Operator   : TG                                  Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:38:21 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|---------
  9.374 MM       57.49072 2.07782e-2    1.19455     Sulfate

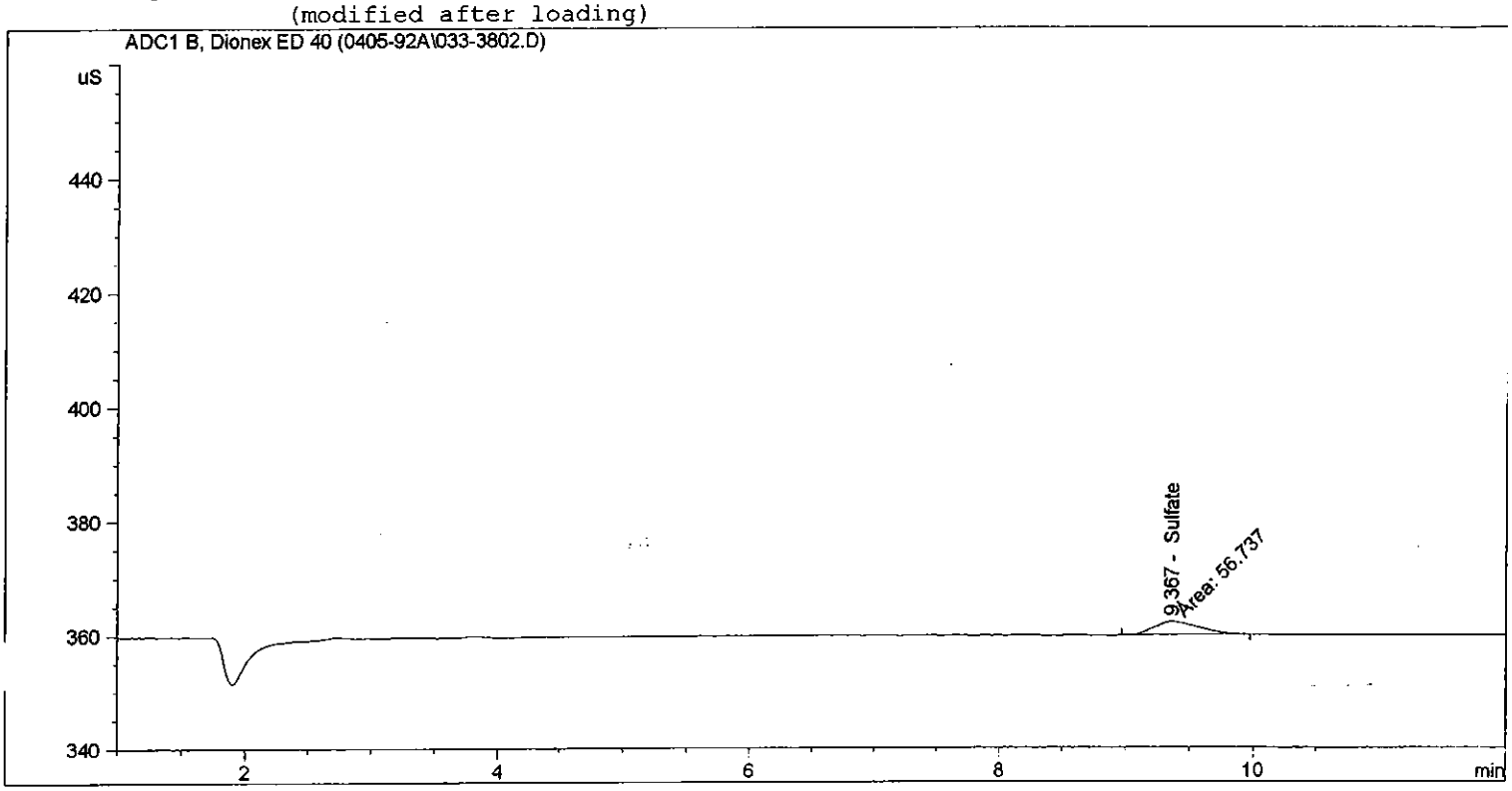
Totals :                                1.19455

 Results obtained with enhanced integrator!
================================================================================
                          *** End of Report ***
```

Manual Integration (TG)

0405-92

```
==========================================================================
Injection Date  : 5/12/2005 12:54:44 PM          Seq. Line :  38
Sample Name     : Run 1 Post*100                  Location : Vial 33
Acq. Operator   : TG                                 Inj :   2
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:52:43 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

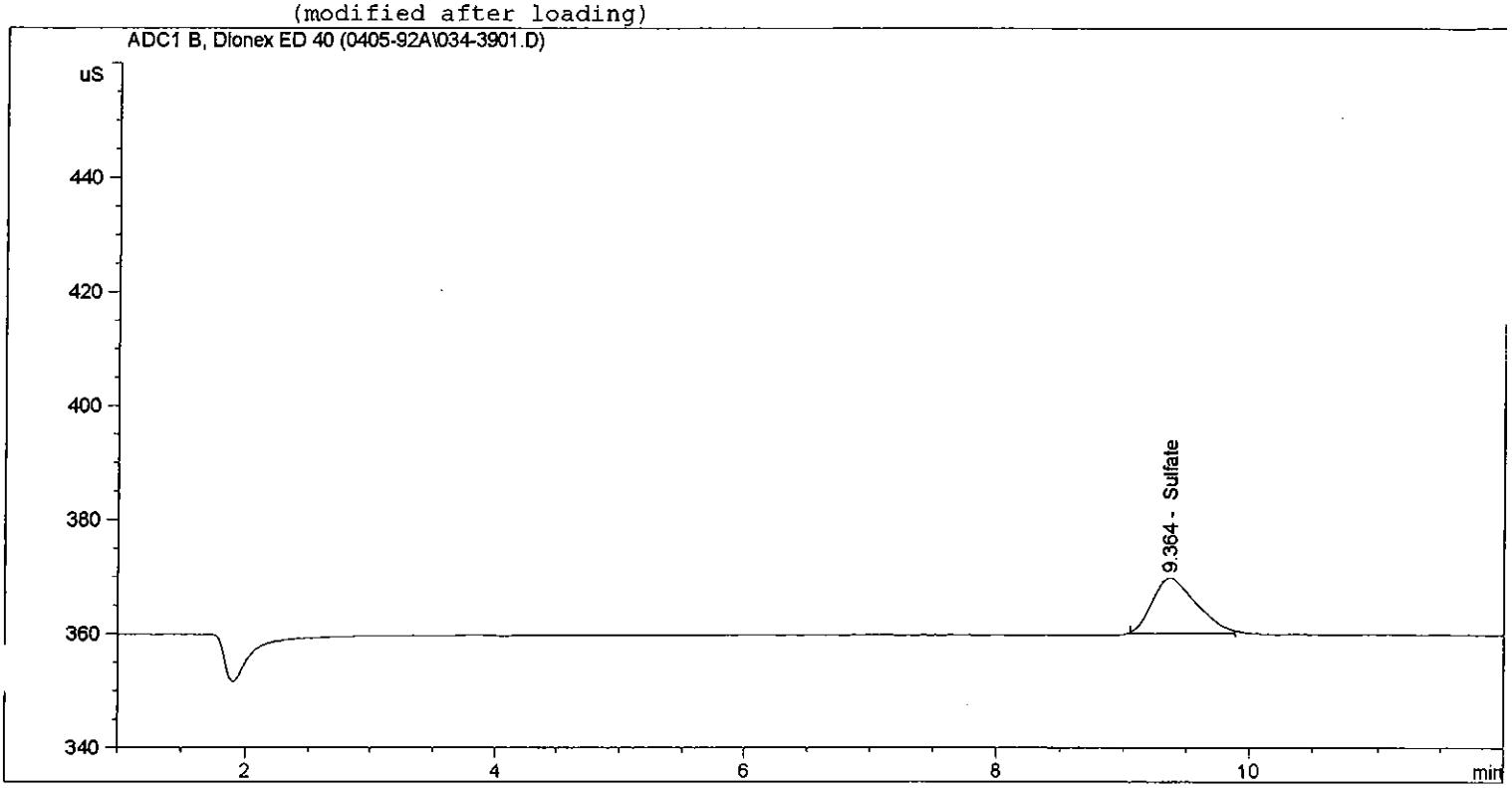
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.367 MM       56.73701 2.08125e-2    1.18084     Sulfate  Manual Integration (TG)

Totals :                                1.18084

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
Injection Date  : 5/12/2005 1:09:09 PM          Seq. Line :  39
Sample Name     : Run 2 Post*100                 Location : Vial 34
Acq. Operator   : TG                                Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 1:06:54 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

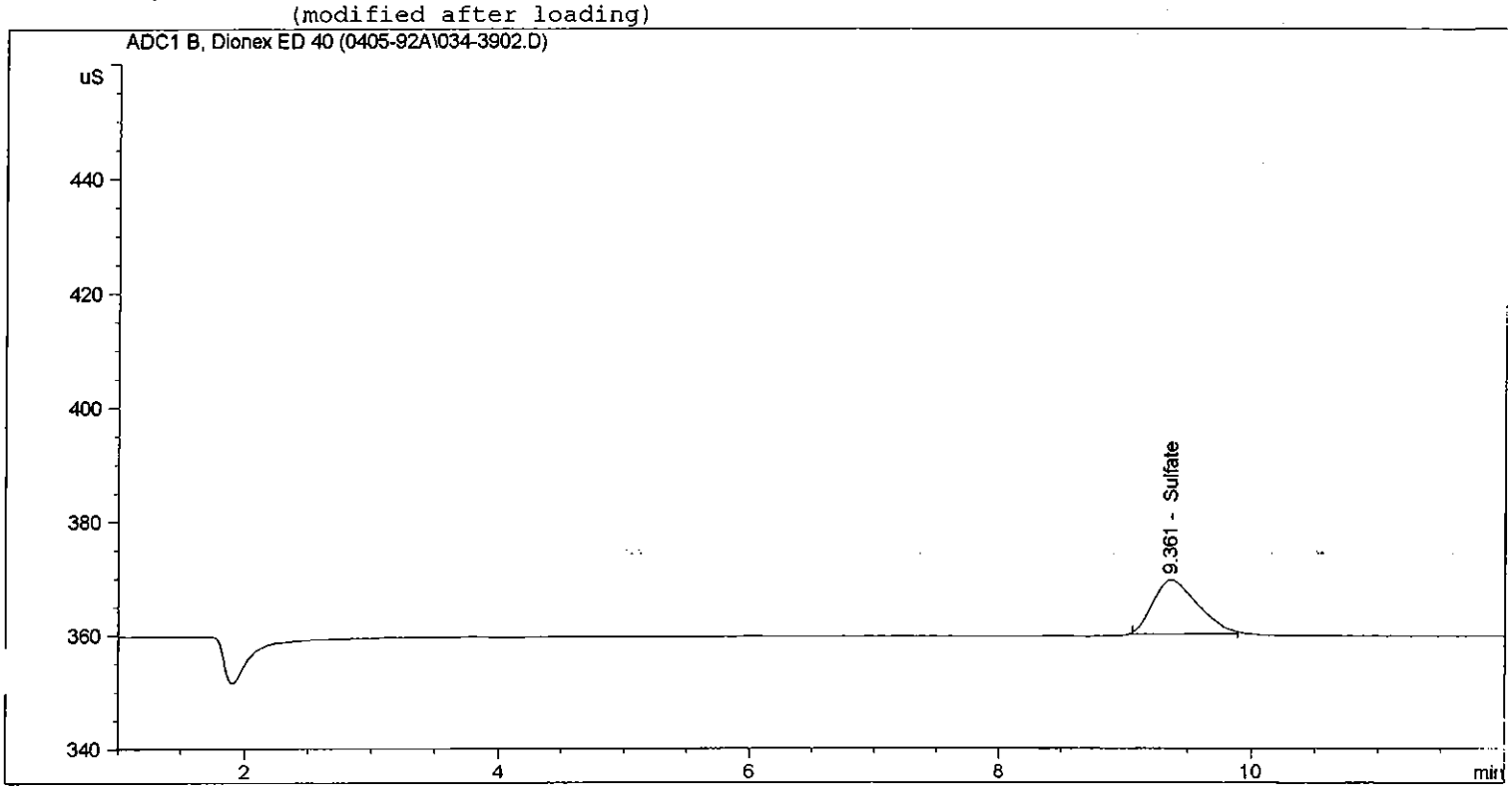
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.364 BB      235.80093 1.88240e-2    4.43872    Sulfate

Totals :                                4.43872

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
================================================================================
Injection Date  : 5/12/2005 1:23:28 PM          Seq. Line :  39
Sample Name     : Run 2 Post*100                 Location : Vial 34
Acq. Operator   : TG                                Inj :   2
\cq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 1:21:20 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

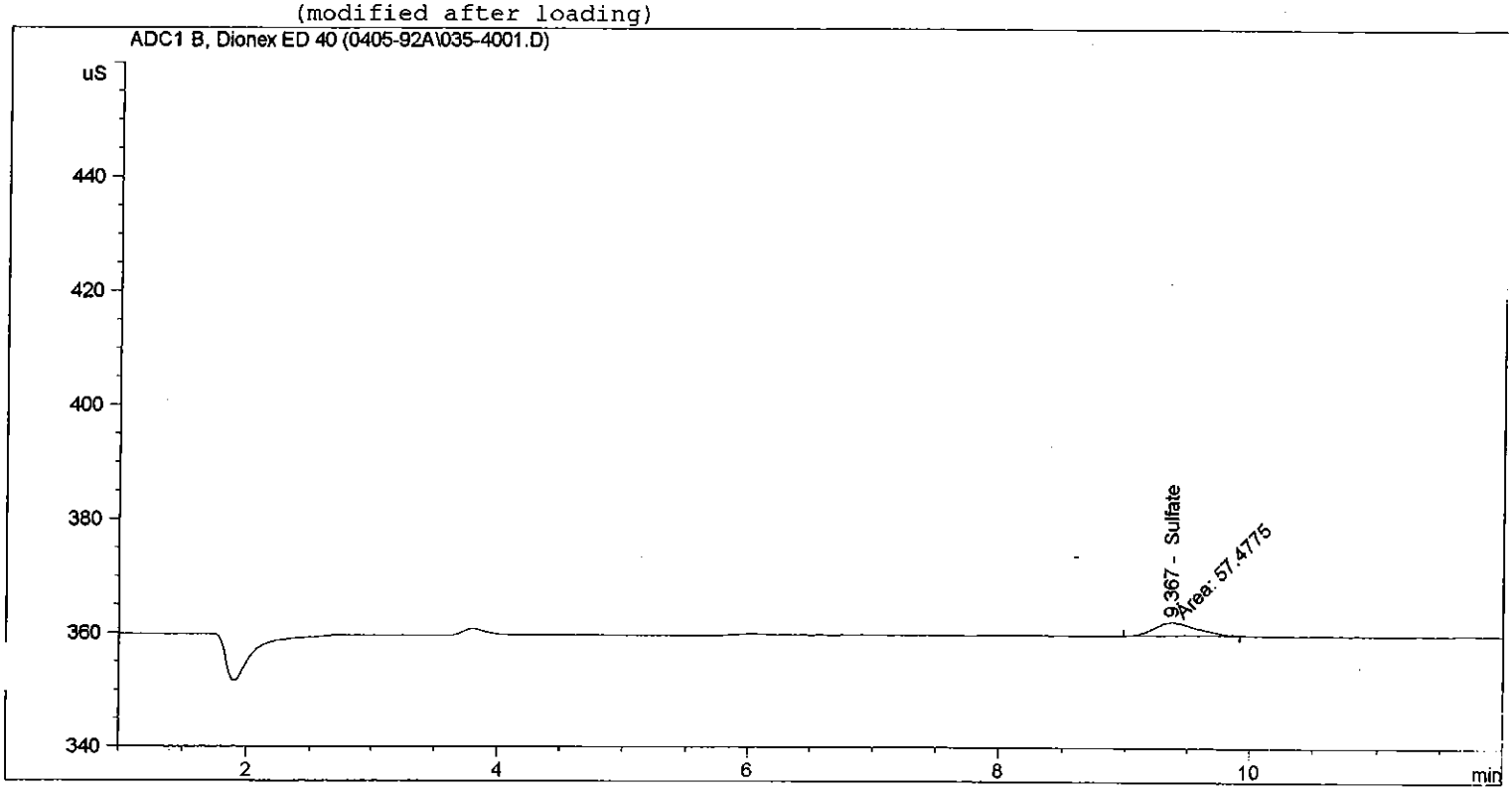
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.361 BB      233.35565 1.88306e-2    4.39423     Sulfate

Totals :                                4.39423

 Results obtained with enhanced integrator!
================================================================================
                          *** End of Report ***
```

```
================================================================================
Injection Date  : 5/12/2005 1:37:49 PM          Seq. Line :  40
Sample Name     : Run 3 Post*100                 Location : Vial 35
Acq. Operator   : TG                                Inj :   1
\cq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 1:35:40 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

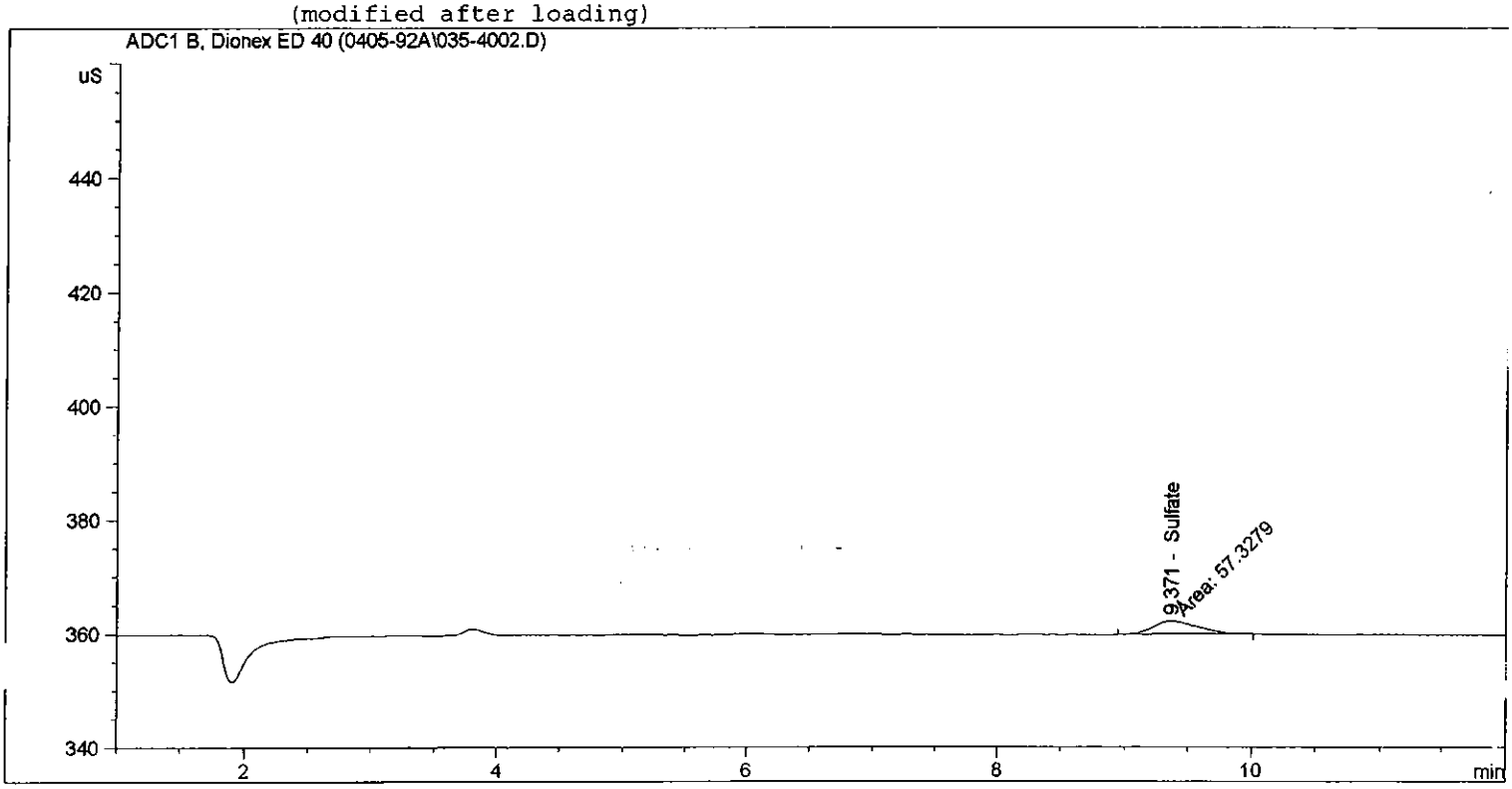
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|--------------------
  9.367 MM       57.47750 2.07788e-2    1.19431     Sulfate  Manual Integration (TG)

Totals :                                1.19431

 Results obtained with enhanced integrator!
================================================================================
                          *** End of Report ***
```

```
==========================================================================
Injection Date  : 5/12/2005 1:52:08 PM          Seq. Line :  40
Sample Name     : Run 3 Post*100                 Location : Vial 35
Acq. Operator   : TG                                Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 1:49:59 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

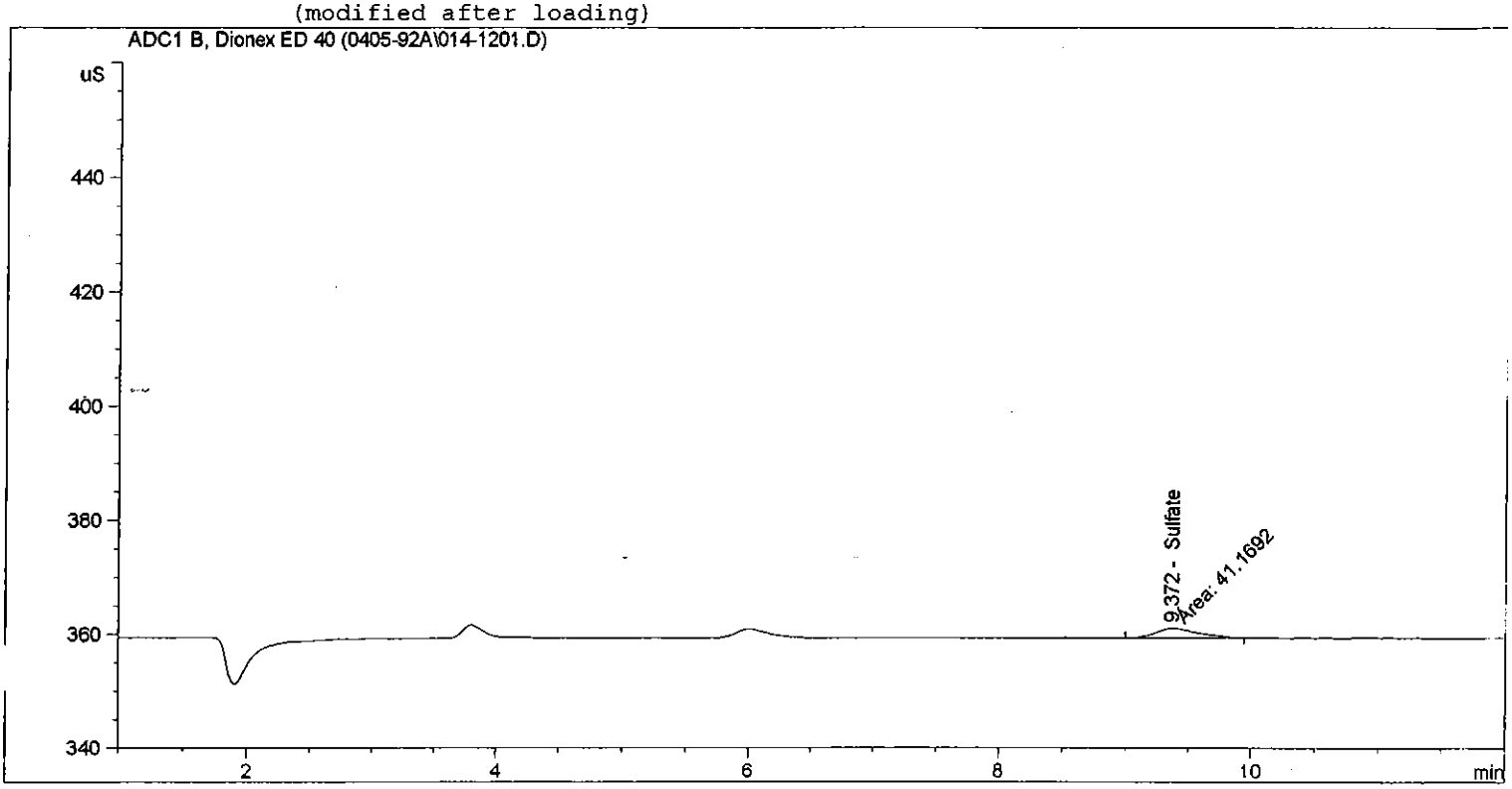
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|--------------------
  9.371 MM       57.32795 2.07856e-2    1.19159     Sulfate  Manual Integration (TG)

Totals :                                1.19159

 Results obtained with enhanced integrator!
==========================================================================
                         *** End of Report ***
```

0405-93 Sample blank

```
==========================================================================
Injection Date  : 5/12/2005 12:12:13 AM          Seq. Line :  12
Sample Name     : Blank Post                      Location : Vial 14
Acq. Operator   : TG                                  Inj :  1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:10:01 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|-----------------
  9.372 MM       41.16916 2.18028e-2 8.97601e-1     Sulfate

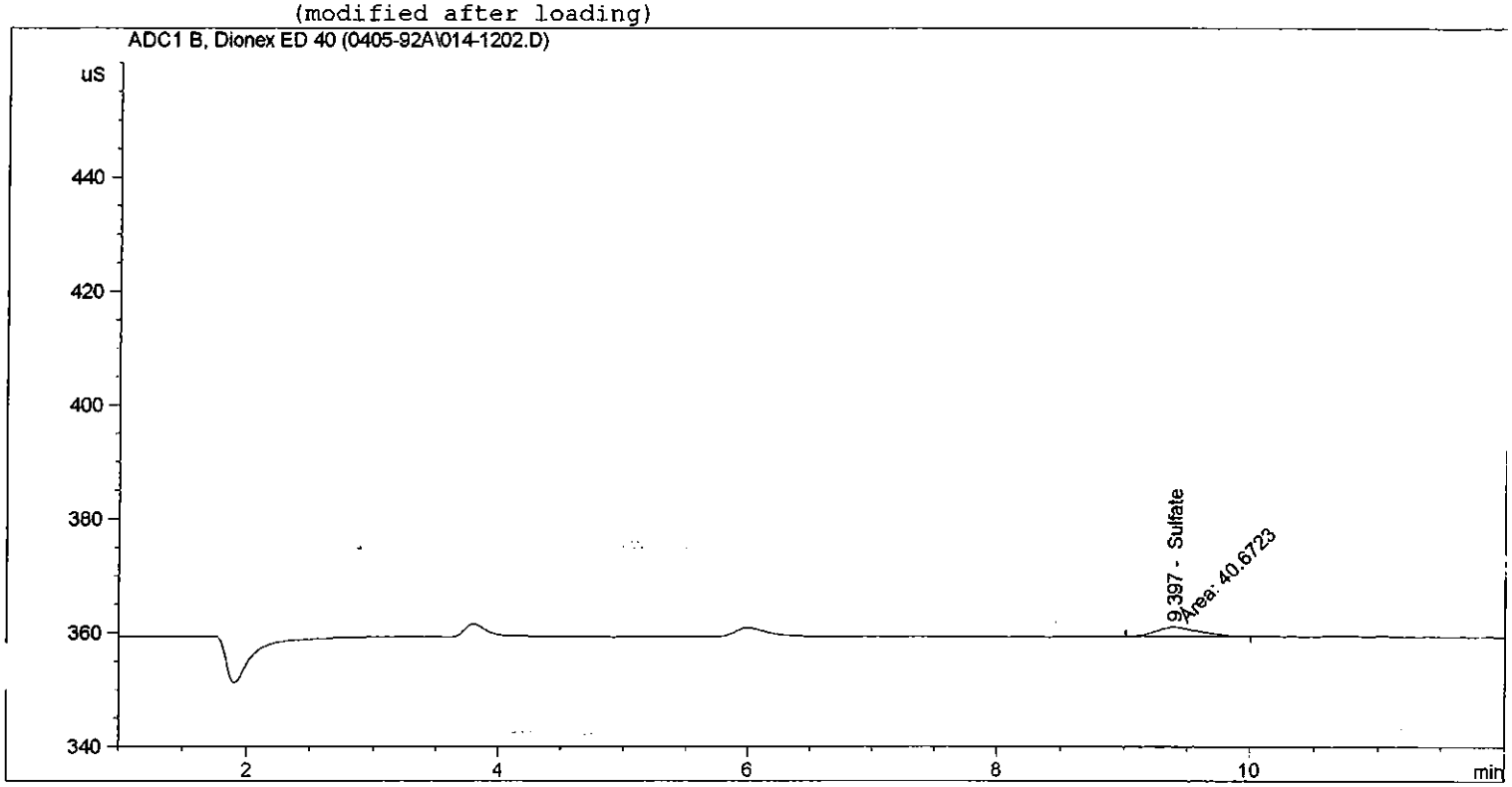
Totals :                              8.97601e-1

 Results obtained with enhanced integrator!
==========================================================================
                         *** End of Report ***
```

Manual Integration (TG)

0405-93 Sample blank

```
==========================================================================
Injection Date  : 5/12/2005 12:26:36 AM          Seq. Line :  12
Sample Name     : Blank Post                      Location : Vial 14
Acq. Operator   : TG                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:24:25 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

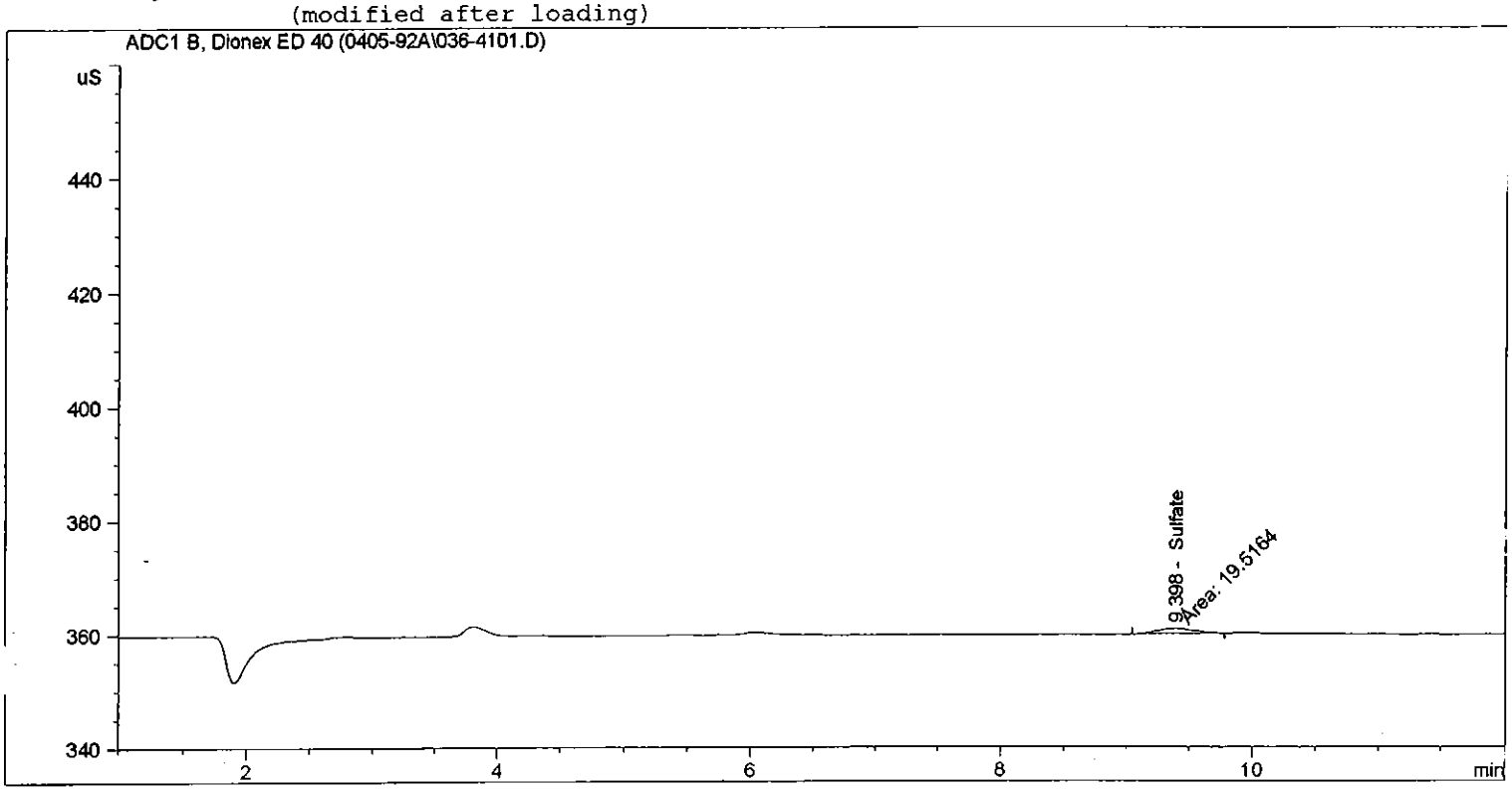
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|--------------------
  9.397 MM       40.67235 2.18468e-2 8.88562e-1    Sulfate  Manual Integration (TG)

Totals :                              8.88562e-1

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
==========================================================================
Injection Date  : 5/12/2005 2:06:30 PM          Seq. Line :  41
Sample Name     : IH Blank Post                  Location : Vial 36
Acq. Operator   : TG                                Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 2:04:21 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

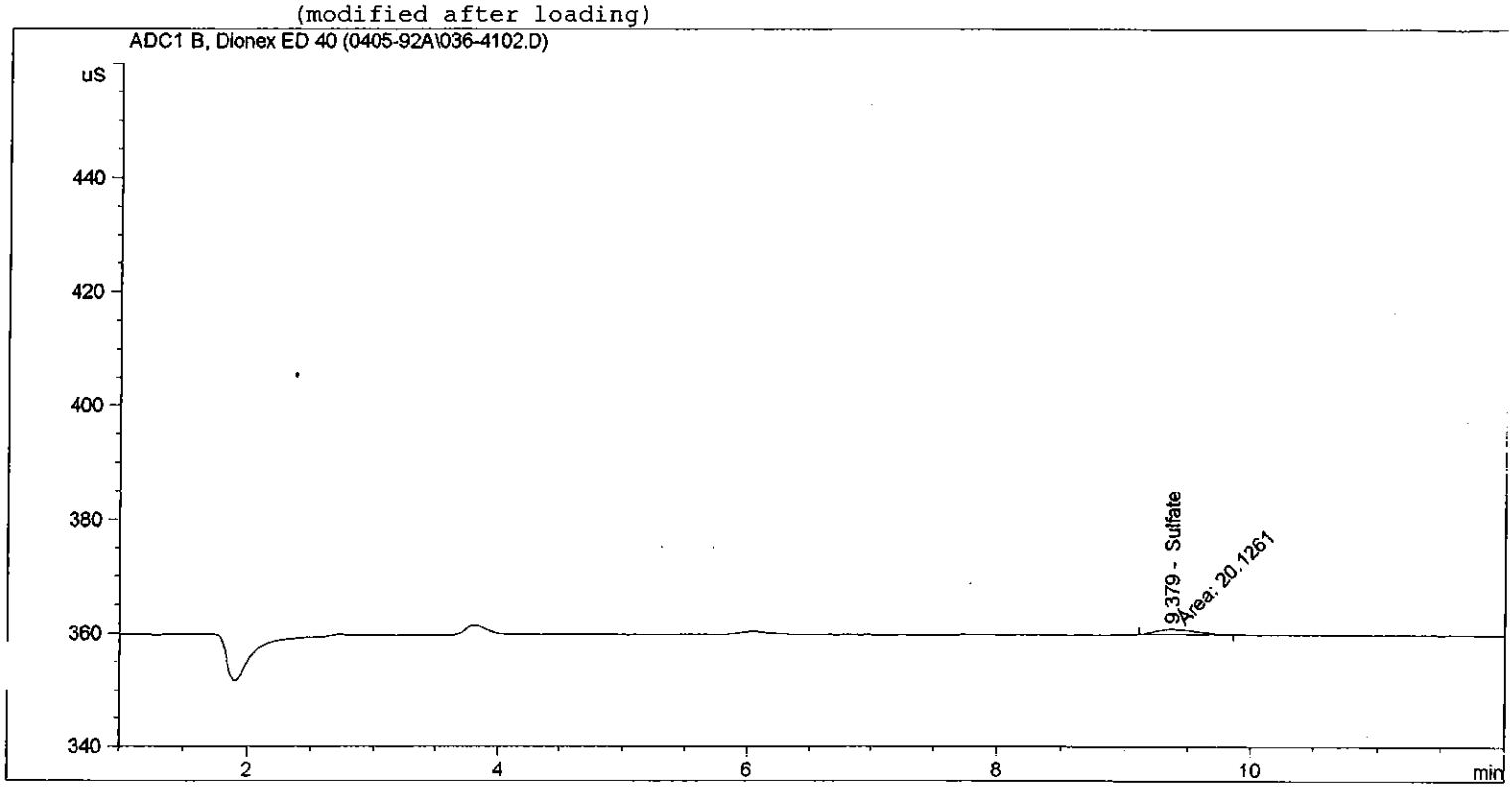
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.398 MM       19.51635 2.39646e-2 4.67701e-1     Sulfate  Manual Integration (TG)

Totals :                              4.67701e-1

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

0405-92

```
==========================================================================
Injection Date  : 5/12/2005 2:20:55 PM          Seq. Line :  41
Sample Name     : IH Blank Post                  Location : Vial 36
Acq. Operator   : TG                                Inj :   2
\cq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 2:20:32 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 1:03:27 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 1:03:25 PM
Multiplier            :      1.0000
Dilution              :      1.0000

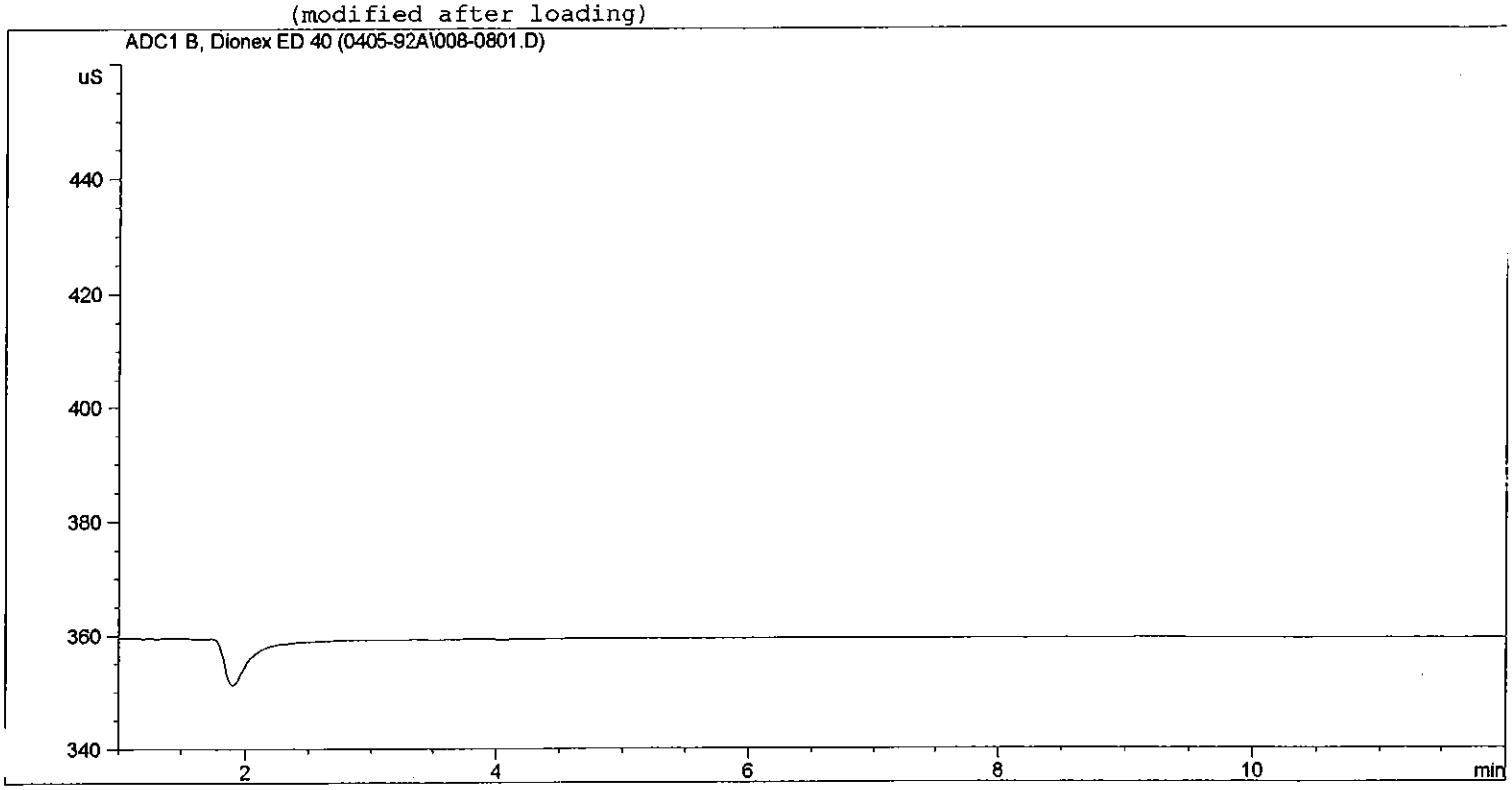
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.379 MM       20.12613 2.39646e-2 4.82314e-1    Sulfate  Manual Integration (TG)

Totals :                              4.82314e-1

 Results obtained with enhanced integrator!
==========================================================================
                         *** End of Report ***
```

```
Injection Date  : 5/11/2005 10:16:59 PM          Seq. Line :   8
Sample Name     : Lab blank                     Location : Vial 8
Acq. Operator   : TG                                Inj :   1
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

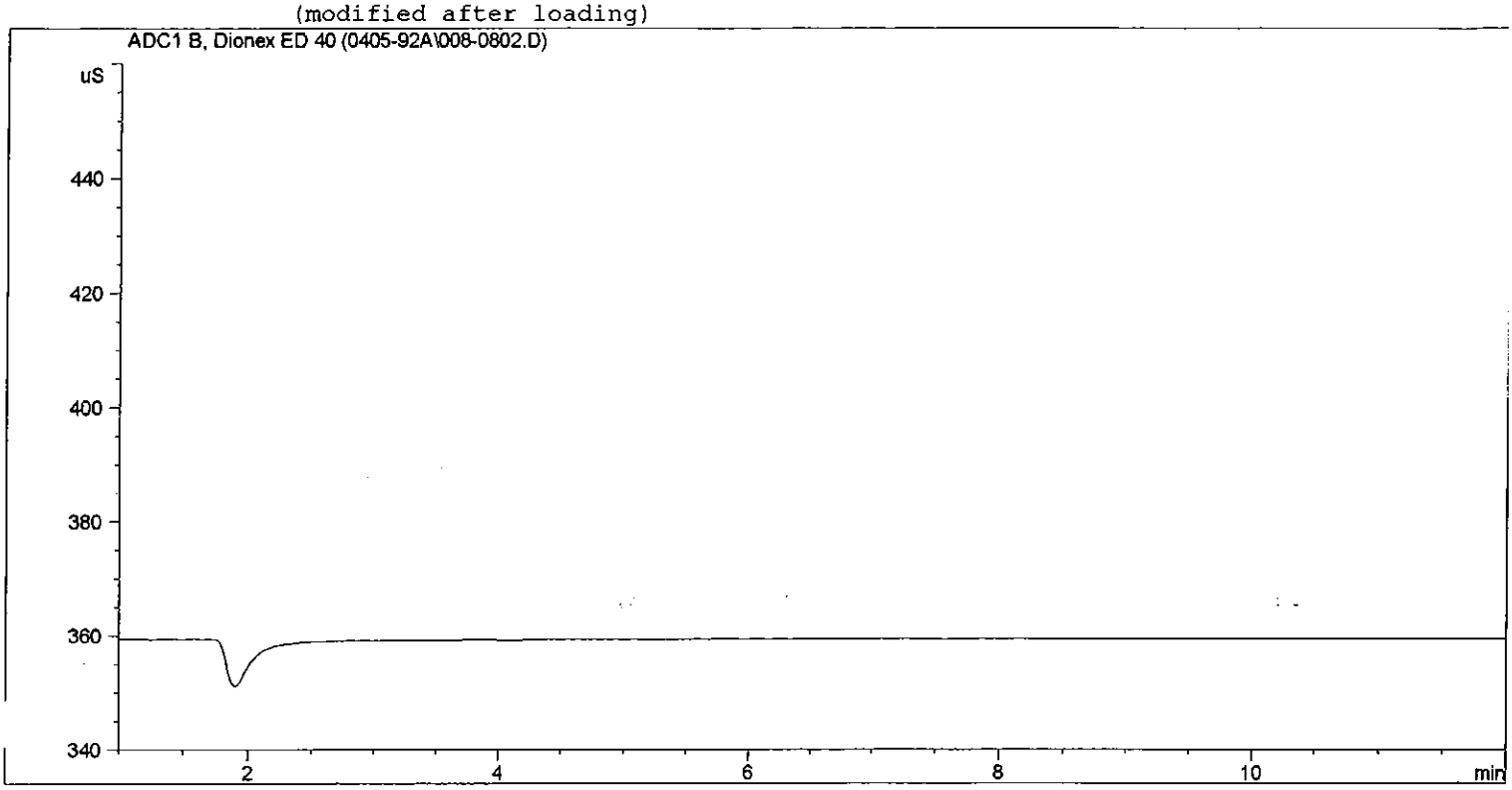
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360           -           -          -          Sulfate

Totals :                                 0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found
```

```
Injection Date  : 5/11/2005 10:31:25 PM          Seq. Line :   8
Sample Name     : Lab blank                     Location : Vial 8
Acq. Operator   : TG                                Inj :   2
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/11/2005 10:31:02 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                        External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360            -          -          -          Sulfate

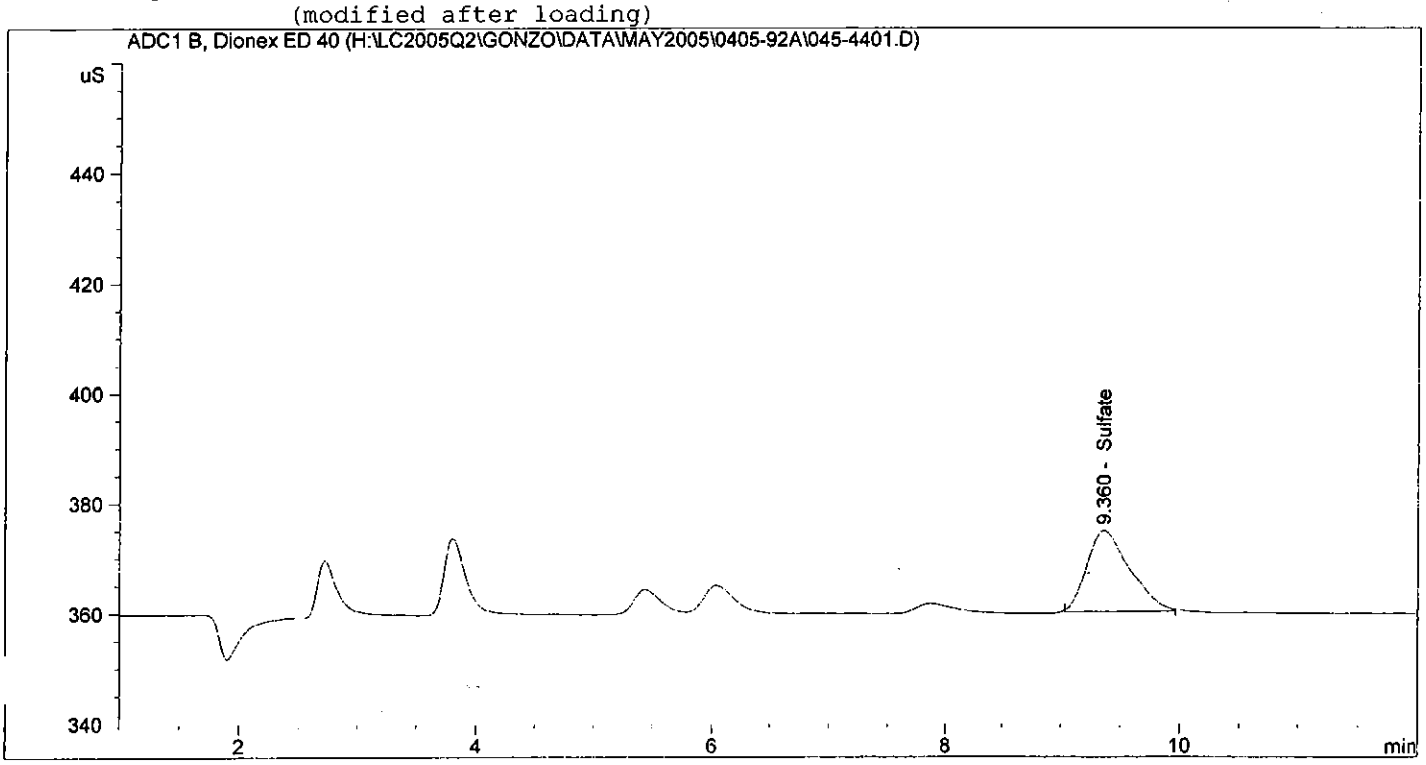
Totals :                                  0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found
```

0405-92 Matrix spike

```
Injection Date  : 5/12/2005 3:32:47 PM          Seq. Line :  44
Sample Name     : MSRun 2 Post*100               Location : Vial 45
Acq. Operator   : TG                                 Inj :   1
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 3:30:38 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 7:04:37 PM by TG
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 7:04:40 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360 BB      370.82919 1.85946e-2    6.89541    Sulfate

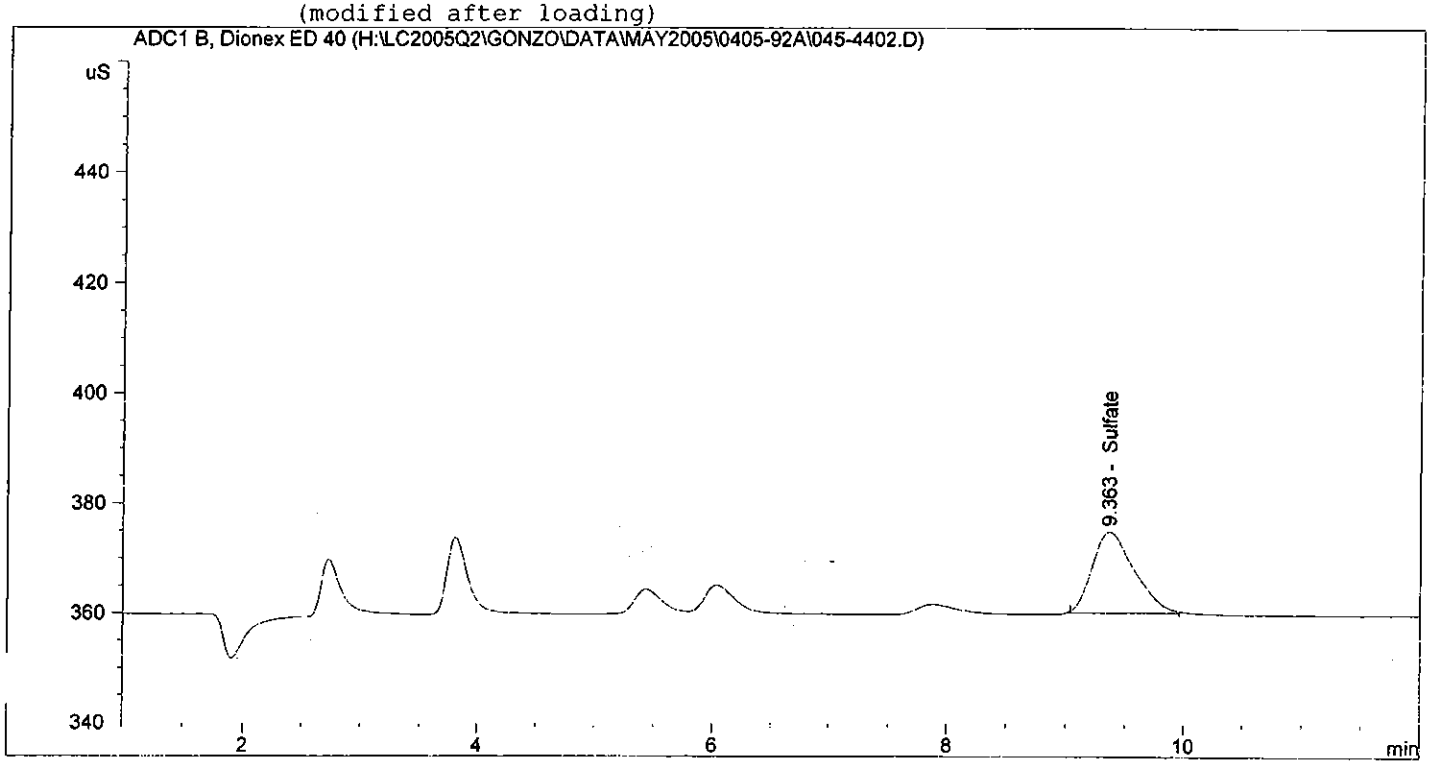
Totals :                                6.89541

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

0405-92 Matrix spike

```
==========================================================================
Injection Date  : 5/12/2005 3:47:09 PM          Seq. Line :  44
Sample Name     : MSRun 2 Post*100               Location : Vial 45
Acq. Operator   : TG                                Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 3:44:59 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 7:04:37 PM by TG
                  (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 7:04:40 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.363 BB      366.86438 1.85989e-2    6.82328     Sulfate

Totals :                                6.82328

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

Curve(s)/QA Point(s) Chromatograms

Calibration Table

Calib. Data Modified : 5/12/2005 12:32:42 PM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 5.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 5.000 %
Abs. Non-ref. Window : 0.000 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

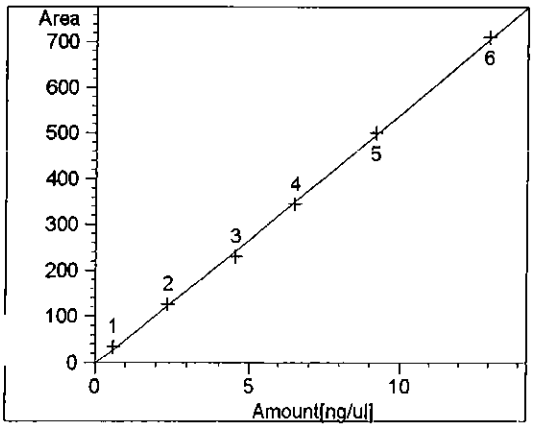
Signal 1: ADC1 B, Dionex ED 40

RetTime [min]	Sig	Lvl	Amount [ng/ul]	Area	Amt/Area	Ref	Grp	Name
9.360	1	1	6.17000e-1	33.42069	1.84616e-2			Sulfate
		2	2.38000	125.84741	1.89118e-2			
		3	4.55000	229.45097	1.98299e-2			
		4	6.52000	344.49469	1.89263e-2			
		5	9.18000	499.86865	1.83648e-2			
		6	13.00000	710.17908	1.83052e-2			

Peak Sum Table

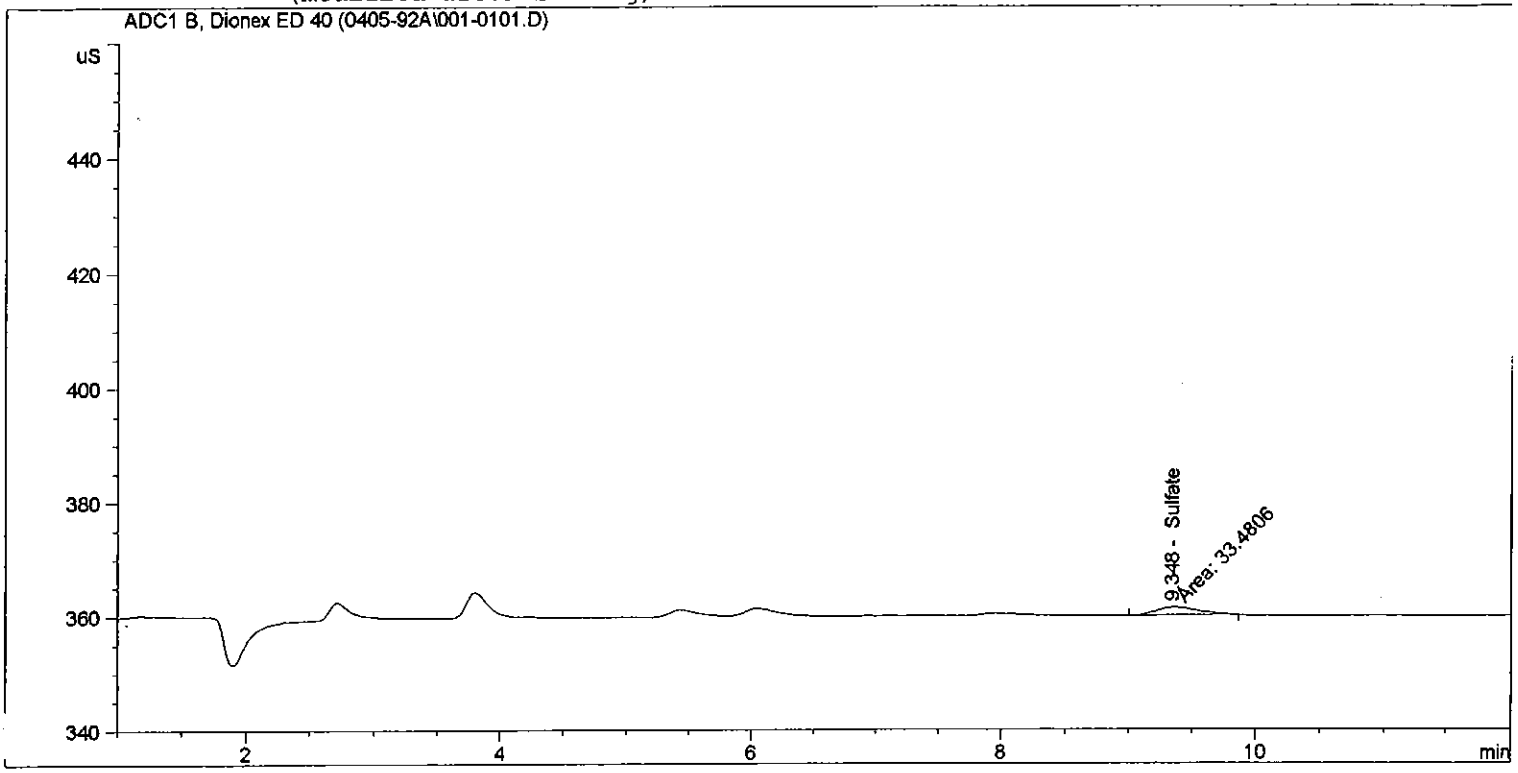
No Entries in table

Calibration Curves



Sulfate at exp. RT: 9.360
ADC1 B, Dionex ED 40
Correlation: 0.99955
Residual Std. Dev.: 8.42160
Formula: y = mx + b
m: 54.96338
b: -8.16605
x: Amount[ng/ul]
y: Area

```
Injection Date  : 5/11/2005 6:55:56 PM          Seq. Line :   1
Sample Name     : Standard 1                   Location : Vial 1
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                        External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|----------
  9.348 MM       33.48057 2.26315e-2 7.57716e-1     Sulfate

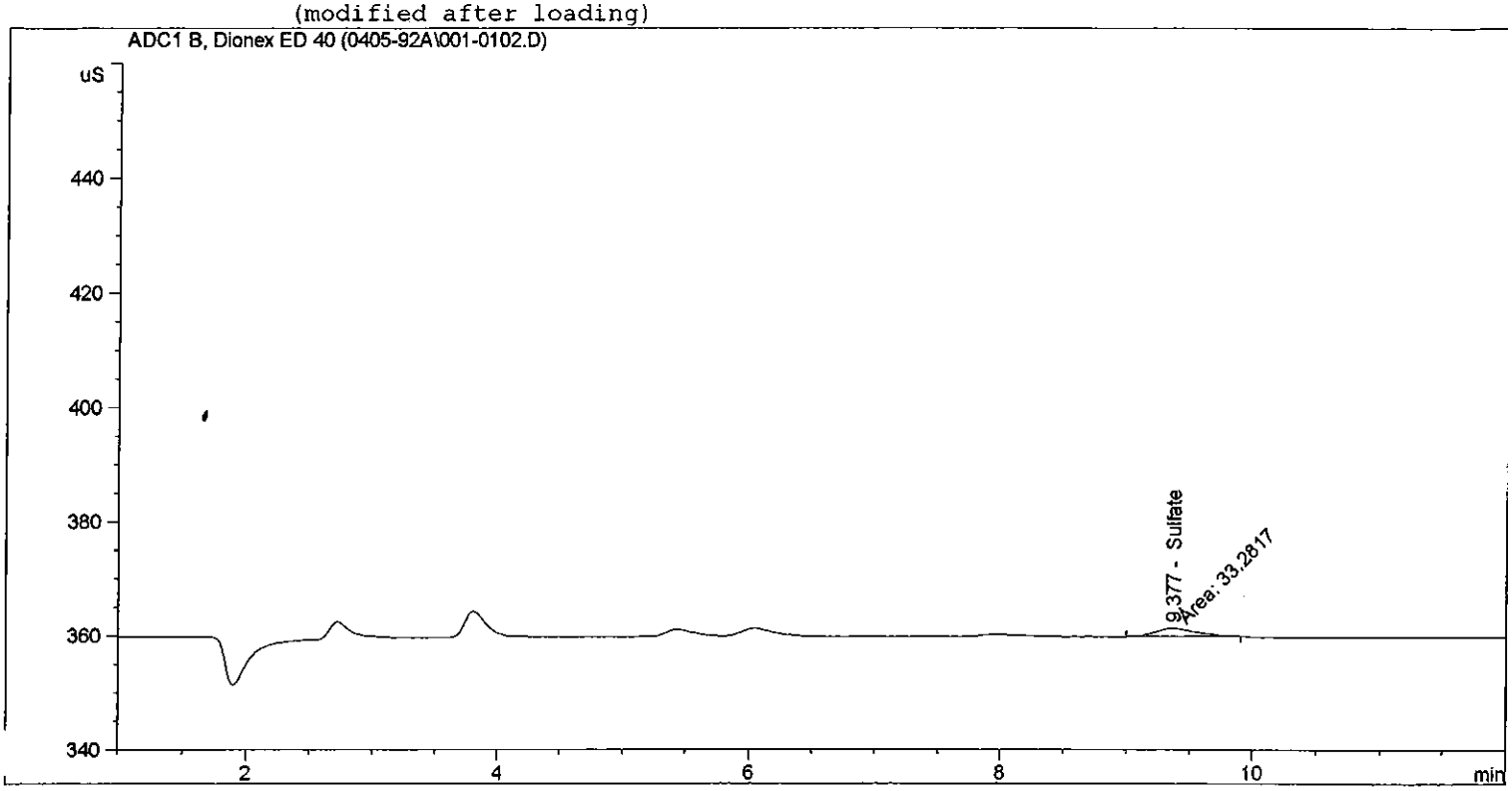
Totals :                              7.57716e-1

 Results obtained with enhanced integrator!

                          *** End of Report ***
```

Manual Integration (TG)

```
Injection Date  : 5/11/2005 7:09:57 PM          Seq. Line :   1
Sample Name     : Standard 1                    Location : Vial 1
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [uS*s]	Amt/Area	Amount [ng/ul]	Grp	Name
9.377	MM	33.28167	2.26580e-2	7.54097e-1		Sulfate

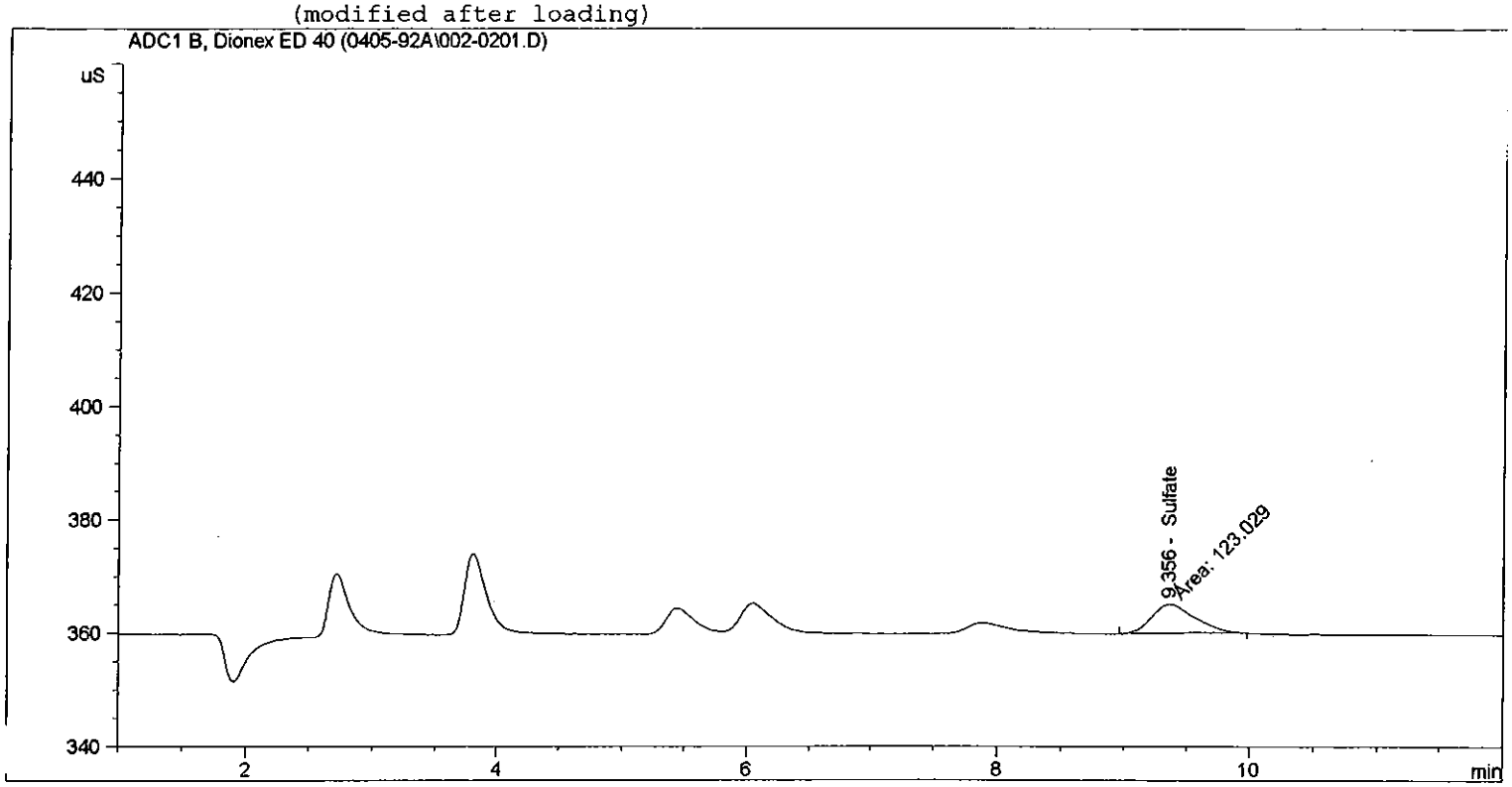
Manual Integration (TG)

```
Totals :                              7.54097e-1

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/11/2005 7:24:20 PM          Seq. Line :   2
Sample Name     : Standard 2                    Location : Vial 2
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [uS*s]	Amt/Area	Amount [ng/ul]	Grp	Name
9.356	MM	123.02875	1.94016e-2	2.38695		Sulfate

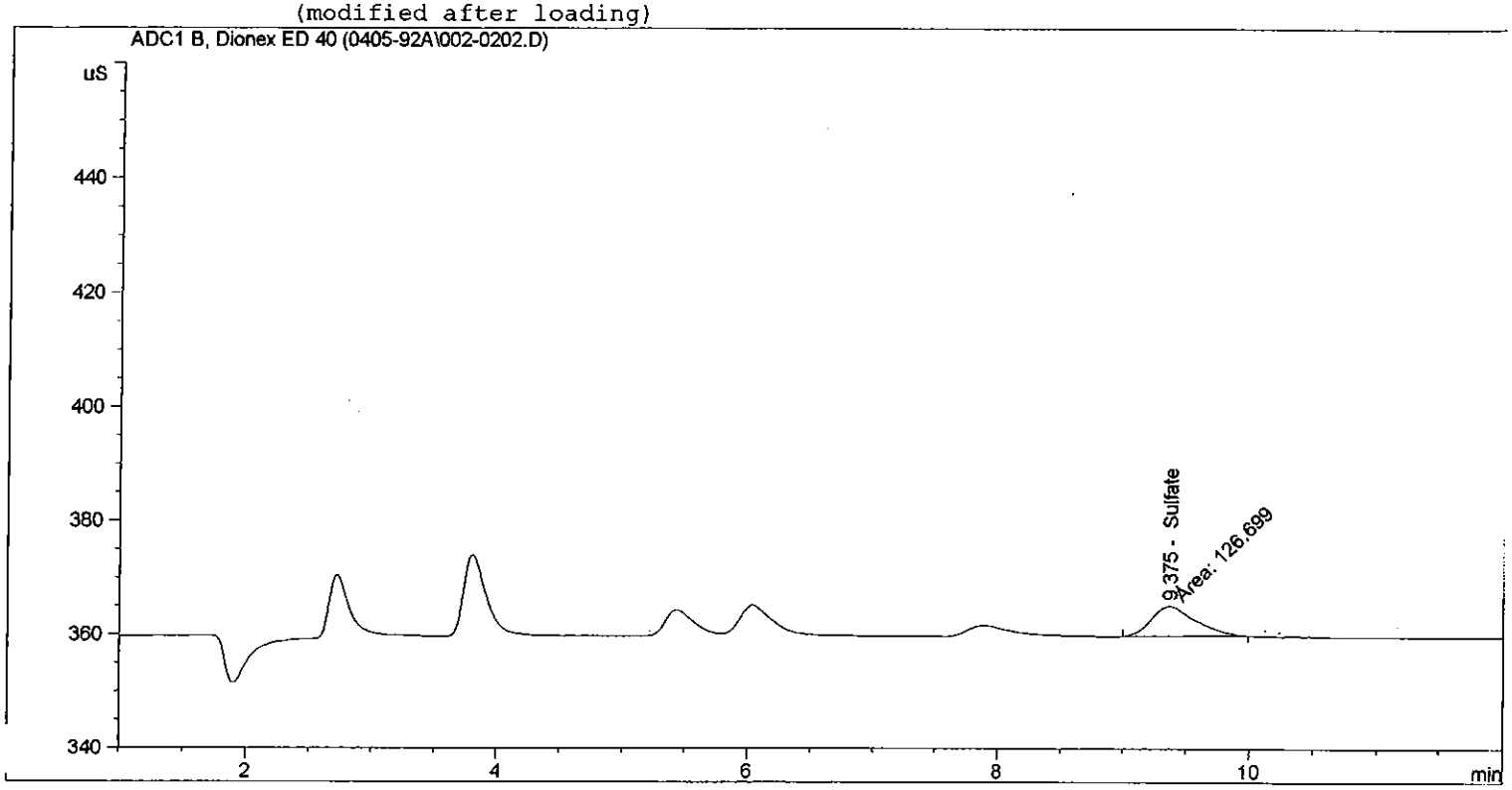
Manual Integration (TG)

```
Totals :                                  2.38695

 Results obtained with enhanced integrator!
```

*** End of Report ***

Injection Date : 5/11/2005 7:39:06 PM Seq. Line : 2
Sample Name : Standard 2 Location : Vial 2
Acq. Operator : TG Inj : 2
Acq. Instrument : Gonzo Inj Volume : 25 µl
Acq. Method : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed : 5/12/2005 12:35:10 PM
(modified after loading)



External Standard Report

Sorted By : Signal
Calib. Data Modified : 5/12/2005 12:35:08 PM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime [min]	Type	Area [uS*s]	Amt/Area	Amount [ng/ul]	Grp	Name
9.375	MM	126.69941	1.93666e-2	2.45373		Sulfate

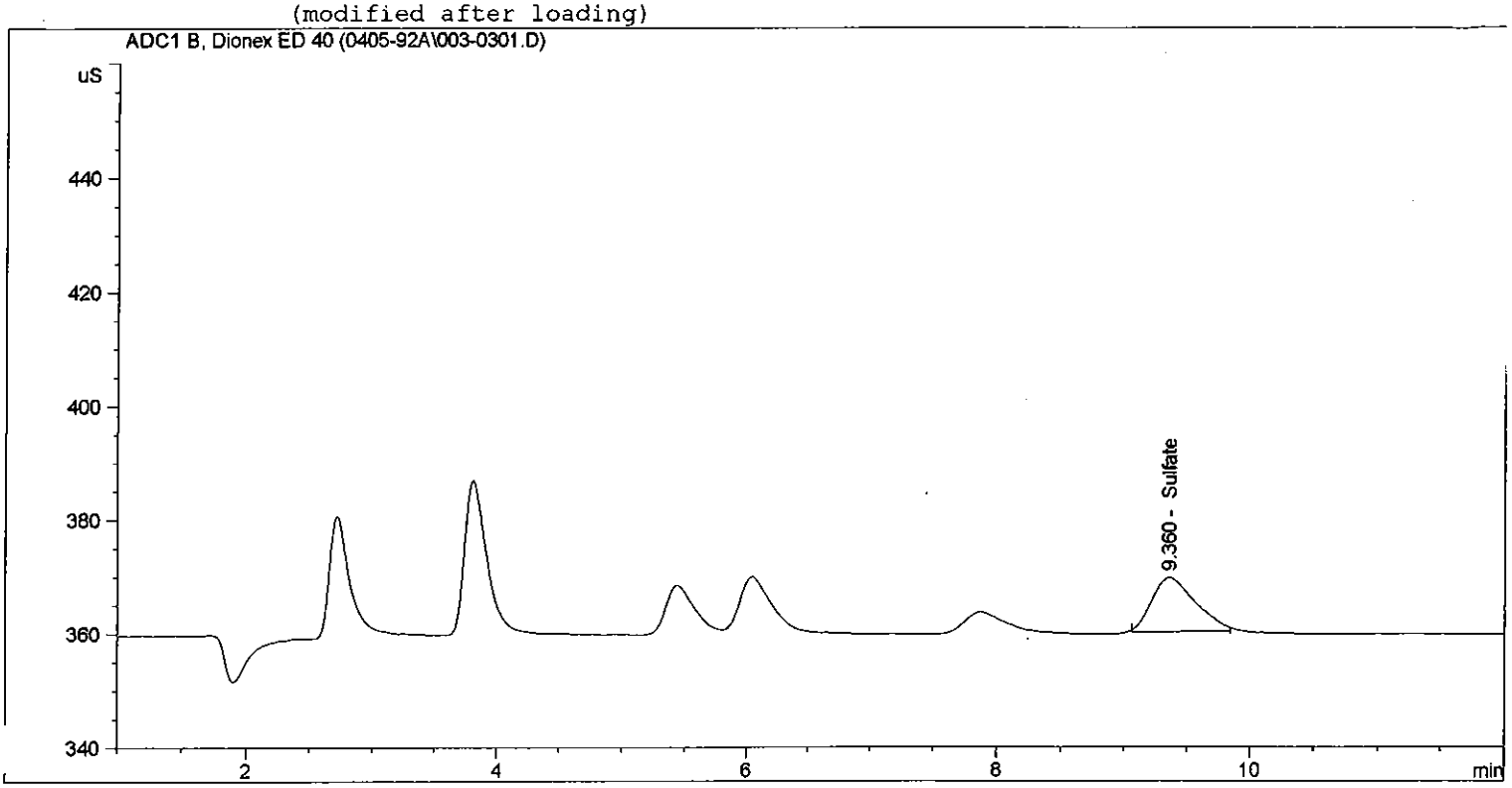
Manual Integration (TG)

Totals : 2.45373

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 5/11/2005 7:53:27 PM          Seq. Line :   3
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                                Inj :   1
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

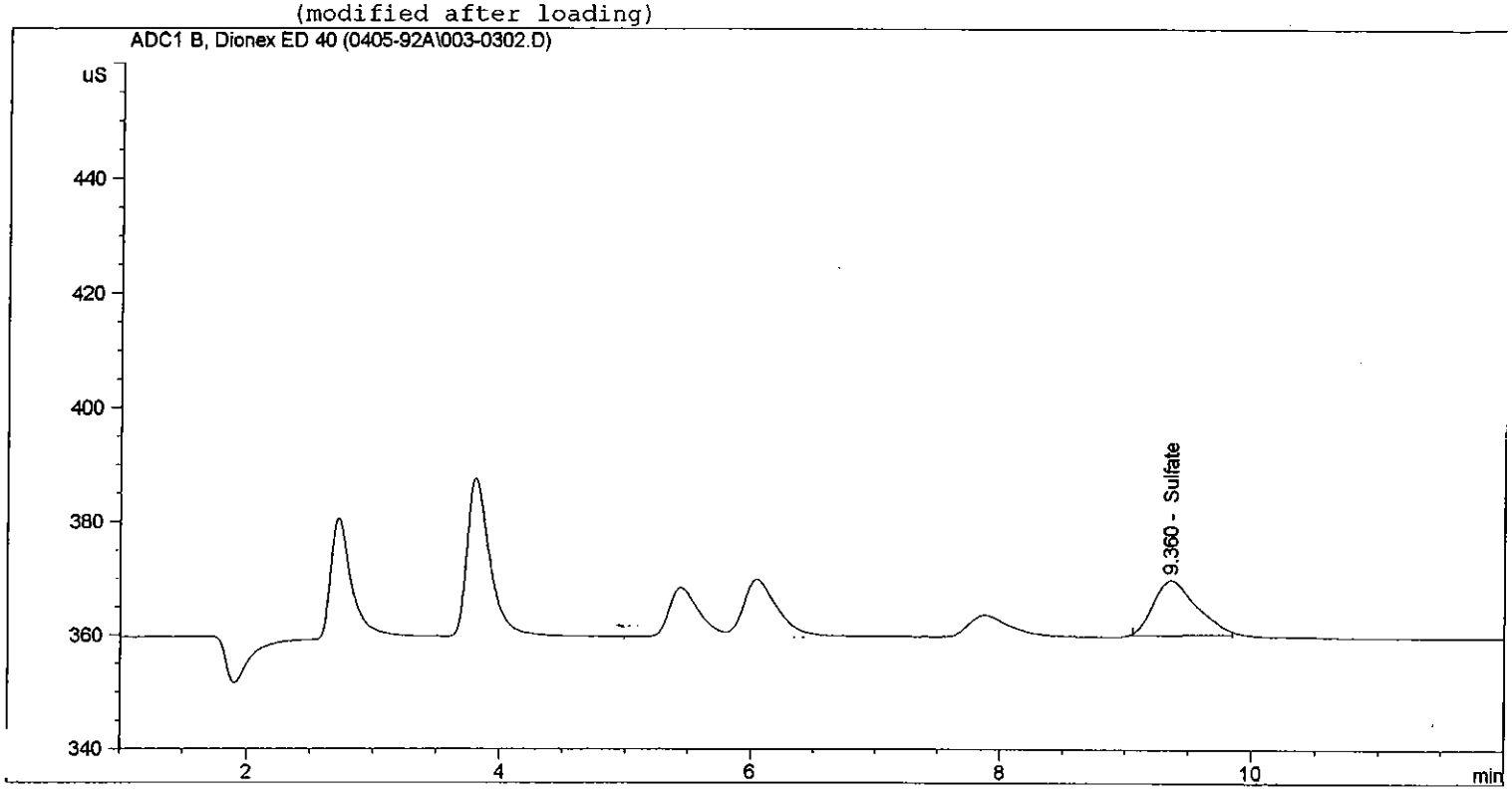
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360 BB      227.82349 1.88461e-2    4.29358    Sulfate

Totals :                                4.29358

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/11/2005 8:07:50 PM          Seq. Line :   3
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

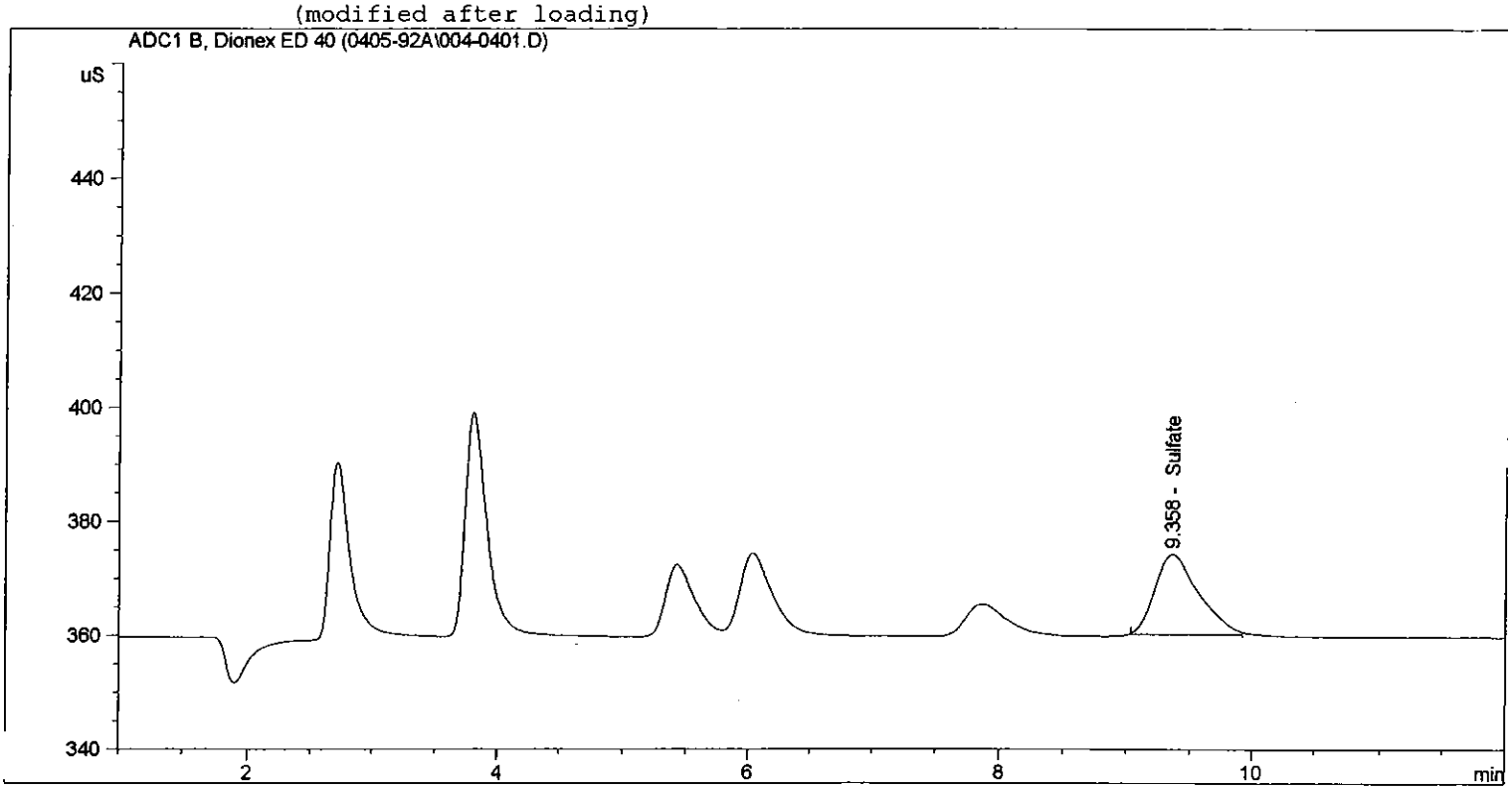
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360 BB      231.07845 1.88369e-2    4.35280     Sulfate

Totals :                                4.35280

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/11/2005 8:22:09 PM          Seq. Line :   4
Sample Name     : Standard 4                    Location : Vial 4
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

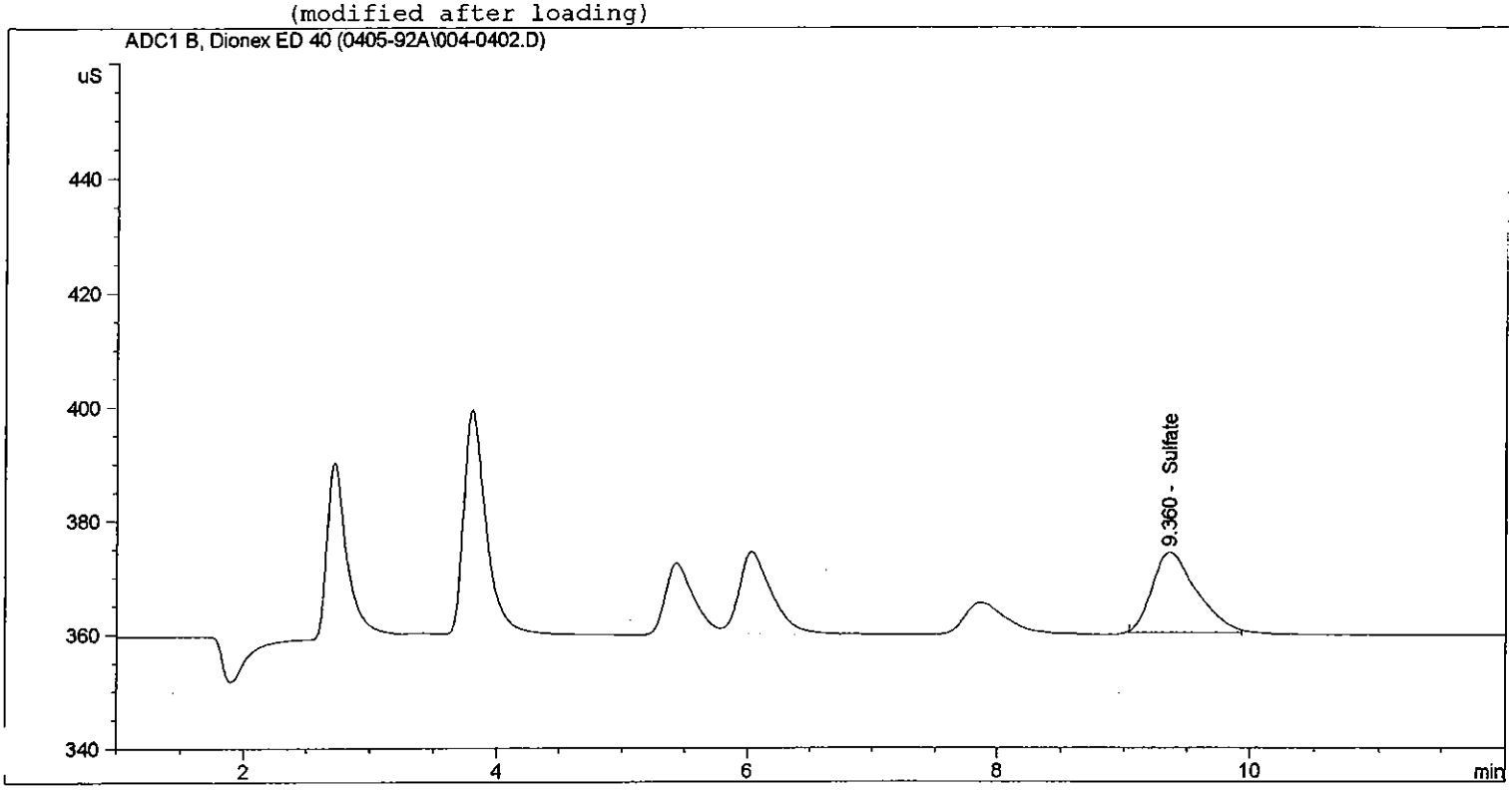
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.358 BB      343.51971 1.86264e-2    6.39855    Sulfate

Totals :                                6.39855

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/11/2005 8:36:33 PM          Seq. Line :   4
Sample Name     : Standard 4                    Location : Vial 4
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

Sorted By : Signal
Calib. Data Modified : 5/12/2005 12:35:08 PM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: ADC1 B, Dionex ED 40

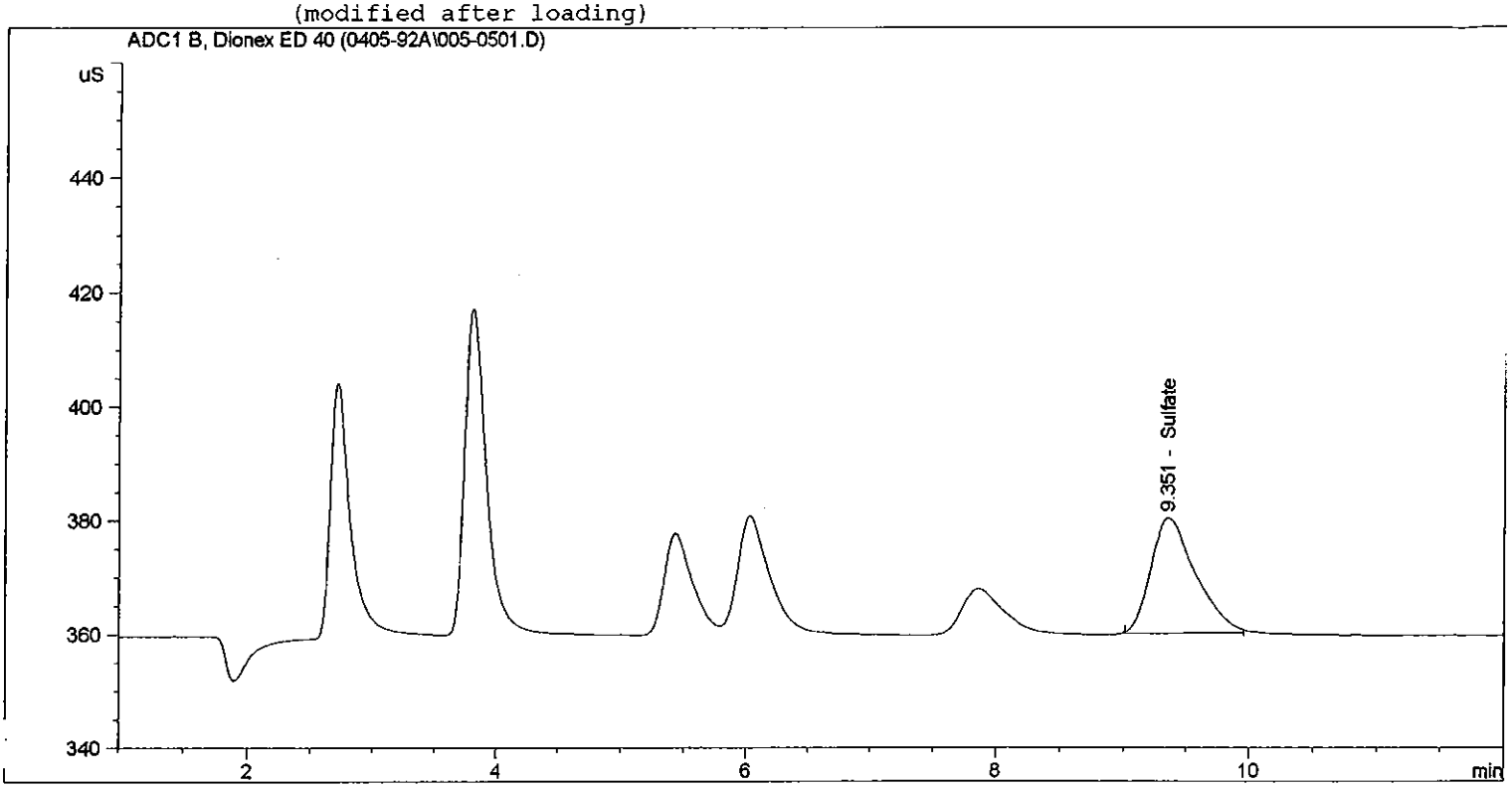
RetTime [min]	Type	Area [uS*s]	Amt/Area	Amount [ng/ul]	Grp	Name
9.360	BB	345.46967	1.86240e-2	6.43402		Sulfate

Totals : 6.43402

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 5/11/2005 8:50:56 PM          Seq. Line :   5
Sample Name     : Standard 5                     Location : Vial 5
Acq. Operator   : TG                                Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                      External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

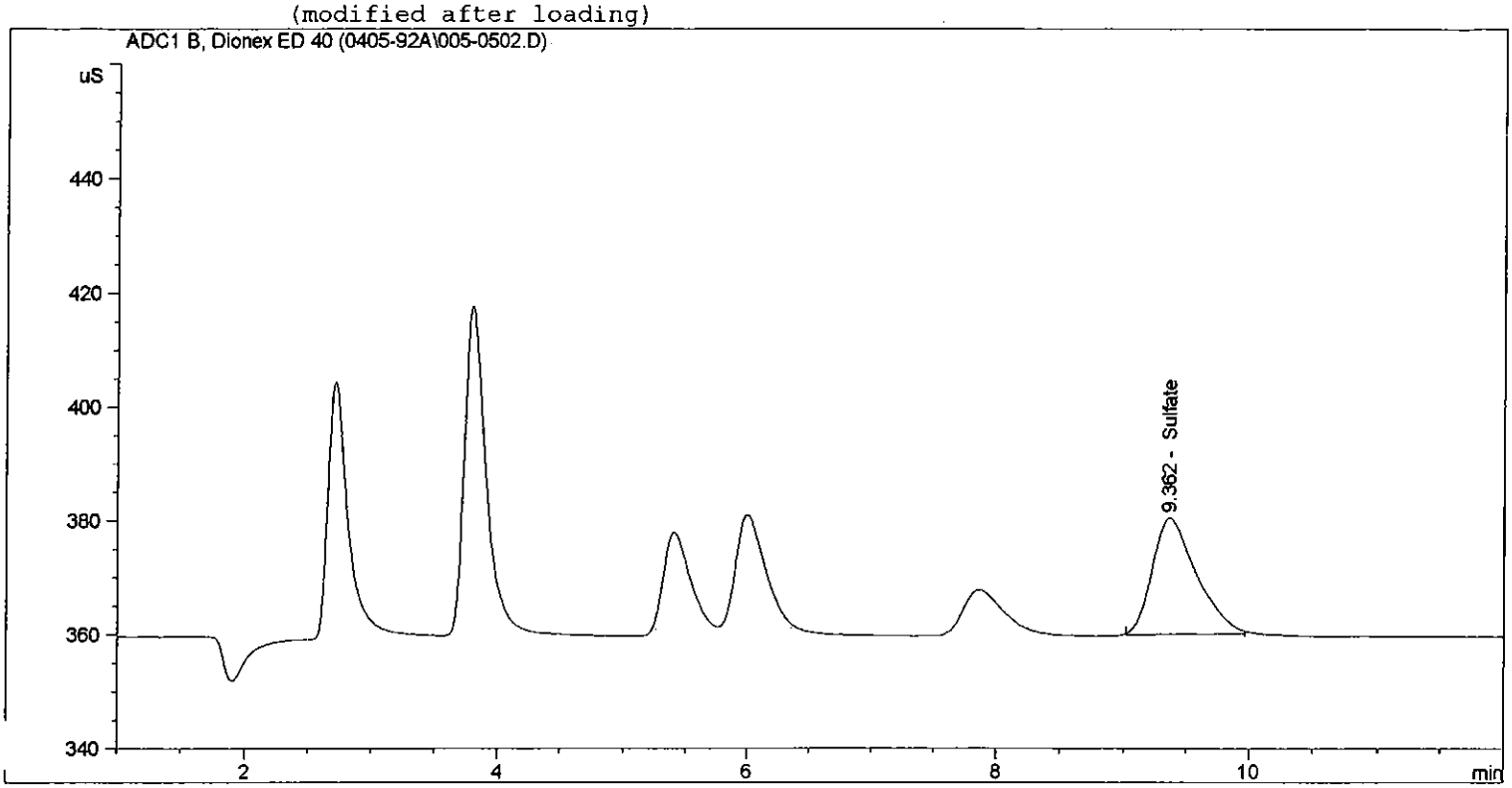
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.351 BB      500.49374 1.84908e-2    9.25452     Sulfate

Totals :                                9.25452

 Results obtained with enhanced integrator!
                          *** End of Report ***
```

```
==========================================================================
Injection Date  : 5/11/2005 9:05:13 PM          Seq. Line :   5
Sample Name     : Standard 5                     Location : Vial 5
Acq. Operator   : TG                                Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
 ast changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

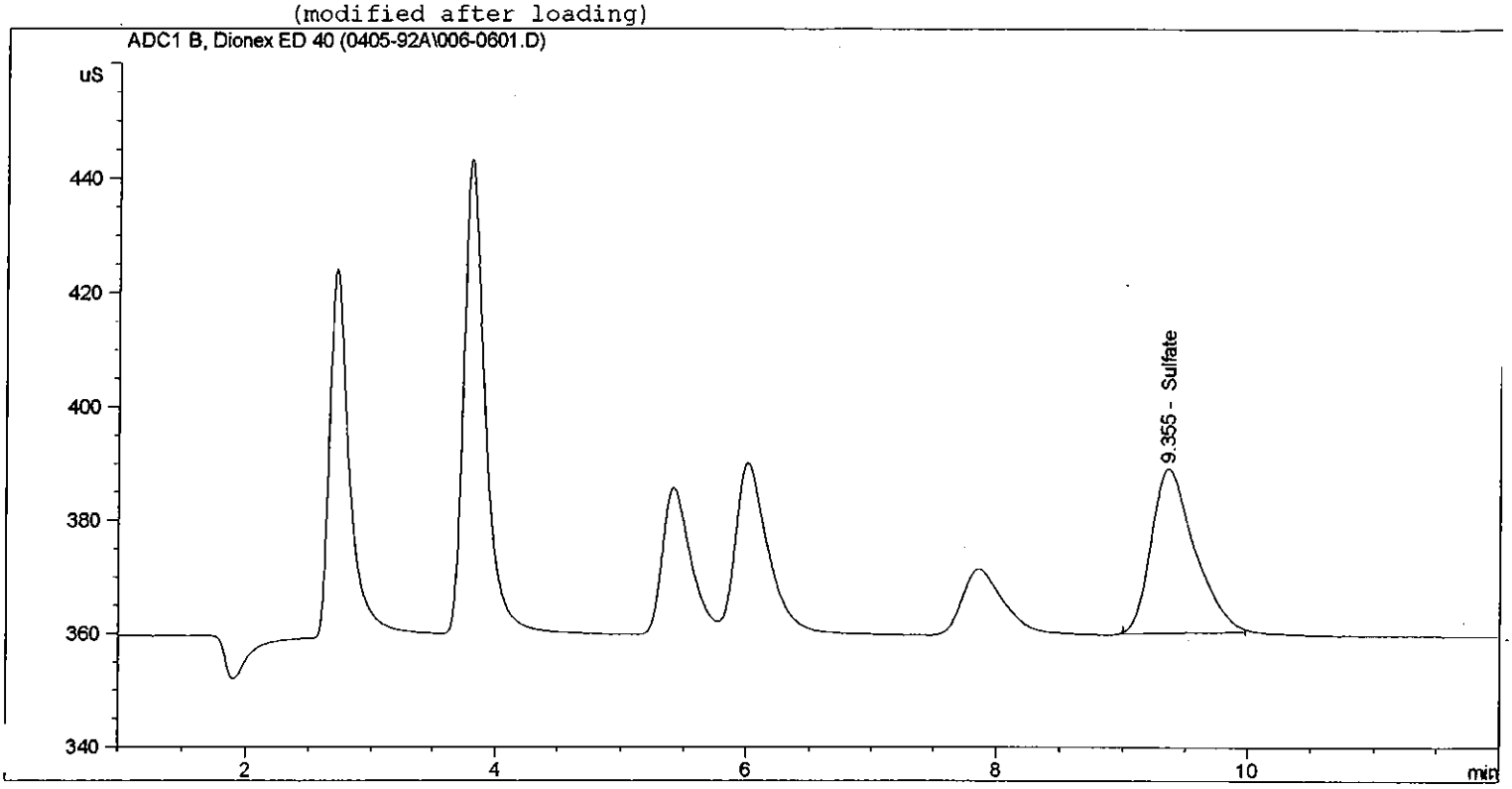
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.362 BB      499.24356 1.84915e-2    9.23178     Sulfate

Totals :                                9.23178

 Results obtained with enhanced integrator!
==========================================================================
                        *** End of Report ***
```

```
Injection Date  : 5/11/2005 9:19:34 PM          Seq. Line :   6
Sample Name     : Standard 6                    Location : Vial 6
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

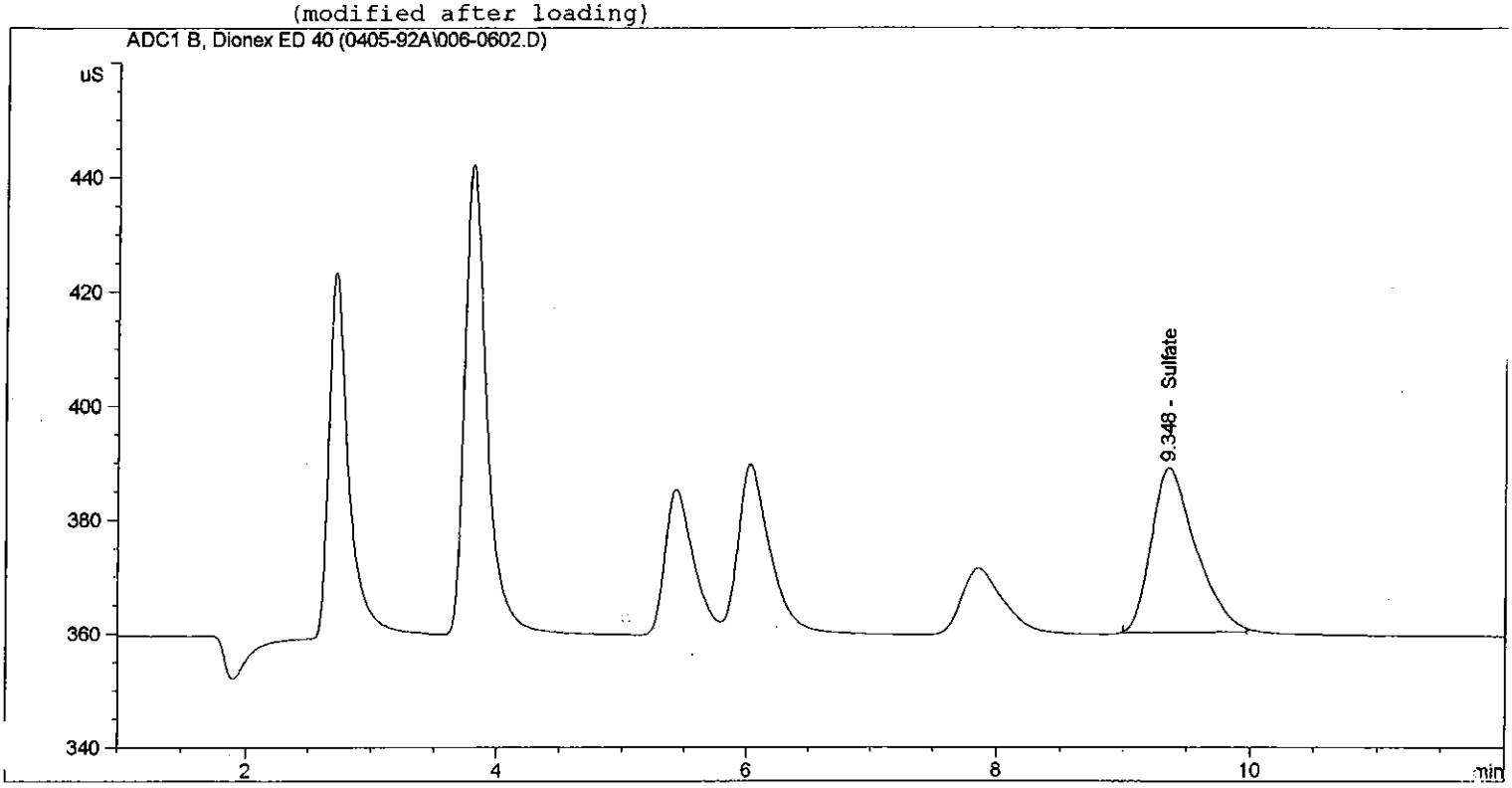
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.355 BB      711.78613 1.84027e-2   13.09876     Sulfate

Totals :                                13.09876

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/11/2005 9:33:52 PM          Seq. Line :   6
Sample Name     : Standard 6                    Location : Vial 6
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

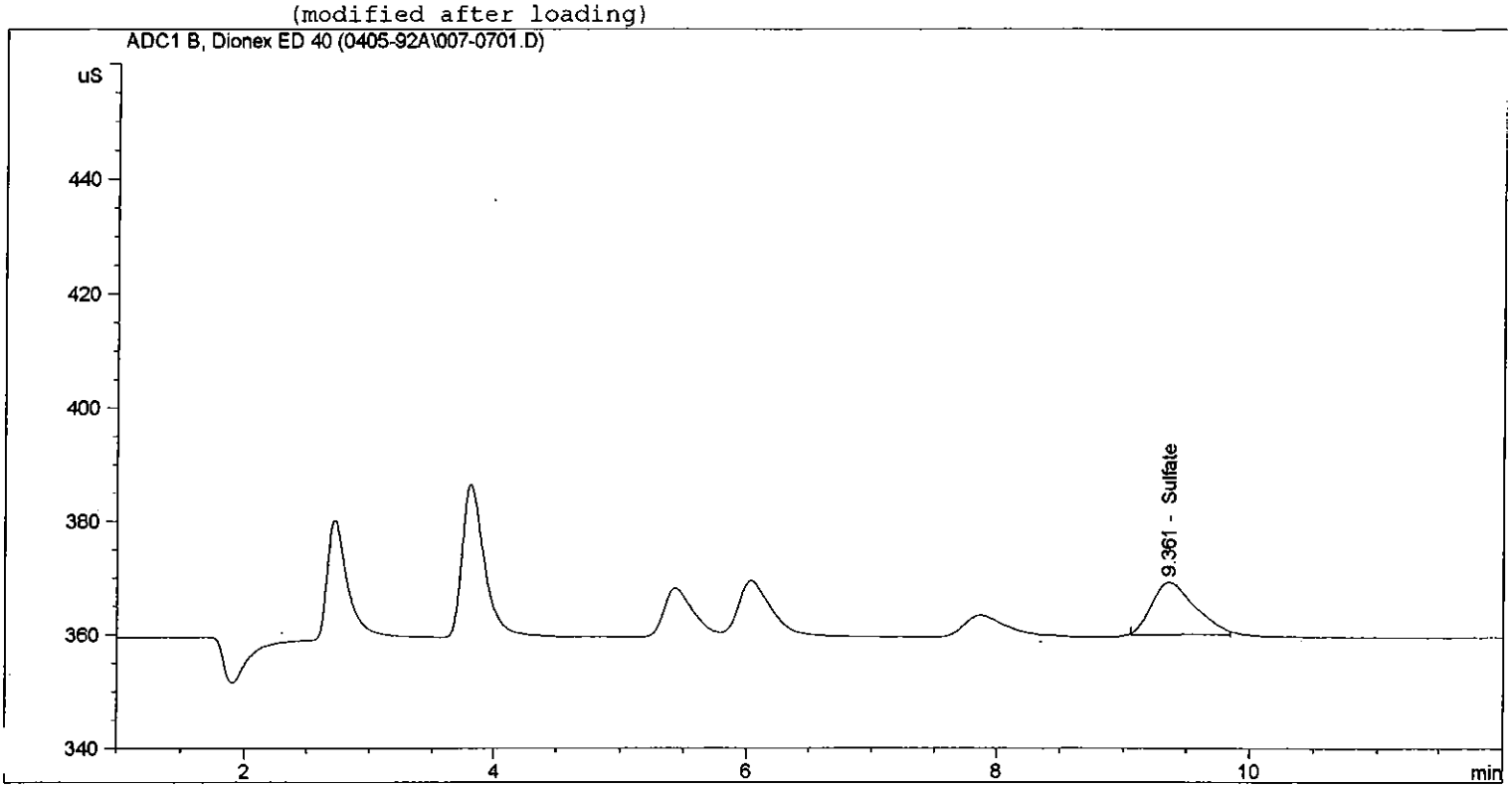
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.348 BB      708.57202 1.84036e-2   13.04028     Sulfate

Totals :                                13.04028

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/11/2005 9:48:17 PM          Seq. Line :   7
Sample Name     : Standard SS                  Location : Vial 7
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

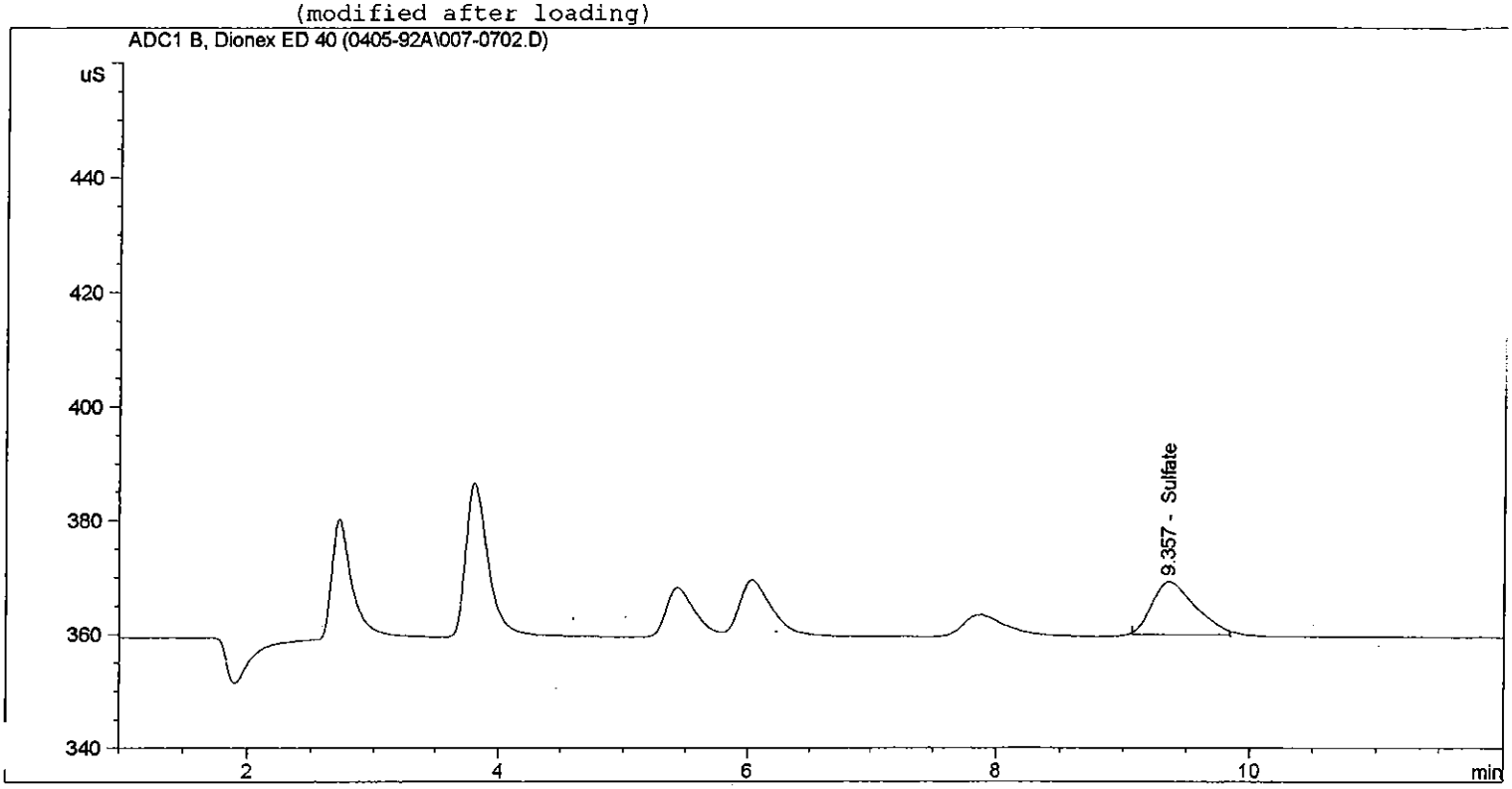
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.361 BB      223.26709 1.88594e-2    4.21068     Sulfate  4.55 ug/ml

Totals :                                4.21068

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/11/2005 10:02:36 PM          Seq. Line :   7
Sample Name     : Standard SS                    Location : Vial 7
Acq. Operator   : TG                                 Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/7/2005 3:14:56 PM by TG
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                        External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

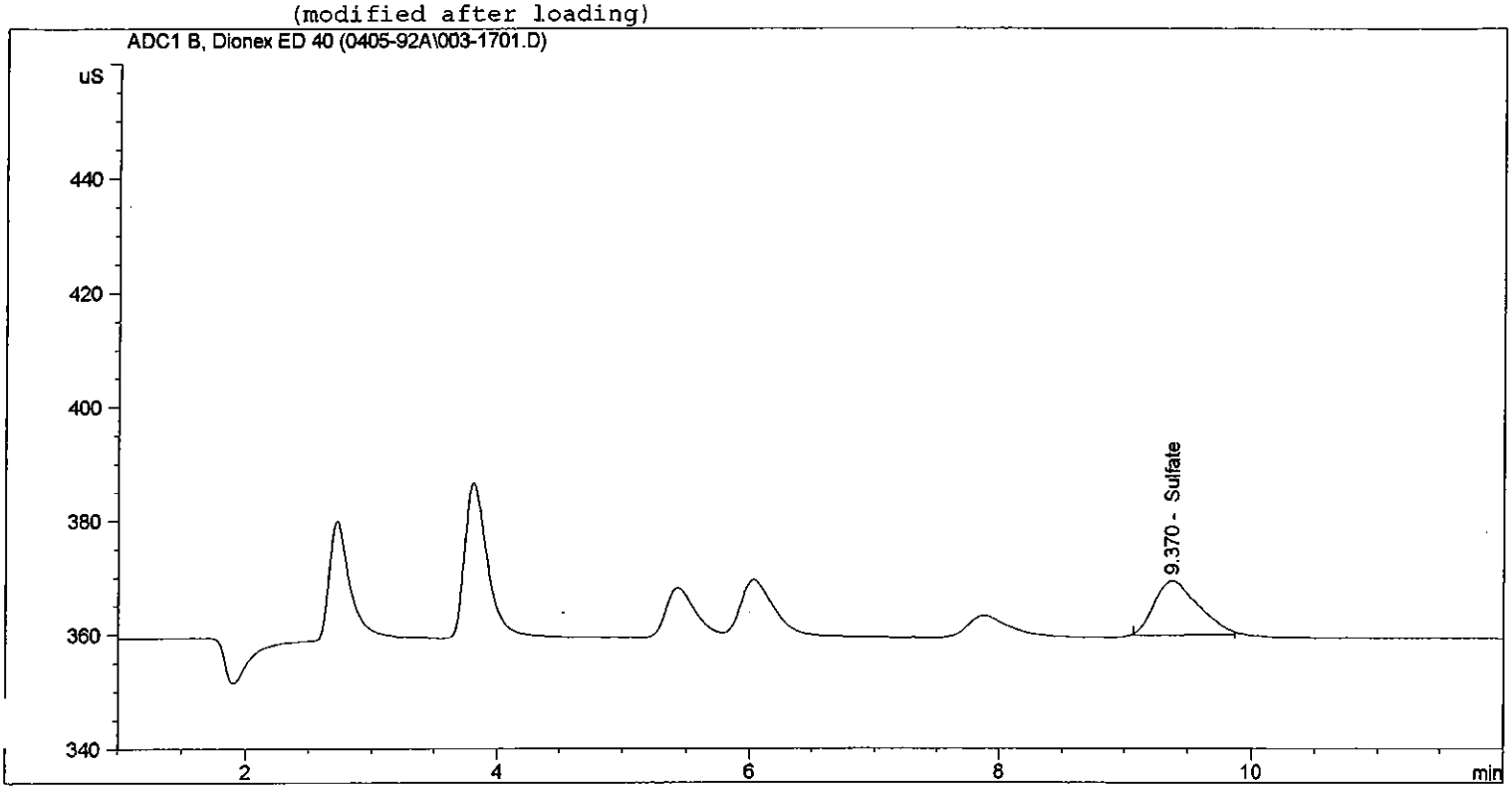
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.357 BB       221.80493 1.88638e-2    4.18408     Sulfate 4.55 ug/ml

Totals :                                 4.18408

 Results obtained with enhanced integrator!

                          *** End of Report ***
```

```
Injection Date  : 5/12/2005 2:35:52 AM          Seq. Line :  17
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 2:33:34 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

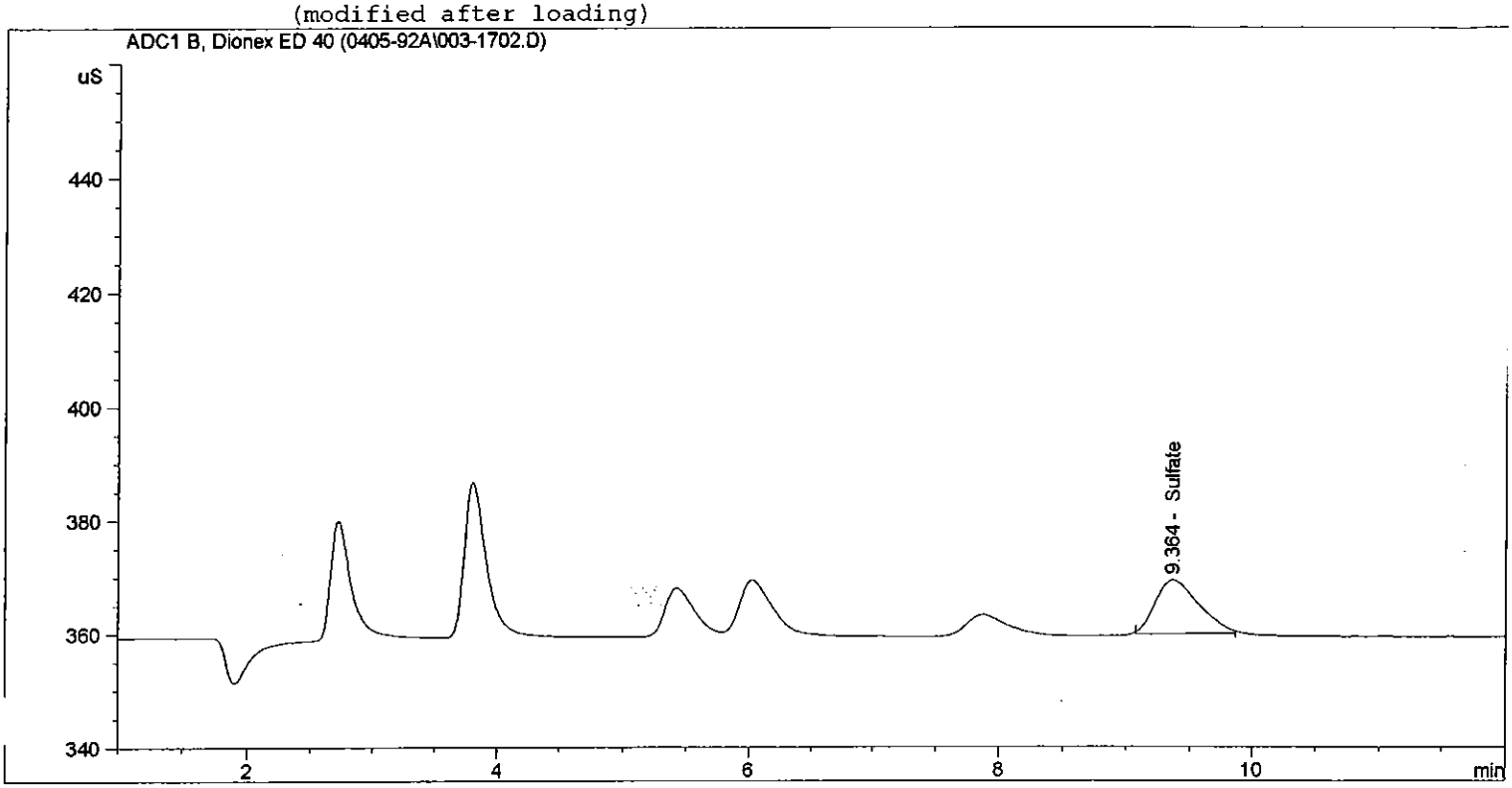
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.370 BB      230.96286 1.88372e-2    4.35069     Sulfate

Totals :                                4.35069

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/12/2005 2:50:15 AM          Seq. Line :  17
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 2:48:01 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                        External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

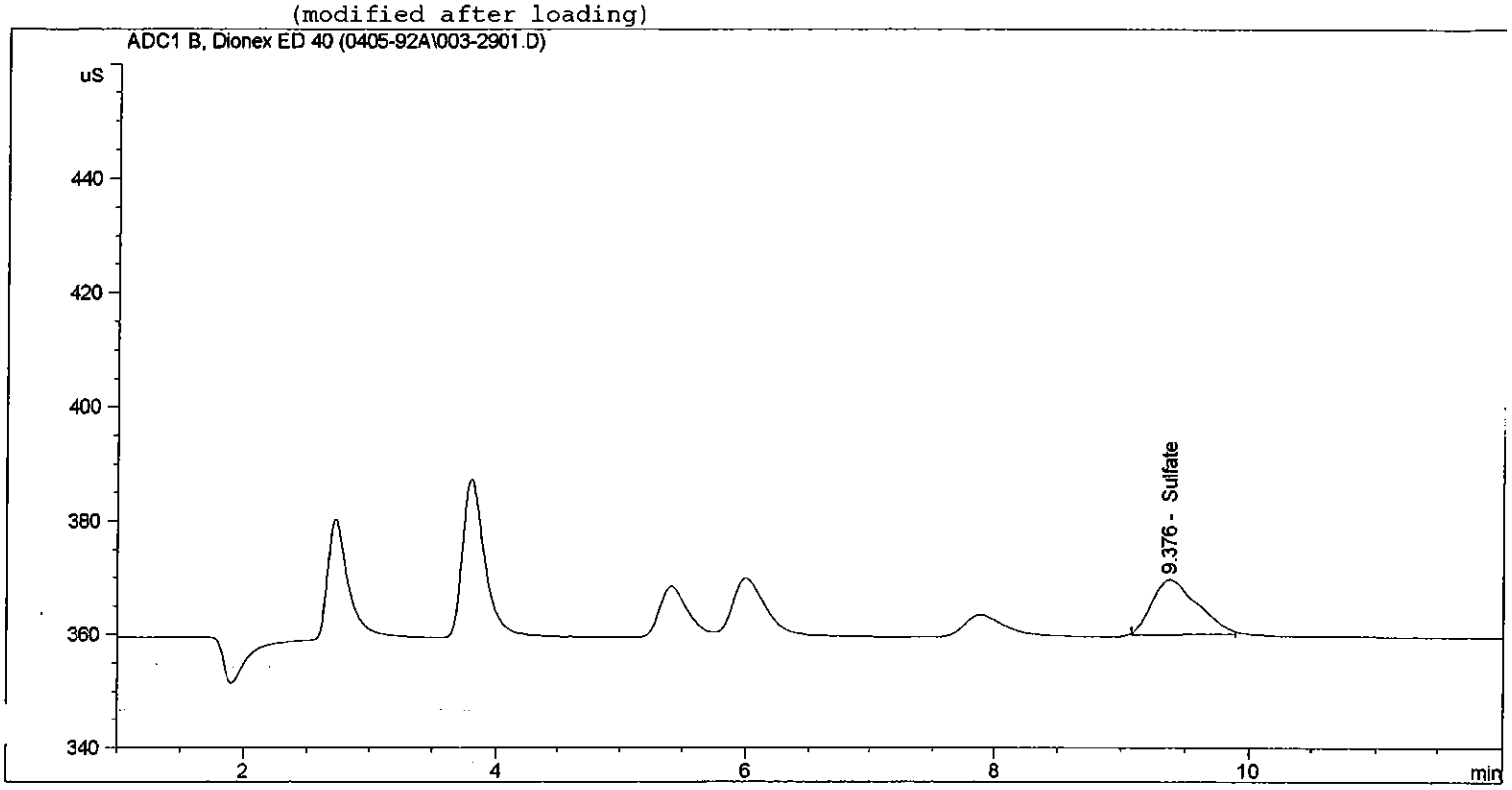
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.364 BB      230.24608 1.88392e-2    4.33765     Sulfate

Totals :                                4.33765

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/12/2005 8:21:21 AM          Seq. Line :  29
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 8:20:58 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

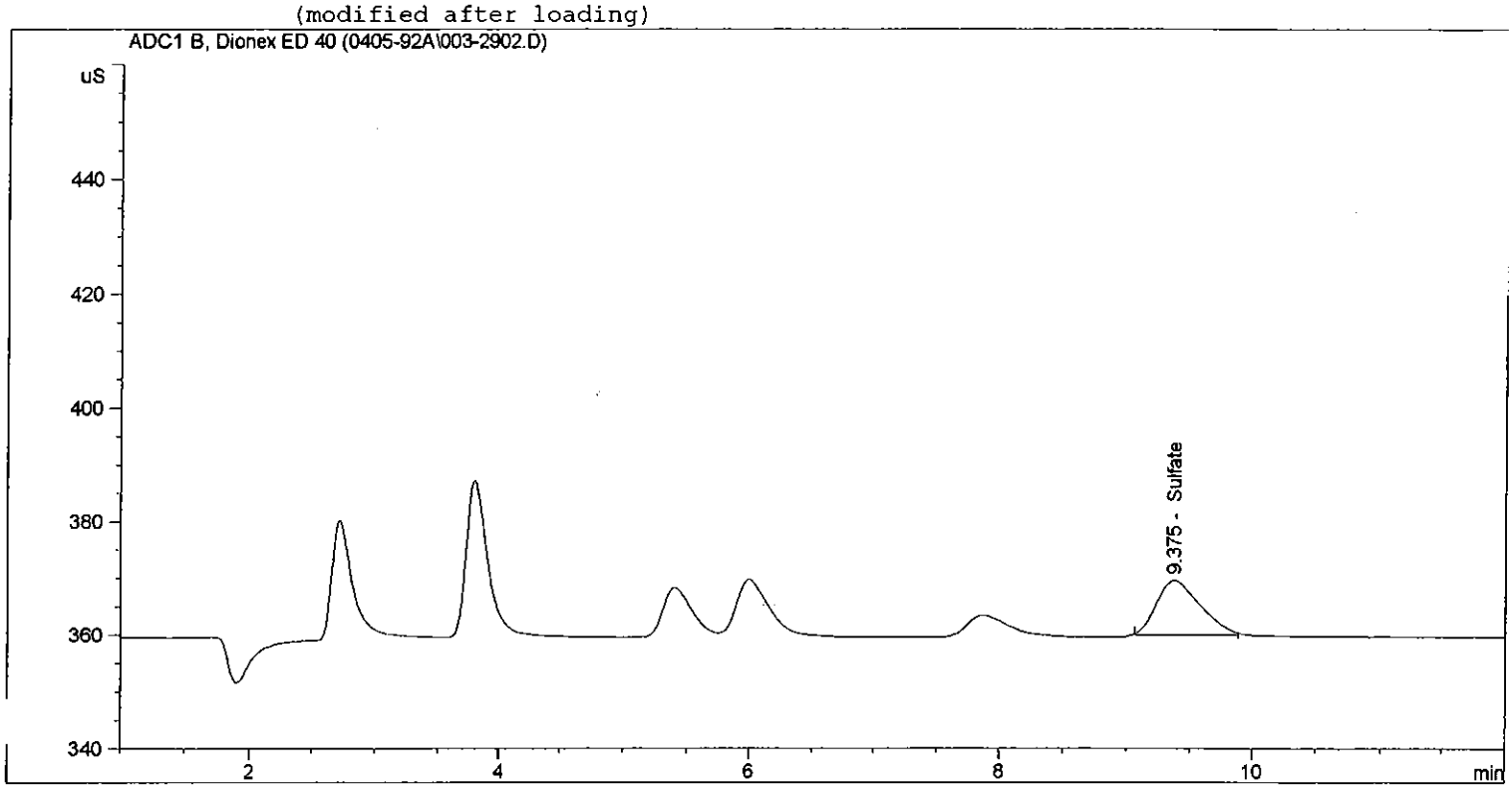
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.376 BB      241.47716 1.88092e-2    4.54199     Sulfate

Totals :                                4.54199

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/12/2005 8:35:40 AM          Seq. Line :  29
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 8:33:33 AM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

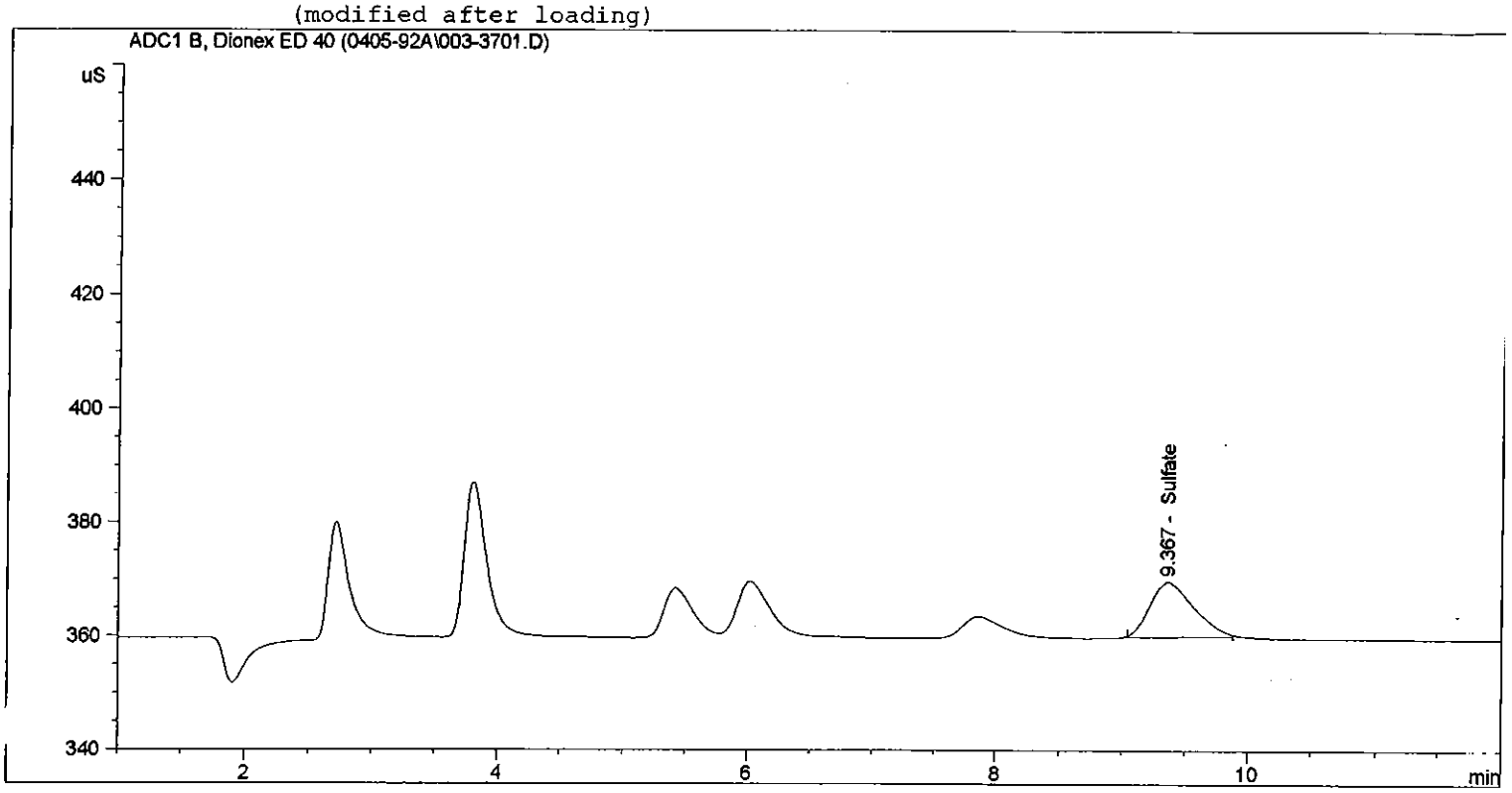
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.375 BB      232.51897 1.88329e-2    4.37901     Sulfate

Totals :                                4.37901

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/12/2005 12:11:18 PM          Seq. Line :  37
Sample Name     : Standard 3                     Location : Vial 3
Acq. Operator   : TG                                 Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:11:20 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

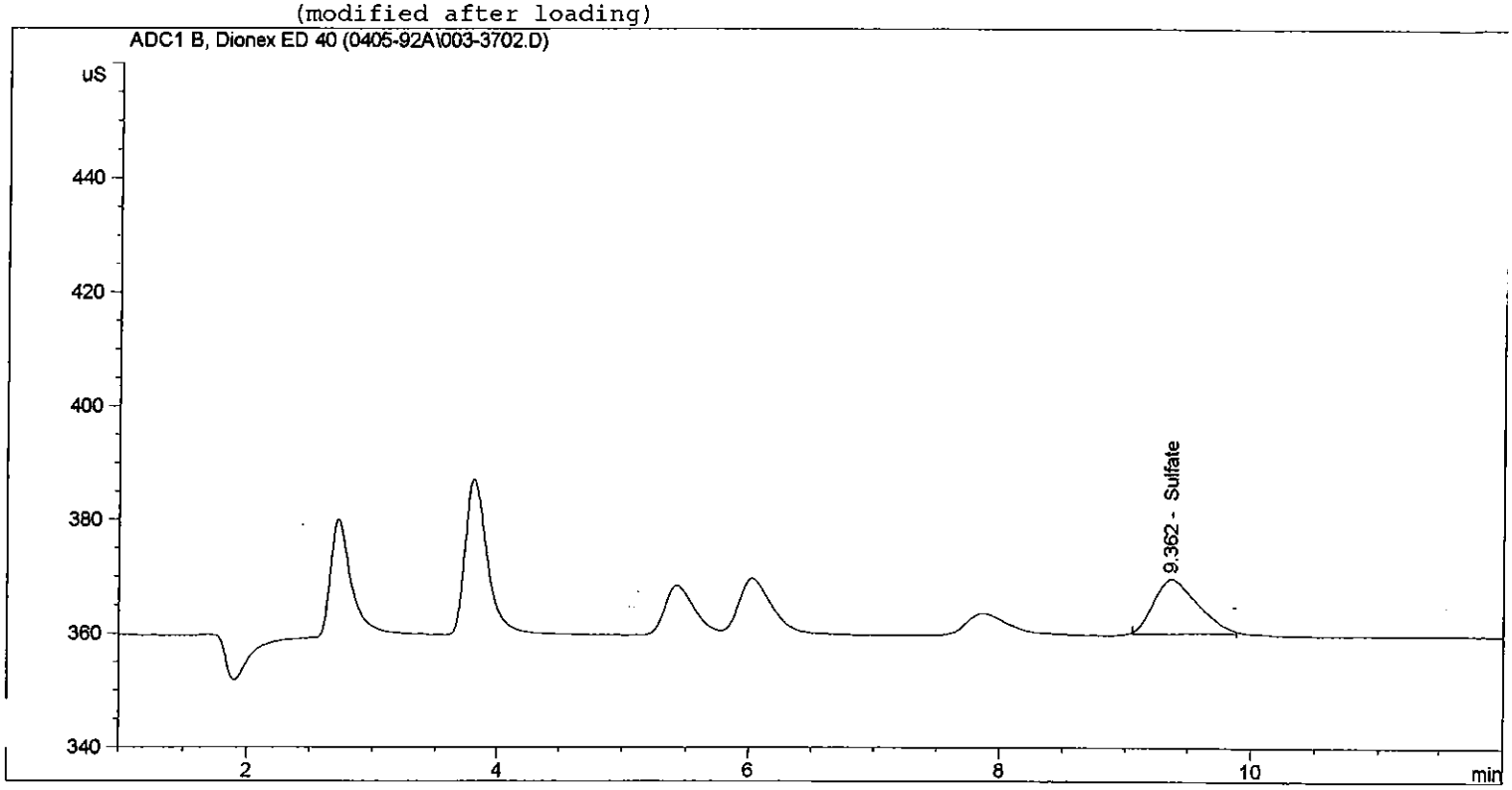
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.367 BB      234.99467 1.88262e-2    4.42405     Sulfate

Totals :                                4.42405

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/12/2005 12:26:08 PM          Seq. Line :  37
Sample Name     : Standard 3                     Location : Vial 3
Acq. Operator   : TG                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 12:23:52 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 12:35:10 PM
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 12:35:08 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

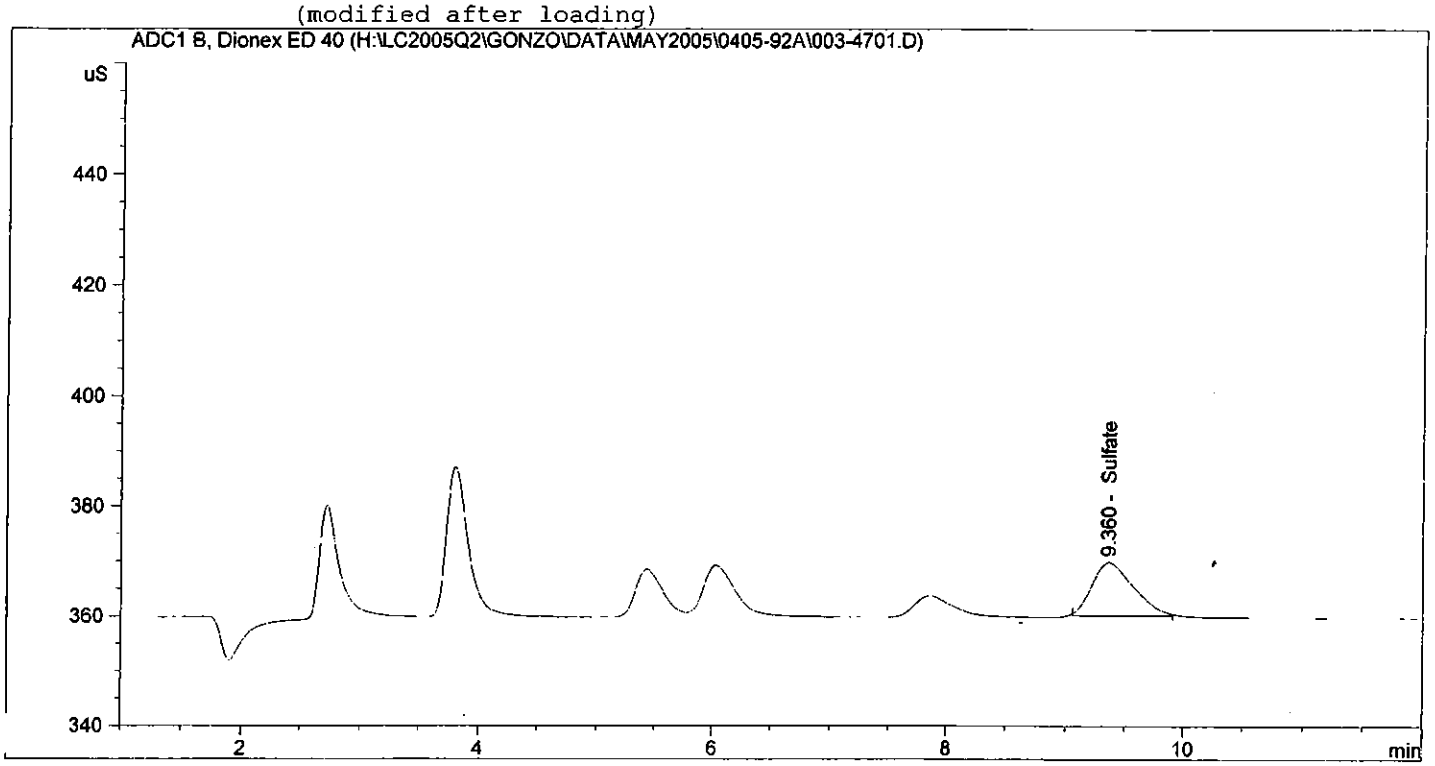
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.362 BB      234.22632 1.88282e-2    4.41007     Sulfate

Totals :                                4.41007

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 5/12/2005 4:58:54 PM          Seq. Line :  47
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 4:58:32 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 7:04:37 PM by TG
                  (modified after loading)
```




```
                    External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 7:04:40 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: ADC1 B, Dionex ED 40

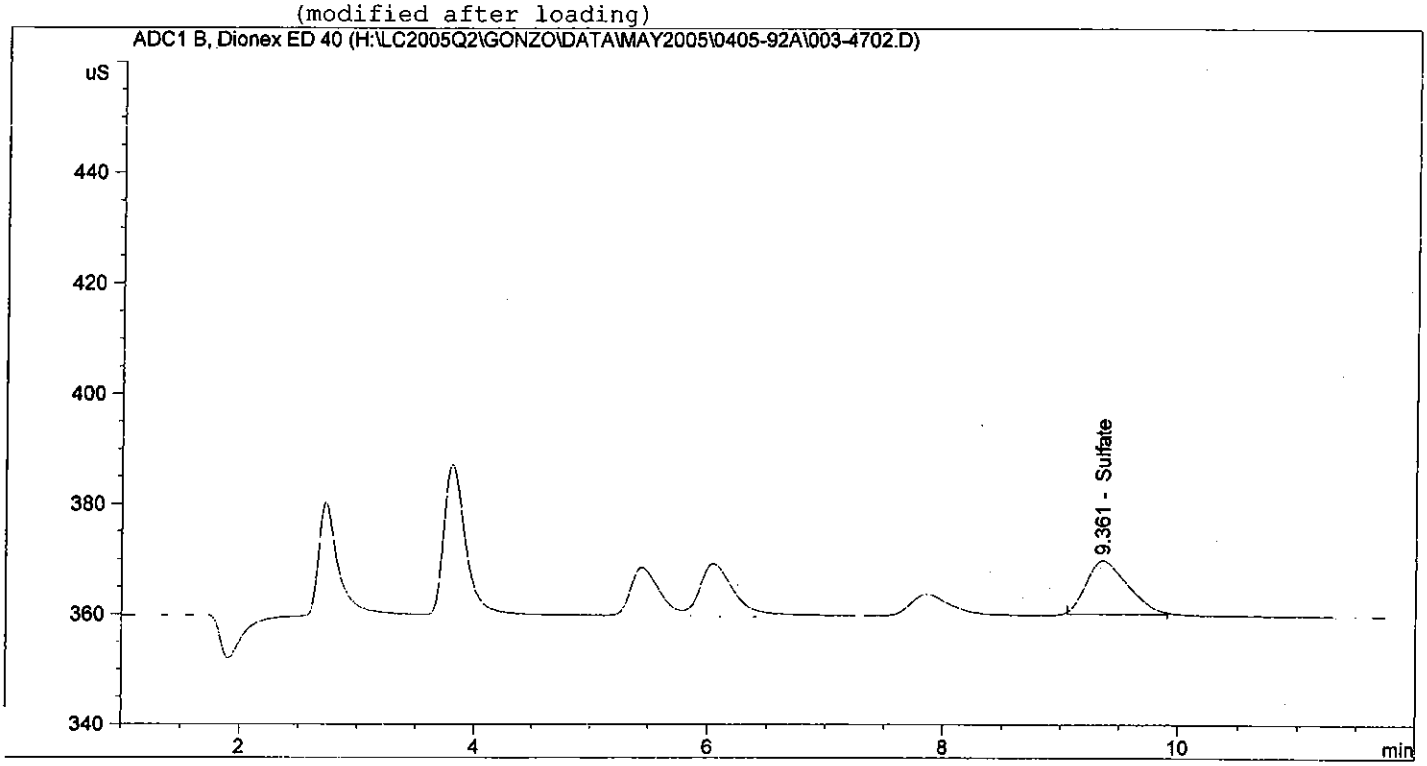
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                 [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.360 BB      237.80737 1.88187e-2    4.47522     Sulfate

Totals :                                4.47522

 Results obtained with enhanced integrator!

                        *** End of Report ***
```

```
Injection Date  : 5/12/2005 5:13:22 PM          Seq. Line :  47
Sample Name     : Standard 3                    Location : Vial 3
Acq. Operator   : TG                               Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2005Q2\GONZO\METHODS\0305-96.M
Last changed    : 5/12/2005 5:11:07 PM by TG
                  (modified after loading)
Analysis Method : H:\LC2005Q2\GONZO\METHODS\0405-92R.M
Last changed    : 5/12/2005 7:04:37 PM by TG
                  (modified after loading)
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      5/12/2005 7:04:40 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [uS*s]                [ng/ul]
-------|------|----------|----------|----------|--|------------------
  9.361 BB      238.40685 1.88171e-2    4.48613    Sulfate

Totals :                                4.48613

 Results obtained with enhanced integrator!
```

*** End of Report ***

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 1	Standard 1	0305-96	2	Sample		
2	Vial 2	Standard 2	0305-96	2	Sample		
3	Vial 3	Standard 3	0305-96	2	Sample		
4	Vial 4	Standard 4	0305-96	2	Sample		
5	Vial 5	Standard 5	0305-96	2	Sample		
6	Vial 6	Standard 6	0305-96	2	Sample		
7	Vial 7	Standard SS	0305-96	2	Sample		
8	Vial 8	Lab blank	0305-96	2	Sample		
9	Vial 11	Run 1 Post*10	0305-96	2	Sample		
10	Vial 12	Run 2 Post*10	0305-96	2	Sample		
11	Vial 13	Run 3 Post*10	0305-96	2	Sample		
12	Vial 14	Blank Post	0305-96	2	Sample		
13	Vial 15	IH Blank Post	0305-96	2	Sample		
14	Vial 16	Run 1 Pre	0305-96	2	Sample		
15	Vial 17	Run 2 Pre	0305-96	2	Sample		
16	Vial 18	Run 3 Pre	0305-96	2	Sample		
17	Vial 3	Standard 3	0305-96	2	Sample		
18	Vial 4	Standard 4	0305-96	2	Sample		
19	Vial 19	Blank Pre	0305-96	2	Sample		
20	Vial 20	IHBlank Pre	0305-96	2	Sample		
21	Vial 21	E1ProbePost*10	0305-96	2	Sample		
22	Vial 22	E1ImpPost*100	0305-96	2	Sample		
23	Vial 23	E6ProbePost*10	0305-96	2	Sample		
24	Vial 24	E6ImpPost*100	0305-96	2	Sample		
25	Vial 25	Blank Post	0305-96	2	Sample		
26	Vial 26	IH Blank Post	0305-96	2	Sample		
27	Vial 27	E1ProbePre*10	0305-96	2	Sample		
28	Vial 28	E1ImpPre*10	0305-96	2	Sample		
29	Vial 3	Standard 3	0305-96	2	Sample		
30	Vial 4	Standard 4	0305-96	2	Sample		
31	Vial 29	E6ProbePre*10	0305-96	2	Sample		
32	Vial 30	E6ImpPre*10	0305-96	2	Sample		
33	Vial 41	Blank Post	0305-96	2	Sample		
34	Vial 42	Blank Pre	0305-96	2	Sample		
35	Vial 31	Blank Pre	0305-96	2	Sample		
36	Vial 32	IH Blank Pre	0305-96	2	Sample		
37	Vial 3	Standard 3	0305-96	2	Sample		
38	Vial 33	Run 1 Post*100	0305-96	2	Sample		
39	Vial 34	Run 2 Post*100	0305-96	2	Sample		
40	Vial 35	Run 3 Post*100	0305-96	2	Sample		
41	Vial 36	IH Blank Post	0305-96	2	Sample		
42	Vial 43	Run 3 Post*50	0305-96	2	Sample		
43	Vial 44	MS/Run 3 Post*50	0305-96	2	Sample		
44	Vial 45	MSRun 2 Post*100	0305-96	2	Sample		
45	Vial 46	MSE1ProbePost*10	0305-96	2	Sample		
46	Vial 37	Run 1 Pre	0305-96	2	Sample		
47	Vial 3	Standard 3	0305-96	2	Sample		
48	Vial 38	Run 2 Pre	0305-96	2	Sample		
49	Vial 39	Run 3 Pre	0305-96	2	Sample		
50	Vial 40	IH Blank Pre	0305-96	2	Sample		
51	Vial 47	Run 2 Pre*10	0305-96	2	Sample		
52	Vial 48	Run 3 Pre*2	0305-96	2	Sample		
53	Vial 3	Standard 3	0305-96	2	Sample		

Method Information

Dionex IonPac AS-14A 4-mm analytical (4x250mm) column.
Flow rate 1.2 mL/min
8mM Na2CO3/1mM NaHCO3 mobile phase
Suppressed anion conductivity detection

ANALOG DIGITAL CONVERTER

	Signal 1
Description:	Waters 430
Source:	Signal
Unit:	uS
Units/Volt:	1000.000
Peakwidth (Data Rate):	0.053 Min (5.00 Hz)
Stop Time:	No Limit
Data Storage:	Partial:
Start data:	0.01 Min
Stop data:	0.01 Min

Start Signal Source: External Device Will Start 35900

Timed Event Table:
<no events>

1100 Quaternary Pump 1

Control

Column Flow	:	1.200 ml/min
Stoptime	:	12.00 min
Posttime	:	Off

Solvents

Solvent A	:	0.0 % ( )
Solvent B	:	0.0 % ( )
Solvent C	:	100.0 % (8.0mM Na2CO3/1.0mM NaHCO3)
Solvent D	:	Off

PressureLimits

Minimum Pressure	:	0 bar
Maximum Pressure	:	400 bar

Auxiliary

Maximal Flow Ramp	:	100.00 ml/min^2
Primary Channel	:	Auto
Compressibility	:	83*10^-6/bar
Minimal Stroke	:	Auto

Store Parameters

Store Ratio A	:	Yes
Store Ratio B	:	Yes
Store Ratio C	:	Yes
Store Ratio D	:	Yes
Store Flow	:	Yes
Store Pressure	:	Yes

Agilent 1100 Autosampler 1

Injection

Injection Mode	:	Needle Wash
Injector volume	:	25.00 µl
Wash Vial	:	100
Optimization	:	none

Auxiliary

Drawspeed	:	100 µl/min
Ejectspeed	:	1000 µl/min
Draw position	:	2.0 mm

Time

Stoptime	:	As Pump
Posttime	:	Off

Agilent 1100 Column Thermostat 1

Temperature settings

Left temperature	:	30.0°C
Right temperature	:	Same as left
Enable analysis	:	When Temp. is within setpoint +/- 0.8°C
Store left temperature	:	No
Store right temperature	:	No

Time

Stoptime	:	As pump
Posttime	:	Off

Column Switching Valve : Column 1

Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, IN 46219

Project Number: PPFF #2

Antimony, Arsenic, Barium,
Beryllium, Cadmium, Chromium,
Cobalt, Copper, Lead,
Manganese, Mercury, Nickel,
Phosphorus, Selenium,
Silver, Thallium, and Zinc

EPA Method 29 Analysis

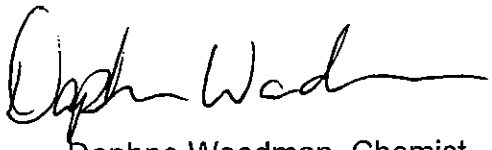
Analytical Report
5025

el1

Element One, Inc.
5022-C Wrightsville Av., Wilmington, NC 28403
910-793-0128 FAX: 910-792-6853 e1lab@e1lab.com

The following data for Analytical Report 5025
has been reviewed for completeness, accuracy,
adherence to method protocol,
and compliance with quality assurance guidelines.

Quality Assurance Review by:



Daphne Woodman, Chemist
May 6, 2005

Report Reviewed and Finalized By:

Ken Smith, Laboratory Director
May 6, 2005

el$_1$

SUMMARY OF RESULTS

Summary of Analysis

Summary of Mercury Analysis

Run Number		Average Total Catch, µg	Front half µg	H_2O_2/HNO_3 µg	Empty Imp. µg	$KMnO_4$ µg
Run 1	#1	12.0	< 0.1	8.41	< 0.2	3.53
	#2		< 0.1	8.55	< 0.2	3.58
Run 2	#1	13.1	< 0.1	8.01	< 0.2	5.11
	#2		< 0.1	7.97	< 0.2	5.15
Run 3	#1	12.4	< 0.1	4.61	< 0.2	7.79
	#2		< 0.1	4.61	< 0.2	7.76
Reagent Blank	#1	< 0.4	< 0.1	< 0.3	< 0.2	< 0.4
	#2		< 0.1	< 0.3	< 0.2	< 0.4

Summary of Metals Analysis

Element	Run 1 Total µg	Run 2 Total µg	Run 2 Total µg	Run 3 Total µg	Reagent Blank Total µg
Antimony	1.78	< 0.5	< 0.5	< 0.5	< 0.5
Arsenic	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium	2.48	2.51	2.40	2.27	1.98
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	< 0.2	< 0.2	< 0.2	0.38	< 0.2
Chromium	3.05	2.08	1.91	1.72	0.82
Cobalt	0.87	1.31	1.24	< 0.5	< 0.5
Copper	14.8	7.87	7.52	6.53	0.63
Lead	1.82	1.96	1.92	1.91	< 0.5
Manganese	22.8	8.88	8.30	9.07	0.89
Nickel	3.00	2.34	2.22	1.78	0.87
Phosphorus	24.8	33.3	31.6	14.8	19.2
Selenium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Silver	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Thallium	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	52.7	60.9	57.3	63.4	2.10

ANALYTICAL NARRATIVE

el$_1$

Element One Analytical Narrative

Client	Air Test Professionals, Inc.	Element One #:	5025
Client ID:	PPFF #2- Nucor Steel	Analyst:	DBW, CML, IJJ
Method:	M29	Date Received	4/21/05
Analytes	Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, Zn, & Hg	Dates Analyzed	4/27-28/05

Summary of Analysis

The Method 29 samples were digested, prepared, and analyzed according to Method 29 protocol. Samples were analyzed for mercury on a PerkinElmer FIMS-100 CVAA mercury analyzer. The other metals were analyzed on a PerkinElmer ELAN 6100 ICP-MS.

Detection Limits

The FIMS-100 CVAA instrument reporting limit for mercury was 0.004 µg per aliquot analyzed. The ICP-MS instrument reporting limits were 0.25 µg/L for beryllium, 1 µg/L for cadmium, 20 µg/L for phosphorus, and 2.5 µg/L for the other metals.

Analysis QA/QC

Duplicate analyses relative percent difference (RPD), spike sample recovery, and second source calibration verification data are summarized in the Quality Control Section. All QA/QC data was within the criteria of the method.

Additional Comments

The reported results have not been corrected for any blank or spike recovery values. Nothing unusual was noticed in the analyses, with the exception of the phosphorous in the reagent blank. The phosphorus in the reagent blank was noticeably high; therefore, the reagent blank was reanalyzed to verify its data.

QUALITY CONTROL SUMMARY

el$_1$

Summary of Quality Control Data

Mercury Duplicate Analysis RPD

Run Number	Front half	H_2O_2/HNO_3	Empty Imp	$KMnO_4$
Run 1	NA	1.6%	NA	1.4%
Run 2	NA	0.6%	NA	0.8%
Run 3	NA	0.1%	NA	0.3%
Reagent Blank	NA	NA	NA	NA

Mercury Spike Recoveries

Run Number		Front half	H_2O_2/HNO_3	Empty Imp	KMnO4
Run 3	# 1	110%	103%	101%	91%
.	# 2	101%	106%	98%	92%

Summary of Quality Control Data

Metals Duplicate Analysis RPD and Spike Recoveries

Element	Run 2 RPD	Run 3 Recovery
Antimony	NA	104%
Arsenic	NA	110%
Barium	4.6%	89%
Beryllium	NA	110%
Cadmium	NA	96%
Chromium	8.7%	107%
Cobalt	5.0%	116%
Copper	4.6%	111%
Lead	2.2%	112%
Manganese	6.8%	114%
Nickel	5.5%	121%
Phosphorus	5.4%	82%
Selenium	NA	86%
Silver	NA	89%
Thallium	NA	109%
Zinc	6.0%	100%

Second Source Calibration Check Recoveries

Element	0.25 ppb	1 ppb	100 ppb	200 ppb
Antimony		133%	103%	96%
Arsenic		96%	102%	97%
Barium		109%	102%	97%
Beryllium	100%	99%	98%	94%
Cadmium		105%	103%	97%
Chromium		100%	104%	99%
Cobalt		113%	103%	98%
Copper		116%	108%	104%
Lead		115%	105%	98%
Manganese		115%	104%	98%
Nickel		105%	103%	99%
Phosphorus		115%	96%	107%
Selenium		116%	101%	97%
Silver		100%	102%	70%
Thallium		114%	104%	97%
Zinc		118%	106%	101%

ANALYTICAL DATA

el$_1$

elementOne **AIR TESTING SAMPLE SUBMISSION FORM** **Lab ID 5025**
DUE DATE: 5/5/05

Project ID/ Number: Nucor Steel / PPFF #2

Client: **Air Test Professionals, Inc.**	Date / Time Received: 4/21/05 / 16155

HNO_3 Lot: 1104050	HF Lot: 5104011	HCl Lot: 1104060	**Ref. Method:**
Volume Marked (Y) / N	Volume Loss Y / (N) / ?	pH < 2.0 (Y) / N	**29**

	Sample Identification		Sample Identification
1	Run 1		
2	Run 2		
3	Run 2 Duplicate		
4	Run 3		
5	Run 3 Spike		
6	Reagent Blank		

Analyses Requested: Sb, As, Ba, Be,Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, Zn & Hg

	Front Half		Back Half			HNO_3 (A)		$KMnO_4$ (B)		HCl (C)	
SAMPLE	BV, ml	FV, ml	BV, ml	Used	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml
1	92ml	100	300	150	50	104	200	395	500		
2/3	110ml	↓	310	155	↓	109	↓	400	↓		
4/5	106	↓	320	160	↓	110	↓	400	↓		
6	100	↓	200 H_2O_2 100.1N HNO_3	150	↓	200ml	↓	100ml KMnO4 33ml DI	Calculate as 406ml		

Comments: No "C" fraction submitted. 4.25.05 JJ

Element One, Inc. Form 118 - Revision 6.0

Sample Submission Form by PAS
4/23/2005 2:38:15 PM

Dataset Report

User Name: daphne.woodman
omputer Name: ICPMS1
Dataset File Path: C:\elandata\Dataset\042705-2\
Report Date/Time: Thursday, April 28, 2005 08:05:22

Daph Wood
4-28-05

Autosampler Position: 3

The Dataset

Time	Sample ID	Batch ID	Read Type	Description	Init. Quant	Prep. Vol.	Aliquot. Vol.	Diluted V
14:38:38 Wed 27-Apr-05	Blank		Blank					
14:41:40 Wed 27-Apr-05	Standard 1		Standard #1					
14:44:43 Wed 27-Apr-05	Standard 2		Standard #2					
14:47:47 Wed 27-Apr-05	Standard 3		Standard #3					
14:50:51 Wed 27-Apr-05	QC Std 1		QC Std #1					
14:53:54 Wed 27-Apr-05	QC Std 2		QC Std #2					
14:56:58 Wed 27-Apr-05	QC Std 3		QC Std #3					
15:00:01 Wed 27-Apr-05	QC Std 4		QC Std #4					
15:03:05 Wed 27-Apr-05	QC Std 6		QC Std #6					
15:06:09 Wed 27-Apr-05	QC Std 7		QC Std #7					
15:09:13 Wed 27-Apr-05	QC Std 8		QC Std #8					
15:12:18 Wed 27-Apr-05	QC Std 9		QC Std #9 – Carry over for Sb					
15:15:24 Wed 27-Apr-05	QC Std 10		QC Std #10					
15:18:27 Wed 27-Apr-05	5025-1		Sample	Air Test Professionals				
15:21:29 Wed 27-Apr-05	5025-2		Sample	Air Test Professionals				
15:24:32 Wed 27-Apr-05	5025-2	d	QC Duplicate	Air Test Professionals				
15:27:34 Wed 27-Apr-05	5025-4		Sample	Air Test Professionals				
15:30:37 Wed 27-Apr-05	5025-4	s	Spike - 1	Air Test Professionals				
15:33:39 Wed 27-Apr-05	5025-6		Sample	Air Test Professionals				
15:36:46 Wed 27-Apr-05	QC Std 1		QC Std #1					
15:39:48 Wed 27-Apr-05	QC Std 4		QC Std #4					
15:47:20 Wed 27-Apr-05	QC Std #2		QC Std #2					
15:50:25 Wed 27-Apr-05	QC Std #9		QC Std #9					
15:53:30 Wed 27-Apr-05	QC Std #10		QC Std #10					
15:56:34 Wed 27-Apr-05	5025-4	x5	Sample	Air Test Professionals				
15:59:37 Wed 27-Apr-05	5025-4	x5s	Spike - 1	Air Test Professionals				
16:02:41 Wed 27-Apr-05	5025-6		Sample	Air Test Professionals				
16:05:46 Wed 27-Apr-05	5025-6 filter		Sample	Air Test Professionals				
16:08:49 Wed 27-Apr-05	QC Std 1		QC Std #1					
16:11:52 Wed 27-Apr-05	QC Std 4		QC Std #4					
16:17:08 Wed 27-Apr-05	1 ppb Se		Sample					
16:20:11 Wed 27-Apr-05	QC Std 1		QC Std #1					
16:23:14 Wed 27-Apr-05	QC Std 4		QC Std #4					
16:26:37 Wed 27-Apr-05	2.5 ppb Se		Sample					
16:29:40 Wed 27-Apr-05	QC Std 1		QC Std #1					
16:32:43 Wed 27-Apr-05	QC Std 4		QC Std #4					
16:36:06 Wed 27-Apr-05	Blank		Blank					
16:39:09 Wed 27-Apr-05	Standard 1		Standard #1					
16:42:12 Wed 27-Apr-05	Standard 2		Standard #2					
16:45:16 Wed 27-Apr-05	Standard 3		Standard #3					
16:48:19 Wed 27-Apr-05	QC Std 1		QC Std #1					
16:51:23 Wed 27-Apr-05	QC Std 2		QC Std #2					
16:54:27 Wed 27-Apr-05	QC Std 3		QC Std #3					

16:57:30 Wed 27-Apr-05	QC Std 4		QC Std #4	
17:00:34 Wed 27-Apr-05	QC Std 6		QC Std #6	
17:03:38 Wed 27-Apr-05	QC Std 7		QC Std #7	
17:06:42 Wed 27-Apr-05	QC Std 8		QC Std #8	
17:09:47 Wed 27-Apr-05	QC Std 9		QC Std #9	
17:12:53 Wed 27-Apr-05	QC Std 10		QC Std #10	
17:15:56 Wed 27-Apr-05	5025-1		Sample	Air Test Professionals
17:18:58 Wed 27-Apr-05	5025-2		Sample	Air Test Professionals
17:22:01 Wed 27-Apr-05	5025-2	d	QC Duplicate	Air Test Professionals
17:25:03 Wed 27-Apr-05	5025-4		Sample	Air Test Professionals
17:28:06 Wed 27-Apr-05	5025-4	s	Spike - 1	Air Test Professionals
17:31:08 Wed 27-Apr-05	5025-6		Sample	Air Test Professionals
17:34:11 Wed 27-Apr-05	QC Std 1		QC Std #1	
17:37:14 Wed 27-Apr-05	QC Std 4		QC Std #4	

Sample/Batch Report

Daph Woodman 4-28-05

User Name: daphne.woodman
Computer Name: ICPMS1
Sample File: C:\elandata\Sample\xb.sam
Report Date/Time: Thursday, April 28, 2005 08:10:44

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
14		5025-1	Air Test Professionals						
15		5025-2	Air Test Professionals						
16	d	5025-2	Air Test Profes	QC Duplicate					
17		5025-4	Air Test Professionals						
18	s	5025-4	Air Test Profes	Spike - 1					
19		5025-6	Air Test Professionals						
5		QC Std #2							
12		QC Std #9							
13		QC Std #10							
20	x5	5025-4	Air Test Professionals						
21	x5s	5025-4	Air Test Profes	Spike - 1					
22		5025-6	Air Test Professionals						
23		5025-6 filter	Air Test Professionals						
24		1 ppb Se							
25		2.5 ppb Se							
14		5025-1	Air Test Professionals						
15		5025-2	Air Test Professionals						
16	d	5025-2	Air Test Profes	QC Duplicate					
17		5025-4	Air Test Professionals						
18	s	5025-4	Air Test Profes	Spike - 1					
19		5025-6	Air Test Professionals						

elementOne **ICP-MS RUN SHEET** **5025**

Analyst: __DBW____ Date: 4-27-05 **Solid Samples** ☐ / *Liquid Samples*

Daphne W. 4-28-05

A/S Loc	Batch # for sample sets	Sample Lab ID	Sample Description	Type Sample QC Spike QC Dup QC Reg Blank	Spike concentratio	Prep Volume (ml)	Aliquot (ml)	Diluted to Volume (ml)	Units
12			LRB	S		100X2			
13			LRB	SS	Table #1	100X2			
14			5025-1	S		100X2			
15			5025-2	S		100X2			
16			5025-2	SD		100X2			
17			5025-4	S		100X2			
18			5025-4	SS	Table #1	100X2			
19			5025-6	S		100X2			

Dilutions and Rechecks

5			QC Std #2						
12			QC Std #9						
13			QC Std #10						
20			5025-4	S		100X2	2.0	10	
21			5025-4	SS	Table #1	100X2	2.0	10	
22			5025-6	S		100X2			
23			5025-6 filter	S		100			
24			1 ppb Se						
25			2.5 ppb Se						
12			LRB	S		100X2			
13			LRB	SS	Table #1	100X2			
14			5025-1	S		100X2			

Analyst: __DBW____ Date: 4-27-05 **Solid Samples** ☐ / *Liquid Samples*

15			5025-2	S		100X2			
16			5025-2	SD		100X2			
17			5025-4	S		100X2			
18			5025-4	SS	Table #1	100X2			
19			5025-6	S		100X2			

Spikes are post at 0.02 mL of 25ppm spiking solutions lot 021405-ABC & F in a final volume of 10ml.

Submitted for QC:	Date: 4-28-05	Time: 8:10	By: DLW	QC Review: [signature]	Date: 5-6-05	Time: 1400	By:
Re-Test Required:	No:	Yes:	Comments:				
Resubmitted for QC:	Date:	Time:	By:	QC Review:	Date:	Time:	By:

Element One, Inc. Form 126 - Revision 0.0

ELAN Instrument Control Session - [Quantitative Analysis Method - C:\elandata\Method\xb.mth]

File Edit lysis Options Window Help

Timing | Processing | Equation | Calibration | Sampling | Devices | QC...

	Analyte	Mass (amu)	Spike Table 1 (Conc.)	Spike Table 1 Det. Limit (Conc.)	Spike Table 2 (Conc.)	Spike Table 2 Det. Limit (Conc.)	Spike Table 3 (Conc.)	Spike Table 3 Det. Limit (Conc.)	Spike Table 4 (Conc.)
1	Be	9.0122	50	1	25	1	100	1	
2	P	30.9938	250	1	25	1	100	1	
3	Sc	44.9559	50	1	25	1	100	1	
4	Cr	51.9405	50	1	25	1	100	1	
5	Cr	52.9407	50	1	25	1	100	1	
6	Mn	54.9381	50	1	25	1	100	1	
7	Co	58.9332	50	1	25	1	100	1	
8	Ni	59.9332	50	1	25	1	100	1	
9	Cu	62.9298	50	1	25	1	100	1	
10	Cu	64.9278	50	1	25	1	100	1	
11	Zn	65.926	50	1	25	1	100	1	
12	Zn	66.9271	50	1	25	1	100	1	
13	Zn	67.9249	50	1	25	1	100	1	
14	As	74.9216	50	1	25	1	100	1	
15	Se	76.9199	50	1	25	1	100	1	
16	Se	81.9167	50	1	25	1	100	1	
17	Ag	106.905	50	1	25	1	100	1	
18	Ag	108.905	50	1	25	1	100	1	
19	Cd	110.904	50	1	25	1	100	1	
20	Cd	113.904	50	1	25	1	100	1	
21	Sb	120.904	50	1	25	1	100	1	
22	Sb	122.904	50	1	25	1	100	1	
23	Ba	134.906	50	1	25	1	100	1	
24	Ba	136.905	50	1	25	1	100	1	
25	Tl	204.975	50	1	25	1	100	1	

requency | QC Std Int Stds | Calibration Stds | Sample Int Stds | Sample | Spike | Dilution | Duplicate | Spike Tables | QC Action Controls | Autosampler

For help, Press F1

NUM | LOG | FAUL

Start | GpibManager | ELAN Instrument Con... | 8:02 AM

ELAN Instrument Control Session - [Quantitative Analysis Method - C:\elandata\Method\xb.mth]

File Edit Analysis Options Window Help

Timing | Processing | Equation | Calibration | Sampling | Devices | QC...

	Analyte	Mass (amu)	Spike Table 1 (Conc.)	Spike Table 1 Det. Limit (Conc.)	Spike Table 2 (Conc.)	Spike Table 2 Det. Limit (Conc.)	Spike Table 3 (Conc.)	Spike Table 3 Det. Limit (Conc.)	Spike Table 4 (Conc.)
3	Sc	44.9559	50	1	25	1	100	1	
4	Cr	51.9405	50	1	25	1	100	1	
5	Cr	52.9407	50	1	25	1	100	1	
6	Mn	54.9381	50	1	25	1	100	1	
7	Co	58.9332	50	1	25	1	100	1	
8	Ni	59.9332	50	1	25	1	100	1	
9	Cu	62.9298	50	1	25	1	100	1	
10	Cu	64.9278	50	1	25	1	100	1	
11	Zn	65.926	50	1	25	1	100	1	
12	Zn	66.9271	50	1	25	1	100	1	
13	Zn	67.9249	50	1	25	1	100	1	
14	As	74.9216	50	1	25	1	100	1	
15	Se	76.9199	50	1	25	1	100	1	
16	Se	81.9167	50	1	25	1	100	1	
17	Ag	106.905	50	1	25	1	100	1	
18	Ag	108.905	50	1	25	1	100	1	
19	Cd	110.904	50	1	25	1	100	1	
20	Cd	113.904	50	1	25	1	100	1	
21	Sb	120.904	50	1	25	1	100	1	
22	Sb	122.904	50	1	25	1	100	1	
23	Ba	134.906	50	1	25	1	100	1	
24	Ba	136.905	50	1	25	1	100	1	
25	Tl	204.975	50	1	25	1	100	1	
26	Pb	207.977	50	1	25	1	100	1	
27	Kr	82.9141	50	1	25	1	100	1	

Frequency | QC Std Int Stds | Calibration Stds | Sample Int Stds | Sample | Spike | Dilution | Duplicate | Spike Tables | QC Action Controls | AutoSampler

For help, Press F1

NUM

Start | GpibManager | ELAN Instrument Con...

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Date Wednesday, April 27, 2005 14:38:38
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|-	P	31	8982.2		ppb
|	Sc	45	278133.2		ppb
|>	Rh	103	541985.5		ppb
|>	Ho	165	1031216.2		ppb
	Kr	83	168		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Date Wednesday, April 27, 2005 14:41:40
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	227526.6		ppb
|-	P	31	17177.5	23.72443	ppb
|	Sc	45	269263.3		ppb
|>	Rh	103	507658.1		ppb
|>	Ho	165	973651.3		ppb
	Kr	83	157.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Date Wednesday, April 27, 2005 14:44:43
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	241772.4		ppb
|-	P	31	398055.6	1070.11848	ppb
|	Sc	45	269336.1		ppb
|>	Rh	103	499820		ppb
|>	Ho	165	994806.1		ppb
	Kr	83	177.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Date Wednesday, April 27, 2005 14:47:47
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	235561		ppb
|-	P	31	1819599.8	4998.1468	ppb
|	Sc	45	257211.8		ppb
|>	Rh	103	469013.7		ppb
|>	Ho	165	957219.3		ppb
	Kr	83	226		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date Wednesday, April 27, 2005 14:50:51
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	252214.8		ppb
|-	P	31	8969.9	2.5428	ppb
|	Sc	45	261282.8		ppb
|>	Rh	103	483894.7		ppb
|>	Ho	165	997557.7		ppb
	Kr	83	150.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Date Wednesday, April 27, 2005 14:53:54
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	252907.3		ppb
|-	P	31	15863	22.97656	ppb
|	Sc	45	251874.4		ppb
|>	Rh	103	462132.4		ppb
|>	Ho	165	945561.2		ppb
	Kr	83	146.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date Wednesday, April 27, 2005 14:56:58
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	249669.3		ppb
|-	P	31	1096319.7	3216.01367	ppb
|	Sc	45	245660.8		ppb
|>	Rh	103	438141.2		ppb
|>	Ho	165	927247.6		ppb
	Kr	83	165.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date Wednesday, April 27, 2005 15:00:01
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	262302.8		ppb
|-	P	31	363727.3	1054.25238	ppb
|	Sc	45	243843.5		ppb
|>	Rh	103	437603.9		ppb
|>	Ho	165	934681		ppb
	Kr	83	150.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Date Wednesday, April 27, 2005 15:03:05
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	248034.7		ppb
|-	P	31	16292492.2	50088.6735	ppb
|	Sc	45	244101		ppb
|>	Rh	103	420673.7		ppb
|>	Ho	165	952177.4		ppb
	Kr	83	198.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Date Wednesday, April 27, 2005 15:06:09
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	246074.6		ppb
|-	P	31	16256682.7	50126.2451	ppb
|	Sc	45	240372.1		ppb
|>	Rh	103	419486.6		ppb
|>	Ho	165	943559.7		ppb
	Kr	83	180.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 9
Sample Date Wednesday, April 27, 2005 15:12:18
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	272999		ppb
|-	P	31	12064.6	12.84064	ppb
|	Sc	45	265521.4		ppb
|>	Rh	103	455619.9		ppb
|>	Ho	165	981377.3		ppb
	Kr	83	113.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 10
Sample Date Wednesday, April 27, 2005 15:15:24
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	272201.1		ppb
|-	P	31	76114.3	218.38225	ppb
|	Sc	45	247272.3		ppb
|>	Rh	103	410659.6		ppb
|>	Ho	165	915259.7		ppb
	Kr	83	118.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date Wednesday, April 27, 2005 15:36:46
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	226221.8		ppb
|-	P	31	5784.2	-2.59636	ppb
|	Sc	45	193496.5		ppb
|>	Rh	103	397092.9		ppb
|>	Ho	165	912600.9		ppb
	Kr	83	106.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date Wednesday, April 27, 2005 15:39:48
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	210509.3		ppb
|-	P	31	286745.2	966.80453	ppb
|	Sc	45	183008.1		ppb
|>	Rh	103	375425.3		ppb
|>	Ho	165	866287.2		ppb
	Kr	83	121.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std #9
Sample Date Wednesday, April 27, 2005 15:50:25
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	227286.5		ppb
|-	P	31	8956.6	8.09593	ppb
|	Sc	45	205620		ppb
|>	Rh	103	392641.4		ppb
|>	Ho	165	899545.6		ppb
	Kr	83	95.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std #10
Sample Date Wednesday, April 27, 2005 15:53:30
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	211547.2		ppb
|-	P	31	61047.1	194.78458	ppb
|	Sc	45	187651.7		ppb
|>	Rh	103	365305.1		ppb
|>	Ho	165	847267.5		ppb
	Kr	83	104.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-4
Sample Date Wednesday, April 27, 2005 15:56:34
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	216054.4		ppb
|-	P	31	10651.7	14.81621	ppb
|	Sc	45	241874.2		ppb
|>	Rh	103	380215.1		ppb
|>	Ho	165	878678.8		ppb
	Kr	83	130		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-4
Sample Date Wednesday, April 27, 2005 15:59:37
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	205509.1		ppb
|-	P	31	67673.6	219.11954	ppb
|	Sc	45	239726.6		ppb
|>	Rh	103	364043.1		ppb
|>	Ho	165	869359.2		ppb
	Kr	83	144		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-6
Sample Date Wednesday, April 27, 2005 16:02:41
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	221549.4		ppb
|-	P	31	33086.9	96.16662	ppb
|	Sc	45	680823		ppb
|>	Rh	103	363999.6		ppb
|>	Ho	165	875275.6		ppb
	Kr	83	286.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date Wednesday, April 27, 2005 16:08:49
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	193526.1		ppb
|-	P	31	4150.6	-6.49154	ppb
|	Sc	45	164809.7		ppb
|>	Rh	103	359237.1		ppb
|>	Ho	165	823777.5		ppb
	Kr	83	104.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date Wednesday, April 27, 2005 16:11:52
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	186822.9		ppb
|-	P	31	258296.4	956.49276	ppb
|	Sc	45	161840.3		ppb
|>	Rh	103	341789.5		ppb
|>	Ho	165	808442.3		ppb
	Kr	83	110		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Date Wednesday, April 27, 2005 16:36:06
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	191047.7		ppb
|-	Be	9	16		ppb
|-	P	31	5128		ppb
|	Sc	45	158850.8		ppb
|	Cr	52	5332.4		ppb
|	Cr	53	20414.5		ppb
|	Mn	55	1416.8		ppb
|	Co	59	352.3		ppb
|	Ni	60	262		ppb
|	Cu	63	485.7		ppb
|	Cu	65	421.3		ppb
|	Zn	66	2493.6		ppb
|	Zn	67	1610.8		ppb
|	Zn	68	4286		ppb
|	As	75	285.9		ppb
|	Se	77	1508.4		ppb
|	Se	82	31.4		ppb
|>	Rh	103	355310.7		ppb
|	Ag	107	6261.1		ppb
|	Ag	109	5925.6		ppb
|	Cd	111	102		ppb
|-	Cd	114	232.7		ppb
|-	Sb	121	14195.8		ppb
|	Sb	123	10908.2		ppb
|	Ba	135	1227.1		ppb
|	Ba	137	2179.9		ppb
|>	Ho	165	824018.9		ppb
|	Tl	205	1690.8		ppb
|-	Pb	208	5760.2		ppb
	Kr	83	104.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Date Wednesday, April 27, 2005 16:39:09
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	184602.6		ppb
|-	Be	9	299.3	0.9386	ppb
|-	P	31	10336.8	20.90948	ppb
|	Sc	45	153352.6		ppb
|	Cr	52	10847.2	0.92063	ppb
|	Cr	53	20622.8	1.55214	ppb
|	Mn	55	10721.1	0.87793	ppb
|	Co	59	7387.3	0.902	ppb
|	Ni	60	1674.4	0.85006	ppb
|	Cu	63	3929.2	0.94064	ppb
|	Cu	65	2043.2	0.89194	ppb
|	Zn	66	1853.8	-0.44286	ppb
|	Zn	67	1529.4	-0.01355	ppb
|	Zn	68	3833.2	-0.27756	ppb
|	As	75	1329.3	0.76291	ppb
|	Se	77	1499.4	0.58283	ppb
|	Se	82	148.8	0.81828	ppb
|>	Rh	103	337942.1		ppb
|	Ag	107	8331.2	0.28412	ppb
|	Ag	109	7754.8	0.26725	ppb
|	Cd	111	1904.4	1.01219	ppb
|-	Cd	114	4419.1	1.08122	ppb
|-	Sb	121	8764.8	-0.73775	ppb
|	Sb	123	6697.3	-0.73227	ppb
|	Ba	135	2315.2	0.52789	ppb
|	Ba	137	4091.6	0.55641	ppb
|>	Ho	165	791976.9		ppb
|	Tl	205	25059.5	1.03288	ppb
|-	Pb	208	35684.4	0.99418	ppb
	Kr	83	99		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Date Wednesday, April 27, 2005 16:42:12
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	189294.4		ppb
|-	Be	9	29038.8	93.76534	ppb
|-	P	31	262786.6	964.19778	ppb
|	Sc	45	159600.7		ppb
|	Cr	52	575769.2	89.17497	ppb
|	Cr	53	88211.7	86.25032	ppb
|	Mn	55	920888.5	84.58074	ppb
|	Co	59	704089.4	88.26564	ppb
|	Ni	60	153453.7	89.56473	ppb
|	Cu	63	349972.8	92.96405	ppb
|	Cu	65	169621.6	90.12099	ppb
|	Zn	66	101392.9	83.15239	ppb
|	Zn	67	17708.5	81.37402	ppb
|	Zn	68	78708.4	83.52139	ppb
|	As	75	130617	92.0446	ppb
|	Se	77	11615.2	89.40802	ppb
|	Se	82	13688.8	91.9401	ppb
|>	Rh	103	346537.2		ppb
|	Ag	107	862439.6	100.00715	ppb
|	Ag	109	825517.6	100.00735	ppb
|	Cd	111	188139.6	102.61009	ppb
|-	Cd	114	429802.9	107.76588	ppb
|-	Sb	121	622628.5	90.65034	ppb
|	Sb	123	474825.7	88.48713	ppb
|	Ba	135	212067.1	96.31625	ppb
|	Ba	137	376641.6	102.55091	ppb
|>	Ho	165	807804.7		ppb
|	Tl	205	2299281.9	99.19891	ppb
|-	Pb	208	3157583.5	101.79488	ppb
	Kr	83	115.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Date Wednesday, April 27, 2005 16:45:16
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	166815.9		ppb
|-	Be	9	131145.2	500.48464	ppb
|-	P	31	1168105.7	4995.49287	ppb
|	Sc	45	147551.3		ppb
|	Cr	52	2599838.5	499.69915	ppb
|	Cr	53	335201.4	500.07483	ppb
|	Mn	55	4170205.9	499.63658	ppb
|	Co	59	3183387.2	499.58942	ppb
|	Ni	60	688400	499.4554	ppb
|	Cu	63	1559107.1	499.3131	ppb
|	Cu	65	759679.1	499.43254	ppb
|	Zn	66	453936.3	499.7732	ppb
|	Zn	67	75800.4	499.95323	ppb
|	Zn	68	338565.5	499.45602	ppb
|	As	75	596476.6	499.80967	ppb
|	Se	77	47465.5	499.6862	ppb
|	Se	82	62137.5	499.69434	ppb
|>	Rh	103	320245.2		ppb
|	Ag	107	3082846.5	388.99007	ppb
|	Ag	109	2850137.1	375.55668	ppb
|	Cd	111	849317.4	499.55535	ppb
|-	Cd	114	1911294.1	499.26008	ppb
|-	Sb	121	2799000.1	499.47156	ppb
|	Sb	123	2155430.8	499.66634	ppb
|	Ba	135	969942.2	499.53594	ppb
|	Ba	137	1684985.2	499.09683	ppb
|>	Ho	165	760283		ppb
|	Tl	205	11134686.4	500.56091	ppb
|-	Pb	208	14684047.3	499.80205	ppb
	Kr	83	147.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date Wednesday, April 27, 2005 16:48:19
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	162072.4		ppb
|-	Be	9	45.7	0.12683	ppb
|-	P	31	6054.7	5.79954	ppb
|	Sc	45	148095.4		ppb
|	Cr	52	6056.3	0.22484	ppb
|	Cr	53	20007.6	2.09711	ppb
|	Mn	55	2568.9	0.15087	ppb
|	Co	59	1156.4	0.1294	ppb
|	Ni	60	396.7	0.11279	ppb
|	Cu	63	942.4	0.15784	ppb
|	Cu	65	679.7	0.19146	ppb
|	Zn	66	2495.6	0.23778	ppb
|	Zn	67	1711.8	1.58591	ppb
|	Zn	68	4238	0.47221	ppb
|	As	75	780.3	0.42957	ppb
|	Se	77	1318.4	-0.64121	ppb
|	Se	82	146.4	0.93577	ppb
|>	Rh	103	324702.7		ppb
|	Ag	107	115689.9	13.7023	ppb
|	Ag	109	110691.9	13.70194	ppb
|	Cd	111	288.4	0.11343	ppb
|-	Cd	114	620.1	0.1052	ppb
|-	Sb	121	35771.2	4.0191	ppb
|	Sb	123	27458.2	4.00436	ppb
|	Ba	135	1401.1	0.12596	ppb
|	Ba	137	2556.3	0.14785	ppb
|>	Ho	165	774651.6		ppb
|	Tl	205	10970.2	0.41689	ppb
|-	Pb	208	12389.6	0.23567	ppb
	Kr	83	109		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Date Wednesday, April 27, 2005 16:51:23
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	158399		ppb
|-	Be	9	269	1.02819	ppb
|-	P	31	10349.2	24.53282	ppb
|	Sc	45	144826.5		ppb
|	Cr	52	10776.8	1.1472	ppb
|	Cr	53	20636.1	3.49979	ppb
|	Mn	55	10179.1	1.06534	ppb
|	Co	59	7057.5	1.0563	ppb
|	Ni	60	1653.8	1.02719	ppb
|	Cu	63	3865.9	1.09652	ppb
|	Cu	65	2051.8	1.09826	ppb
|	Zn	66	1814.1	-0.48107	ppb
|	Zn	67	1660.8	1.39675	ppb
|	Zn	68	3640.5	-0.33823	ppb
|	As	75	1611.1	1.13184	ppb
|	Se	77	1334.1	-0.2901	ppb
|	Se	82	173.2	1.16401	ppb
|>	Rh	103	320682.9		ppb
|	Ag	107	47854.8	5.32358	ppb
|	Ag	109	44522.5	5.16352	ppb
|	Cd	111	1802.2	1.00478	ppb
|-	Cd	114	4147.3	1.0272	ppb
|-	Sb	121	10130.7	-0.47228	ppb
|	Sb	123	7957	-0.42932	ppb
|	Ba	135	2134.2	0.55249	ppb
|	Ba	137	3780.2	0.56088	ppb
|>	Ho	165	736451.9		ppb
|	Tl	205	25074.6	1.09345	ppb
|-	Pb	208	34390.5	1.0278	ppb
	Kr	83	97.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date Wednesday, April 27, 2005 16:54:27
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	159642.6		ppb
|-	Be	9	49670	198.03094	ppb
|-	P	31	722548.6	3175.91853	ppb
|	Sc	45	147064.7		ppb
|	Cr	52	999556	197.32846	ppb
|	Cr	53	139466.9	197.74422	ppb
|	Mn	55	1558214.8	192.22775	ppb
|	Co	59	1223129.4	197.73168	ppb
|	Ni	60	266215.5	198.88084	ppb
|	Cu	63	610797.6	201.41079	ppb
|	Cu	65	296715.6	200.81255	ppb
|	Zn	66	169400.2	190.59963	ppb
|	Zn	67	29764.3	196.42525	ppb
|	Zn	68	131271.2	195.98052	ppb
|	As	75	227530.4	196.25108	ppb
|	Se	77	18852.6	195.72686	ppb
|	Se	82	23361.8	193.41045	ppb
|>	Rh	103	310800		ppb
|	Ag	107	1075484.5	139.3206	ppb
|	Ag	109	1046857.1	141.73266	ppb
|	Cd	111	319788.6	193.76301	ppb
|-	Cd	114	726232.8	195.42409	ppb
|-	Sb	121	1076021.7	195.73658	ppb
|	Sb	123	828466.6	195.77639	ppb
|	Ba	135	366083.3	193.31331	ppb
|	Ba	137	645093.5	195.89888	ppb
|>	Ho	165	740164.7		ppb
|	Tl	205	4148221.1	191.43167	ppb
|-	Pb	208	5488045.1	191.72201	ppb
	Kr	83	114.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date Wednesday, April 27, 2005 16:57:30
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	158078.6		ppb
|-	Be	9	25729.7	103.54854	ppb
|-	P	31	239064.5	1008.46242	ppb
|	Sc	45	146936		ppb
|	Cr	52	533800.4	102.05333	ppb
|	Cr	53	83759.8	103.42218	ppb
|	Mn	55	837304.9	100.38393	ppb
|	Co	59	652013.8	102.48457	ppb
|	Ni	60	142195.8	103.22301	ppb
|	Cu	63	325871.6	104.43151	ppb
|	Cu	65	156360	102.79167	ppb
|	Zn	66	92956.8	100.54181	ppb
|	Zn	67	16678.2	102.58708	ppb
|	Zn	68	71215.1	100.68646	ppb
|	As	75	120387.5	100.8929	ppb
|	Se	77	10677.1	101.20216	ppb
|	Se	82	12337.3	99.2318	ppb
|>	Rh	103	319569.8		ppb
|	Ag	107	806895.5	101.48105	ppb
|	Ag	109	757314.9	99.47845	ppb
|	Cd	111	170729.1	100.57711	ppb
|-	Cd	114	391377.6	102.38645	ppb
|-	Sb	121	586898.6	103.82352	ppb
|	Sb	123	452816.2	104.05106	ppb
|	Ba	135	196948.7	101.89785	ppb
|	Ba	137	348898.2	103.82011	ppb
|>	Ho	165	753311.9		ppb
|	Tl	205	2234262.9	101.27427	ppb
|-	Pb	208	2974150.8	102.00658	ppb
	Kr	83	108.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Date Wednesday, April 27, 2005 17:00:34
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	160924.7		ppb
|-	Be	9	15	0.00621	ppb
|-	P	31	11094388.2	50720.5485	ppb
|	Sc	45	149544.2		ppb
|	Cr	52	9145	0.94888	ppb
|	Cr	53	24093.6	11.45824	ppb
|	Mn	55	21597.5	2.60479	ppb
|	Co	59	7108.8	1.13948	ppb
|	Ni	60	2172.2	1.50702	ppb
|	Cu	63	3755.5	1.14171	ppb
|	Cu	65	3048.7	1.88583	ppb
|	Zn	66	4800.5	3.16759	ppb
|	Zn	67	2334.5	6.95488	ppb
|	Zn	68	5040.6	2.24831	ppb
|	As	75	343.8	0.09146	ppb
|	Se	77	1967.8	7.97598	ppb
|	Se	82	32.2	0.05049	ppb
|>	Rh	103	300590.5		ppb
|	Ag	107	24689.1	2.62355	ppb
|	Ag	109	23142.7	2.56253	ppb
|	Cd	111	132.4	0.02918	ppb
|-	Cd	114	3743.3	0.98777	ppb
|-	Sb	121	16977.7	0.66912	ppb
|	Sb	123	13034.6	0.66541	ppb
|	Ba	135	713.4	-0.21938	ppb
|	Ba	137	1235.4	-0.23356	ppb
|>	Ho	165	767557.1		ppb
|	Tl	205	1981.5	0.01819	ppb
|-	Pb	208	12655.7	0.24614	ppb
	Kr	83	129		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Date Wednesday, April 27, 2005 17:03:38
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	154080.5		ppb
|-	Be	9	9.7	-0.01329	ppb
|-	P	31	11081356.9	51659.1793	ppb
|	Sc	45	150636.5		ppb
|	Cr	52	59961.7	11.61347	ppb
|	Cr	53	30703	23.5991	ppb
|	Mn	55	100849.5	12.97649	ppb
|	Co	59	125582.9	21.36337	ppb
|	Ni	60	27292.3	21.34236	ppb
|	Cu	63	31941	10.97205	ppb
|	Cu	65	16752.3	11.71843	ppb
|	Zn	66	12418.9	12.43834	ppb
|	Zn	67	3475.8	15.62391	ppb
|	Zn	68	10393.9	11.08539	ppb
|	As	75	11365.1	10.13331	ppb
|	Se	77	2929.3	19.74911	ppb
|	Se	82	1110.9	9.4837	ppb
|>	Rh	103	294746.4		ppb
|	Ag	107	67320.6	8.53147	ppb
|	Ag	109	63118.8	8.34909	ppb
|	Cd	111	7942.5	5.02123	ppb
|-	Cd	114	21373.2	6.01138	ppb
|-	Sb	121	8124.4	-0.88599	ppb
|	Sb	123	6233.7	-0.88672	ppb
|	Ba	135	536.3	-0.30618	ppb
|	Ba	137	932	-0.31893	ppb
|>	Ho	165	757615.6		ppb
|	Tl	205	1017	-0.02424	ppb
|-	Pb	208	8989.5	0.12625	ppb
	Kr	83	136.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 8
Sample Date Wednesday, April 27, 2005 17:06:42
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	139694.1		ppb
|-	Be	9	36	0.24745	ppb
|-	P	31	6775.4	10.89497	ppb
|	Sc	45	140615.4		ppb
|	Cr	52	8037	0.70968	ppb
|	Cr	53	23226.8	9.69215	ppb
|	Mn	55	3664.8	0.31103	ppb
|	Co	59	1696.5	0.2315	ppb
|	Ni	60	520	0.22737	ppb
|	Cu	63	1436.4	0.3458	ppb
|	Cu	65	937.4	0.40169	ppb
|	Zn	66	1136.7	-1.15778	ppb
|	Zn	67	1632.1	1.83272	ppb
|	Zn	68	3139.4	-0.8138	ppb
|	As	75	372	0.11379	ppb
|	Se	77	1597.1	3.55462	ppb
|	Se	82	71.2	0.37755	ppb
|>	Rh	103	303069.8		ppb
|	Ag	107	940.4	-0.58752	ppb
|	Ag	109	992	-0.56656	ppb
|	Cd	111	474.6	0.24098	ppb
|-	Cd	114	1077.8	0.24267	ppb
|-	Sb	121	4954.9	-1.39776	ppb
|	Sb	123	3868.7	-1.37975	ppb
|	Ba	135	214.7	-0.4653	ppb
|	Ba	137	366	-0.48029	ppb
|>	Ho	165	710866.5		ppb
|	Tl	205	5814.9	0.20938	ppb
|-	Pb	208	14679.7	0.35357	ppb
	Kr	83	87		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 9
Sample Date Wednesday, April 27, 2005 17:09:47
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	146880.9		ppb
|-	Be	9	8	-0.01882	ppb
|-	P	31	8090.4	15.14326	ppb
|	Sc	45	155613.2		ppb
|	Cr	52	5011.6	0.04656	ppb
|	Cr	53	6253.1	-19.08949	ppb
|	Mn	55	9848.8	1.0356	ppb
|	Co	59	1448.4	0.17904	ppb
|	Ni	60	2773.6	1.85542	ppb
|	Cu	63	1907.1	0.47463	ppb
|	Cu	65	1096.4	0.47657	ppb
|	Zn	66	2591.3	0.40092	ppb
|	Zn	67	1095.7	-2.33805	ppb
|	Zn	68	4174.7	0.51004	ppb
|	As	75	311.4	0.04689	ppb
|	Se	77	278.7	-11.68908	ppb
|	Se	82	46.6	0.15116	ppb
|>	Rh	103	318020.6		ppb
|	Ag	107	743	-0.61836	ppb
|	Ag	109	694.7	-0.61244	ppb
|	Cd	111	107.2	0.00942	ppb
|-	Cd	114	39.1	-0.04452	ppb
|-	Sb	121	30180.2	3.12766	ppb
|	Sb	123	23110.9	3.10323	ppb
|	Ba	135	630.4	-0.2548	ppb
|	Ba	137	1096.4	-0.26734	ppb
|>	Ho	165	751271.9		ppb
|	Tl	205	667.4	-0.03975	ppb
|-	Pb	208	22620.6	0.59824	ppb
	Kr	83	80.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 10
Sample Date Wednesday, April 27, 2005 17:12:53
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	138445.6		ppb
|-	Be	9	11770	54.06847	ppb
|-	P	31	47490	200.72015	ppb
|	Sc	45	144616.3		ppb
|	Cr	52	246050	50.33087	ppb
|	Cr	53	32829.7	27.02987	ppb
|	Mn	55	388889.4	50.26957	ppb
|	Co	59	297888.4	50.53255	ppb
|	Ni	60	69135	54.10754	ppb
|	Cu	63	154734.4	53.48025	ppb
|	Cu	65	75055.4	53.15943	ppb
|	Zn	66	47224.7	54.03528	ppb
|	Zn	67	8432.9	51.57319	ppb
|	Zn	68	37556.4	54.85396	ppb
|	As	75	60735.8	54.8658	ppb
|	Se	77	3819.9	30.05621	ppb
|	Se	82	4784.5	41.41275	ppb
|>	Rh	103	295949.4		ppb
|	Ag	107	321876.8	43.30408	ppb
|	Ag	109	305234.2	42.89451	ppb
|	Cd	111	71753.2	45.61653	ppb
|-	Cd	114	165671.7	46.774	ppb
|-	Sb	121	250931.6	46.1756	ppb
|	Sb	123	193802.9	46.34095	ppb
|	Ba	135	86827.6	47.72531	ppb
|	Ba	137	153012.1	48.35749	ppb
|>	Ho	165	704646.4		ppb
|	Tl	205	1054629.7	51.07898	ppb
|-	Pb	208	1442630.2	52.81448	ppb
	Kr	83	87.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-1
Sample Date Wednesday, April 27, 2005 17:15:56
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	171849.9		ppb
|-	Be	9	21	0.025	ppb
|-	P	31	33369.6	123.98947	ppb
|	Sc	45	447792.7		ppb
|	Cr	52	83607.4	15.23216	ppb
|	Cr	53	12429.5	-9.34002	ppb
|	Mn	55	947914	113.89986	ppb
|	Co	59	27928.9	4.35166	ppb
|	Ni	60	20819	14.99343	ppb
|	Cu	63	231074.6	74.14674	ppb
|	Cu	65	112078.3	73.74827	ppb
|	Zn	66	239475.1	263.49267	ppb
|	Zn	67	37064.4	240.40668	ppb
|	Zn	68	177299.2	259.72825	ppb
|	As	75	725.2	0.39405	ppb
|	Se	77	199	-12.56235	ppb
|	Se	82	-65.1	-0.75484	ppb
|>	Rh	103	318987.6		ppb
|	Ag	107	16318.5	1.35875	ppb
|	Ag	109	15214.9	1.31162	ppb
|	Cd	111	1529.1	0.84916	ppb
|-	Cd	114	1531.7	0.34761	ppb
|-	Sb	121	61793.7	8.73238	ppb
|	Sb	123	48292.5	8.90537	ppb
|	Ba	135	24709.3	12.1616	ppb
|	Ba	137	43807.8	12.40194	ppb
|>	Ho	165	759983.3		ppb
|	Tl	205	857.7	-0.03148	ppb
|-	Pb	208	273049.5	9.11896	ppb
	Kr	83	281.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-2
Sample Date Wednesday, April 27, 2005 17:18:58
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	173974		ppb
|-	Be	9	17	0.00903	ppb
|-	P	31	41424.1	166.7196	ppb
|	Sc	45	711071.3		ppb
|	Cr	52	56142	10.41469	ppb
|	Cr	53	8800.1	-14.46648	ppb
|	Mn	55	354327.3	44.39536	ppb
|	Co	59	39971.6	6.53201	ppb
|	Ni	60	15607.7	11.71121	ppb
|	Cu	63	117569.4	39.36192	ppb
|	Cu	65	57395	39.35183	ppb
|	Zn	66	264376.6	304.33498	ppb
|	Zn	67	40835.7	278.24951	ppb
|	Zn	68	198265	304.5421	ppb
|	As	75	730.1	0.42648	ppb
|	Se	77	150.3	-13.02221	ppb
|	Se	82	-109.8	-1.15463	ppb
|>	Rh	103	305221.8		ppb
|	Ag	107	11528.4	0.8157	ppb
|	Ag	109	10517.6	0.75179	ppb
|	Cd	111	1670.6	0.97677	ppb
|-	Cd	114	1911.9	0.46905	ppb
|-	Sb	121	12448.5	-0.06472	ppb
|	Sb	123	9395.1	-0.105	ppb
|	Ba	135	24205.4	12.18576	ppb
|	Ba	137	43332.7	12.55049	ppb
|>	Ho	165	743132.7		ppb
|	Tl	205	553.3	-0.04467	ppb
|-	Pb	208	286406.9	9.79479	ppb
	Kr	83	318.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-2
Sample Date Wednesday, April 27, 2005 17:22:01
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	169424		ppb
|-	Be	9	8.3	-0.02198	ppb
|-	P	31	39359.5	157.9563	ppb
|	Sc	45	648419.9		ppb
|	Cr	52	51678.2	9.54238	ppb
|	Cr	53	7841.9	-16.01669	ppb
|	Mn	55	330230.9	41.48591	ppb
|	Co	59	37944.7	6.21615	ppb
|	Ni	60	14744.1	11.08677	ppb
|	Cu	63	111964.5	37.58404	ppb
|	Cu	65	55446	38.11199	ppb
|	Zn	66	248282.7	286.47952	ppb
|	Zn	67	38214.1	260.53244	ppb
|	Zn	68	185780.1	285.86148	ppb
|	As	75	817.2	0.50553	ppb
|	Se	77	168.7	-12.80989	ppb
|	Se	82	-71.4	-0.82873	ppb
|>	Rh	103	304398.8		ppb
|	Ag	107	12180.6	0.90654	ppb
|	Ag	109	11103.1	0.83723	ppb
|	Cd	111	1611.5	0.94348	ppb
|-	Cd	114	1797.4	0.43878	ppb
|-	Sb	121	11383.6	-0.24861	ppb
|	Sb	123	8829.7	-0.22817	ppb
|	Ba	135	23218.8	11.73274	ppb
|	Ba	137	41254.6	11.98823	ppb
|>	Ho	165	739072.8		ppb
|	Tl	205	506.3	-0.0467	ppb
|-	Pb	208	278754.6	9.58142	ppb
	Kr	83	309.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-4
Sample Date Wednesday, April 27, 2005 17:25:03
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	148857.1		ppb
|-	Be	9	10.7	-0.00765	ppb
|	Sc	45	321211.8		ppb
|	Cr	52	44196.4	8.60107	ppb
|	Cr	53	6686.6	-17.2172	ppb
|	Mn	55	339065.6	45.36132	ppb
|	Co	59	13320.3	2.29201	ppb
|	Ni	60	11190.8	8.92368	ppb
|	Cu	63	91493.8	32.67074	ppb
|	Cu	65	44629.1	32.62642	ppb
|	Zn	66	257813.9	316.93685	ppb
|	Zn	67	39095.5	284.64149	ppb
|	Zn	68	190959.6	313.26591	ppb
|	As	75	418.4	0.17655	ppb
|	Se	77	158.3	-12.80738	ppb
|	Se	82	-57.2	-0.74515	ppb
|>	Rh	103	285959.1		ppb
|	Ag	107	12144.6	1.00618	ppb
|	Ag	109	11202.5	0.9511	ppb
|	Cd	111	2997.3	1.92076	ppb
|-	Cd	114	5670.4	1.60465	ppb
|-	Sb	121	4971.6	-1.37641	ppb
|	Sb	123	3914.4	-1.35042	ppb
|	Ba	135	20954.6	11.19289	ppb
|	Ba	137	36904.3	11.32724	ppb
|>	Ho	165	697925.3		ppb
|	Tl	205	408.7	-0.0501	ppb
|-	Pb	208	262878.9	9.57045	ppb
	Kr	83	217.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-4
Sample Date Wednesday, April 27, 2005 17:28:06
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	145582.4		ppb
|-	Be	9	12571.3	54.89878	ppb
|	Sc	45	314824.5		ppb
|	Cr	52	289219	62.28358	ppb
|	Cr	53	35801.2	35.09606	ppb
|	Mn	55	754007.3	102.40134	ppb
|	Co	59	338392.8	60.22848	ppb
|	Ni	60	84587.9	69.50968	ppb
|	Cu	63	242604.2	88.05478	ppb
|	Cu	65	117565.5	87.49718	ppb
|	Zn	66	294322	367.05014	ppb
|	Zn	67	45674.4	338.75904	ppb
|	Zn	68	218476.8	364.22845	ppb
|	As	75	58038.6	55.00944	ppb
|	Se	77	3801.5	32.02504	ppb
|	Se	82	4752	43.18329	ppb
|>	Rh	103	282148.6		ppb
|	Ag	107	321692.8	45.43704	ppb
|	Ag	109	302390.2	44.6165	ppb
|	Cd	111	74571.4	49.73323	ppb
|-	Cd	114	171069.6	50.66335	ppb
|-	Sb	121	266900.9	50.56279	ppb
|	Sb	123	206506.5	50.84024	ppb
|	Ba	135	97191	54.84271	ppb
|	Ba	137	172084.7	55.84021	ppb
|>	Ho	165	687327.5		ppb
|	Tl	205	1095099.4	54.37845	ppb
|-	Pb	208	1750553.1	65.73708	ppb
	Kr	83	225.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 5025-6
Sample Date Wednesday, April 27, 2005 17:31:08
Sample Desc Air Test Professionals
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	145699.9		ppb
|-	Be	9	13.3	0.0051	ppb
|	Sc	45	476958.1		ppb
|	Cr	52	22900.2	4.10351	ppb
|	Cr	53	3915.9	-21.98996	ppb
|	Mn	55	33651.6	4.44668	ppb
|	Co	59	790.4	0.09165	ppb
|	Ni	60	5452.8	4.34179	ppb
|	Cu	63	8987.6	3.14288	ppb
|	Cu	65	4549.1	3.16284	ppb
|	Zn	66	10307.5	10.51926	ppb
|	Zn	67	1857.8	4.4863	ppb
|	Zn	68	11869.7	14.43372	ppb
|	As	75	694.4	0.44802	ppb
|	Se	77	137.3	-13.0337	ppb
|	Se	82	-70.4	-0.87317	ppb
|>	Rh	103	280740.8		ppb
|	Ag	107	1448.4	-0.50436	ppb
|	Ag	109	1123.7	-0.53582	ppb
|	Cd	111	539.2	0.30776	ppb
|-	Cd	114	28.4	-0.04637	ppb
|-	Sb	121	15557.3	0.74119	ppb
|	Sb	123	11934.2	0.73433	ppb
|	Ba	135	17951.5	9.66458	ppb
|	Ba	137	31984.1	9.90402	ppb
|>	Ho	165	686700.3		ppb
|	Tl	205	407.3	-0.04983	ppb
|-	Pb	208	30466.5	0.96755	ppb
	Kr	83	239		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date Wednesday, April 27, 2005 17:34:11
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	137586.5		ppb
|-	Be	9	17	0.02555	ppb
|-	P	31	5357.4	5.89557	ppb
|	Sc	45	127660.3		ppb
|	Cr	52	4305.7	0.00242	ppb
|	Cr	53	12811.9	-6.40774	ppb
|	Mn	55	1239.4	0.0132	ppb
|	Co	59	309.3	0.00449	ppb
|	Ni	60	198.7	-0.01002	ppb
|	Cu	63	426.3	0.01261	ppb
|	Cu	65	377.7	0.02822	ppb
|	Zn	66	1806.1	-0.25026	ppb
|	Zn	67	992.4	-2.29308	ppb
|	Zn	68	3376.1	-0.12647	ppb
|	As	75	272.2	0.03928	ppb
|	Se	77	858.4	-4.3219	ppb
|	Se	82	40	0.13204	ppb
|>	Rh	103	286154.4		ppb
|	Ag	107	1131.1	-0.55322	ppb
|	Ag	109	1101.7	-0.54231	ppb
|	Cd	111	75.4	-0.00444	ppb
|-	Cd	114	171.4	-0.0047	ppb
|-	Sb	121	760.7	-2.19964	ppb
|	Sb	123	558.6	-2.20211	ppb
|	Ba	135	996.4	-0.0263	ppb
|	Ba	137	1775.8	-0.02515	ppb
|>	Ho	165	700848.7		ppb
|	Tl	205	1304.4	-0.00651	ppb
|-	Pb	208	3828.9	-0.03951	ppb
	Kr	83	80		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date Wednesday, April 27, 2005 17:37:14
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens	Conc. Mean	Report Unit
|>	Li	6	134305.3		ppb
|-	Be	9	20583	97.49114	ppb
|-	P	31	188691.6	917.11756	ppb
|	Sc	45	123422.5		ppb
|	Cr	52	448212.2	98.88602	ppb
|	Cr	53	68499.2	96.03959	ppb
|	Mn	55	699985.6	96.89809	ppb
|	Co	59	564616.2	102.45543	ppb
|	Ni	60	123820.2	103.76499	ppb
|	Cu	63	285202.3	105.52179	ppb
|	Cu	65	138976.2	105.48163	ppb
|	Zn	66	80633.7	100.69445	ppb
|	Zn	67	13859.9	98.01883	ppb
|	Zn	68	61055.8	99.59312	ppb
|	As	75	103834.2	100.4624	ppb
|	Se	77	8866.2	96.39495	ppb
|	Se	82	10267.6	95.34296	ppb
|>	Rh	103	276843.1		ppb
|	Ag	107	691656.1	100.42551	ppb
|	Ag	109	652300.5	98.91187	ppb
|	Cd	111	144894.9	98.53534	ppb
|-	Cd	114	332492.7	100.42416	ppb
|-	Sb	121	489906.9	95.98973	ppb
|	Sb	123	379316.6	96.56719	ppb
|	Ba	135	173647.1	99.69543	ppb
|	Ba	137	306421.7	101.18028	ppb
|>	Ho	165	678762.7		ppb
|	Tl	205	2045768.2	102.92263	ppb
|-	Pb	208	2806408.5	106.83497	ppb
	Kr	83	109.7		ppb

Sample_ID	Sam_Date	Sam_Time	Mean_Sig	Mean_ST	Mean_SA	Units	Wt	Dilu	Sig 1	Std_U 1	Smp_U 1	Sig 2	Std_U 2	Smp_U 2
Calib Blank	4/28/2005	11:51:28	0.0027957			µg			0.0027957					
STD1=.004ug	4/28/2005	11:52:31	0.00088695			µg			0.00088695					
STD2=.04ug	4/28/2005	11:53:34	0.0089693			µg			0.0089693					
STD3=.08ug	4/28/2005	11:54:40	0.01892292			µg			0.01892292					
STD4=.12ug	4/28/2005	11:55:46	0.0278251			µg			0.0278251					
STD5=.16ug	4/28/2005	11:56:53	0.03692484			µg			0.03692484					
STD6=.2ug	4/28/2005	11:58:01	0.0455162			µg			0.0455162					
Reagent Blank	4/28/2005	11:59:37	0.00006637	0.00029396	0.00029396	µg			0.00018154	0.00080407	0.00080407	-0.0000487	-0.0002161	-0.0002161
0.004 = DL	4/28/2005	12:04:02	0.00083476	0.00369569	0.00369569	µg			0.00083476	0.00369569	0.00369569			
0.080 = QC STD 2	4/28/2005	12:05:09	0.01819567	0.07973295	0.07973295	µg			0.01819567	0.07973295	0.07973295			
0.080 = QC STD 3	4/28/2005	12:06:16	0.01918385	0.08401424	0.08401424	µg			0.01918385	0.08401424	0.08401424			
REAGENT BLANK	4/28/2005	12:07:20	0.0001008	0.0004465	0.0004465	µg			0.0001008	0.0004465	0.0004465			
0.004 = DL	4/28/2005	12:25:27	0.00088292	0.0039088	0.0039088	µg	4	500	0.00088292	0.0039088	0.0039088			
0.080 = QC STD 2	4/28/2005	12:26:34	0.01800944	0.07892556	0.07892556	µg	4	500	0.01800944	0.07892556	0.07892556			
REAGENT BLANK	4/28/2005	12:27:38	0.00012063	0.00053429	0.00053429	µg	4	500	0.00012063	0.00053429	0.00053429			
5025-A-1	4/28/2005	12:38:40	0.00018726	0.00082936	0.04146808	µg	4	200	0.00027556	0.00122042	0.061021	0.00009895	0.0004383	0.02191516
5025-A-2/3	4/28/2005	12:40:16	0.00006487	0.00028733	0.01436674	µg	4	200	0.0000283	0.00012539	0.00626958	0.00010143	0.00044927	0.0224639
5025-A-4	4/28/2005	12:41:54	-0.000008	-0.0000355	-0.0017765	µg	4	200	-0.0000156	-0.0000691	-0.0034592	-0.0000004	-0.0000018	-0.0000937
5025-A-5-SPK	4/28/2005	12:43:31	0.01844641	0.08081976	4.04098839	µg	4	200	0.01845019	0.08083614	4.04180732	0.01844263	0.08080338	4.04016947
0.004 = DL	4/28/2005	12:45:46	0.00089887	0.0039794	0.0039794	µg	4	200	0.00089887	0.0039794	0.0039794			
0.080 = QC STD 2	4/28/2005	12:46:53	0.01839917	0.08061502	0.08061502	µg	4	200	0.01839917	0.08061502	0.08061502			
REAGENT BLANK	4/28/2005	12:47:57	0.00007547	0.00033431	0.00033431	µg	4	200	0.00007547	0.00033431	0.00033431			
5025-A-6	4/28/2005	12:49:33	0.0000531	0.00023523	0.01176168	µg	4	200	0.00005161	0.00022859	0.0114299	0.0000546	0.00024186	0.01209346
5025-B-1	4/28/2005	12:51:10	0.00643973	0.02841546	3.55193296	µg	4	500	0.00639522	0.0282198	3.52747591	0.00648424	0.02861112	3.57639002
5025-B-2/3	4/28/2005	12:52:50	0.00931505	0.0410329	5.12911297	µg	4	500	0.00927939	0.04087672	5.10959108	0.0093507	0.04118907	5.14863485
5025-B-4	4/28/2005	12:54:25	0.01416465	0.06221683	7.7771046	µg	4	500	0.01418946	0.0623249	7.79061337	0.01413984	0.06210876	7.76359583
5025-B-5-SPK	4/28/2005	12:55:57	0.03117714	0.13558086	16.9476077	µg	4	500	0.03107378	0.13513956	16.8924459	0.0312805	0.13602215	17.0027695
5025-B-6	4/28/2005	12:57:29	0.00029059	0.00128684	0.12868498	µg	4	400	0.000464	0.00205472	0.20547202	0.00011717	0.00051897	0.05189794
5025-BH-1	4/28/2005	12:59:02	0.02592464	0.11308622	8.48146664	µg	4	300	0.02570962	0.11216254	8.4121907	0.02613966	0.1140099	8.55074258
5025-BH-2/3	4/28/2005	13:00:35	0.02360066	0.10308932	7.98942241	µg	4	310	0.02367091	0.10339194	8.01287576	0.02353041	0.10278669	7.96596905
5025-BH-4	4/28/2005	13:02:10	0.01311764	0.05765358	4.61228666	µg	4	320	0.01311414	0.05763832	4.6110656	0.01312114	0.05766884	4.61350773
5025-BH-5-SPK	4/28/2005	13:03:44	0.03142129	0.13662304	10.9298435	µg	4	320	0.03124059	0.13585174	10.8681399	0.031602	0.13739433	10.9915471
0.004 = DL	4/28/2005	13:05:58	0.00091281	0.00404106	0.00404106	µg	4	320	0.00091281	0.00404106	0.00404106			
0.080 = QC STD 2	4/28/2005	13:07:05	0.018561	0.08131632	0.08131632	µg	4	320	0.018561	0.08131632	0.08131632			
REAGENT BLANK	4/28/2005	13:08:09	0.00017973	0.00079603	0.00079603	µg	4	320	0.00017973	0.00079603	0.00079603			
5025-BH-6	4/28/2005	13:09:43	-0.0000407	-0.0001804	-0.0135334	µg	4	300	-0.0000352	-0.0001563	-0.0117248	-0.0000461	-0.0002045	-0.0153421
0.004 = DL	4/28/2005	13:26:27	0.00095026	0.00420676	0.00420676	µg	4	500	0.00095026	0.00420676	0.00420676			
0.080 = QC STD 2	4/28/2005	13:27:34	0.01870361	0.08193424	0.08193424	µg	4	500	0.01870361	0.08193424	0.08193424			
REAGENT BLANK	4/28/2005	13:28:38	0.00017892	0.00079246	0.00079246	µg	4	500	0.00017892	0.00079246	0.00079246			
0.004 = DL	4/28/2005	14:41:32	0.00094513	0.00418406	0.00418406	µg	4	700	0.00094513	0.00418406	0.00418406			
0.080 = QC STD 3	4/28/2005	14:42:39	0.01914398	0.08384159	0.08384159	µg	4	700	0.01914398	0.08384159	0.08384159			
REAGENT BLANK	4/28/2005	14:43:44	0.00025959	0.00114968	0.00114968	µg	4	700	0.00025959	0.00114968	0.00114968			
Calib Blank	4/28/2005	15:30:36	0.00315633			µg			0.00315633					

Sample_ID	Sam_Date	Sam_Time	Mean_Sig	Mean_ST	Mean_SA	Units	Wt	Dilu	Sig 1	Std_U 1	Smp_U 1	Sig 2	Std_U 2	Smp_U 2
STD1=.004ug	4/28/2005	15:31:40	0.00110669			µg			0.00110669					
STD2=.04ug	4/28/2005	15:32:44	0.01024893			µg			0.01024893					
STD3=.08ug	4/28/2005	15:33:49	0.02107251			µg			0.02107251					
STD4=.12ug	4/28/2005	15:34:55	0.03059855			µg			0.03059855					
STD5=.16ug	4/28/2005	15:36:02	0.04119103			µg			0.04119103					
STD6=.2ug	4/28/2005	15:37:10	0.05061039			µg			0.05061039					
Reagent Blank	4/28/2005	15:38:46	0.00037005	0.00137381	0.00137381	µg			0.0006621	0.00245827	0.00245827	0.00007799	0.00028936	0.00028936
0.004 = DL	4/28/2005	15:42:25	0.00110223	0.00409474	0.00409474	µg			0.00110223	0.00409474	0.00409474			
0.080 = QC STD 2	4/28/2005	15:43:31	0.02159506	0.08245496	0.08245496	µg			0.02159506	0.08245496	0.08245496			
0.080 = QC STD 3	4/28/2005	15:44:37	0.02113913	0.08066424	0.08066424	µg			0.02113913	0.08066424	0.08066424			
REAGENT BLANK	4/28/2005	15:45:41	0.00043178	0.00160263	0.00160263	µg			0.00043178	0.00160263	0.00160263			
5025/5031-FH-BLK	4/28/2005	15:47:14	0.00018098	0.00067154	0.01678865	µg	4	100	0.00016452	0.00061044	0.01526112	0.00019745	0.00073264	0.01831618
5025/5031-FH-BLK-S	4/28/2005	15:48:47	0.01905613	0.07251101	4.53193813	µg	1.6	100	0.01898927	0.07225007	4.51562971	0.01912298	0.07277194	4.54824655
5025-FH-2/3	4/28/2005	15:51:57	0.00067335	0.00250005	0.06250145	µg	4	100	0.00067386	0.00251309	0.06282736	0.00066984	0.00248702	0.06217554
5025-FH-4	4/28/2005	15:53:34	0.00013547	0.00050263	0.01256578	µg	4	100	0.00015505	0.0005753	0.01438272	0.00011588	0.00042995	0.01074885
5025-FH-5-SPK	4/28/2005	15:55:11	0.02347405	0.08985846	2.24646173	µg	4	100	0.02339446	0.08954408	2.23860209	0.02355363	0.09017285	2.25432136
5025/5031-FH-6	4/28/2005	15:56:49	0.00067602	0.00251008	0.06275211	µg	4	100	0.00081606	0.0030305	0.0757625	0.00053598	0.00198966	0.04974172
0.004 = DL	4/28/2005	16:02:42	0.00113023	0.00419891	0.00419891	µg	4	100	0.00113023	0.00419891	0.00419891			
0.080 = QC STD 2	4/28/2005	16:03:50	0.02169196	0.08283586	0.08283586	µg	4	100	0.02169196	0.08283586	0.08283586			
REAGENT BLANK	4/28/2005	16:04:54	0.00041923	0.00155603	0.00155603	µg	4	100	0.00041923	0.00155603	0.00155603			
Calib Blank	4/28/2005	17:17:54	0.0033103			µg	4	200	0.0033103					
STD1=.004ug	4/28/2005	17:18:57	0.00098543			µg	4	200	0.00098543					
STD2=.04ug	4/28/2005	17:20:02	0.01046968			µg	4	200	0.01046968					
STD3=.08ug	4/28/2005	17:21:07	0.02137058			µg	4	200	0.02137058					
STD4=.12ug	4/28/2005	17:22:13	0.03152574			µg	4	200	0.03152574					
STD5=.16ug	4/28/2005	17:23:20	0.04216271			µg	4	200	0.04216271					
STD6=.2ug	4/28/2005	17:24:28	0.05159739			µg	4	200	0.05159739					
Reagent Blank	4/28/2005	17:29:02	0.00047997	0.00187354	0.00187354	µg	4	200	0.00097793	0.00381736	0.00381736	-0.0000179	-0.0000702	-0.0000702
0.004 = DL	4/28/2005	17:30:07	0.00099915	0.00390014	0.00390014	µg	4	200	0.00099915	0.00390014	0.00390014			
0.080 = QC STD 2	4/28/2005	17:31:14	0.02166576	0.08354377	0.08354377	µg	4	200	0.02166576	0.08354377	0.08354377			
0.080 = QC STD 3	4/28/2005	17:32:21	0.02162116	0.08337398	0.08337398	µg	4	200	0.02162116	0.08337398	0.08337398			
REAGENT BLANK	4/28/2005	17:33:25	0.00047467	0.00185343	0.00185343	µg	4	200	0.00047467	0.00185343	0.00185343			
5025-FH-1	4/28/2005	17:34:59	0.00068333	0.00266783	0.06669579	µg	4	100	0.00079048	0.00308598	0.07714973	0.00057618	0.00224967	0.05624184
0.004 = DL	4/28/2005	17:50:33	0.00096775	0.00377764	0.00377764	µg	4	200	0.00096775	0.00377764	0.00377764			
0.080 = QC STD 2	4/28/2005	17:51:40	0.02139496	0.0825127	0.0825127	µg	4	200	0.02139496	0.0825127	0.0825127			
REAGENT BLANK	4/28/2005	17:52:44	0.00044525	0.0017386	0.0017386	µg	4	200	0.00044525	0.0017386	0.0017386			

ATP - Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, Indiana 46219

Phone (317) 345-1723
Fax (317) 351-0411
Email: atp_stack@sbcglobal.net

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF Baghouse #2
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 128

SAMPLE NO	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV	No. OF CONTAINERS	EPA METHOD 202							REMARKS / PRECAUTIONS
															LAB JOB NO.
Run 1	MeCl2 Rinse	04/18/05		AQ	4 oz		1	X							
Run 2	MeCl2 Rinse	04/19/05		AQ	4 oz		1	X							
Run 3	MeCl2 Rinse	04/22/05		AQ	4 oz		1	X							
Run 1	DI H2O Rinse	04/18/05		AQ	500 ml		1	X							** Perform Sulfate Correction
Run 2	DI H2O Rinse	04/19/05		AQ	500 ml		1	X							
Run 3	DI H2O Rinse	04/22/05		AQ	500 ml		1	X							
BLANK	Common - MeCl2			AQ	4 oz		1	X							← USE COMMON
BLANK	Common - DI H2O			AQ	500 ml		1	X							BLANKS - ISSUE

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

SEPARATE REPORTS..

REQUIRED TURNAROUND: *

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	04/27/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY: Craig Mell	DATE 4/28/05
SIGNATURE:		SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY Bartleby	TIME 9:30

T = 15.8°C

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Indianapolis, Indiana 46219

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Fax (317) 351-0411
Email: atp_stack@sbcglobal.net

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF #2
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 127

LAB JOB NO. 5025

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	No. of Containers	EPA Method 29							REMARKS/PRECAUTIONS
Run 1	Container #1 - Filter	04/18/05		Filter	Petri		1	X							
Run 1	Container #3 - 0.1N HNO3	04/18/05		AQ	500 ml		1	X							* Analyze for 16-Metals + Mercury
Run 1	Container #4 - HNO3/H2O2	04/18/05		AQ	500 ml		1	X							
Run 1	Container #5A - 0.1N HNO3	04/18/05		AQ	500 ml		1	X							
Run 2	Container #1 - Filter	04/18/05		Filter	Petri		1	X							
Run 2	Container #3 - 0.1N HNO3	04/18/05		AQ	500 ml		1	X							
Run 2	Container #4 - HNO3/H2O2	04/18/05		AQ	500 ml		1	X							
Run 2	Container #5A - 0.1N HNO3	04/18/05		AQ	500 ml		1	X							

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND: *

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	04/19/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE 04/21/05	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE: Smith		SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ELEMENT ONE INC	TIME 1615	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME

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Indianapolis, Indiana 46219

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Fax (317) 351-0411
Email: atp_stack@sbcglobal.net

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF #2
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 127

LAB JOB NO. 5025

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER SIZE	PRESERV.	NO. OF CONTAINERS	EPA Method 29							REMARKS/PRECAUTIONS
Run 1	Container #5B - KMnO4	04/19/05		AQ	1000 ml		1	X							* Analyze for 16-Metals + Mercury
Run 2	Container #5B - KMnO4	04/19/05		AQ	1000 ml		1	X							
Run 3 #3-	Container #5B - KMnO4	04/19/05		AQ	1000 ml		1	X							
BLANK	Container #10 - KMnO4	04/19/05		AQ	500 ml		1	X							

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND:

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	04/19/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE 4/22/05	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:		SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Element One Inc via ABE/DHL	TIME 1145	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME

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Indianapolis, Indiana 46219

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CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF #2
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 127

LAB JOB NO. 5025

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	No. OF CONTAINERS	EPA METHOD 29							REMARKS / PRECAUTIONS
Run 3	Container #1 - Filter	04/19/05		Filter	Petri		1	X							
Run 3	Container #3 - 0.1N HNO3	04/19/05		AQ	500 ml		1	X							* Analyze for 16 - Metals + Mercury
Run 3	Container #4 - HNO3/H2O2	04/19/05		AQ	500 ml		1	X							
Run 3	Container #5A - 0.1N HNO3	04/19/05		AQ	500 ml		1	X							
BLANK	Container #8A - 0.1N HNO3	04/19/05		AQ	500 ml		1	X							
BLANK	Container #8B - HPLC H2O	04/19/05		AQ	500 ml		1	X							
BLANK	Container #9 - HNO3/H2O2	04/19/05		AQ	500 ml		1	X							
BLANK	Container #12 - Filter	04/19/05		Filter	Petri		1	X							

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND:

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	04/19/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:	4/21/05	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Element One Inc	TIME 1615	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME

CALIBRATION CHECK

(Post Test) per EMTIC Guideline GD-26

Company: Nucor Steel
Date: 4/18/05, 4/19/05, 4/22/05
Source: PPFF Baghouse #2
Location: Crawfordsville, Indiana

	Run 1	Run 2	Run 3	Average
Y qa =	1.027	1.027	1.026	1.027

Average result must be within 5% of Y

Result (%) 3.66

PASSED POST CAL

Dry Gas Meter Box:

ID: A-1
Y: 0.99
Delta H: 1.72

Run 1	Volume	Delta H	DGM Inlet	DGM Outlet
1		1.82	98	98
2		1.98	94	95
3		2.31	95	94
4		1.82	95	94
5		1.49	92	91
6		1.49	94	91
7		1.82	92	91
8		1.32	94	92
9		0.83	92	92
10		2.31	92	92
11		1.32	92	90
12		1.32	94	91
13		3.30	94	92
14		2.48	96	93
15		1.65	96	94
16		4.29	92	91
17		4.29	94	92
18		3.96	94	92
19		4.79	94	92
20		4.46	94	92
21		4.29	96	93
22		4.62	96	94
23	1117.533	4.62	98	95
24	844.2	4.95	97	95
25		5.45	96	95

Volume	Delta H	Meter Temp
273.333	2.917	93.6

Barometric Pressure
30.15

Test Time
287.50

Y qa:	1.027

Run 2	Volume	Delta H	DGM Inlet	DGM Outlet
1		3.51	87	86
2		4.68	87	86
3		5.51	87	86
4		2.67	89	88
5		4.34	92	90
6		5.01	96	93
7		3.34	99	96
8		4.51	100	98
9		4.18	83	82
10		2.84	84	84
11		3.84	87	84
12		4.51	87	84
13		3.17	87	85
14		4.68	88	86
15		4.51	87	86
16		2.34	84	84
17		2.17	86	84
18		1.50	85	84
19		1.34	86	85
20		1.34	87	85
21		1.34	87	85
22		1.34	86	86
23	398.785	1.17	86	85
24	119.911	1.50	86	85
25		1.50	86	85

Volume	Delta H	Meter Temp
278.874	3.073	87.2

Barometric Pressure
30.15

Test Time
287.50

Y qa:	1.027

Run 3	Volume	Delta H	DGM Inlet	DGM Outlet
1		2.15	58	57
2		2.15	60	58
3		1.98	63	59
4		1.49	64	61
5		1.32	65	61
6		1.32	67	63
7		1.65	69	64
8		1.16	72	67
9		0.99	74	69
10		1.16	75	71
11		1.16	76	72
12		1.32	77	73
13		1.32	76	75
14		2.81	77	75
15		2.31	77	75
16		3.96	77	75
17		4.29	79	76
18		4.46	79	76
19		5.12	79	77
20		5.61	79	77
21		4.62	78	77
22		4.95	80	77
23	670.85	5.45	81	78
24	399.318	5.61	83	79
25		5.61	84	80

Volume	Delta H	Meter Temp
271.529	2.957	72.4

Barometric Pressure
29.87

Test Time
287.50

Y qa:	1.026

CALIBRATION CHECK

(Post Test) per EMTIC Guideline GD-26

Company: Nucor Steel
Date: 4/18/05, 4/19/05
Source: PPFF Baghouse #2 - Metals/VOC
Location: Crawfordsville, Indiana

	Run 1	Run 2	Run 3	Average
Y qa =	0.978	1.002	1.003	0.995

Average result must be within 5% of Y

Result (%) 0.45

PASSED POST CAL

Dry Gas Meter Box:

ID: A-2
Y: 0.99
Delta H: 1.83

Run 1	Volume	Delta H	DGM Inlet	DGM Outlet
1		2.62	96	96
2		2.62	95	95
3		2.62	93	93
4		2.62	93	94
5		2.62	94	94
6		2.46	95	93
7		2.30	95	93
8		2.30	94	93
9		2.13	94	93
10		2.05	94	93
11		2.05	95	93
12		2.30	94	93
13		1.80	93	93
14		2.46	93	93
15		2.46	93	93
16		1.23	93	92
17		1.31	93	92
18		0.82	93	92
19		0.82	93	92
20		0.66	92	91
21		0.49	92	91
22		0.98	92	91
23	852.265	0.98	93	91
24	758	0.74	93	91
25		0.74	93	92

Volume	Delta H	Meter Temp
94.265	1.768	93.1

Barometric Pressure	Test Time
30.15	125.00

Y qa: 0.978

Run 2	Volume	Delta H	DGM Inlet	DGM Outlet
1		1.31	89	89
2		1.39	89	89
3		1.39	89	89
4		0.98	89	89
5		0.98	90	89
6		0.98	90	89
7		0.98	90	89
8		0.57	91	89
9		0.57	91	89
10		0.90	91	89
11		0.74	92	90
12		0.74	92	90
13		1.31	93	91
14		1.15	93	91
15		1.15	94	91
16		1.89	95	92
17		2.46	97	93
18		2.46	97	93
19		2.46	97	94
20		2.40	97	93
21		2.40	97	93
22		2.40	98	94
23	938.69	2.40	98	94
24	852.71	2.40	98	94
25		2.21	98	94

Volume	Delta H	Meter Temp
85.98	1.546	92.2

Barometric Pressure	Test Time
30.15	125.00

Y qa: 1.002

Run 3	Volume	Delta H	DGM Inlet	DGM Outlet
1		1.91	92	90
2		1.91	92	90
3		1.83	93	91
4		1.99	95	91
5		1.99	97	93
6		2.08	99	95
7		2.24	99	96
8		2.32	102	98
9		2.32	103	98
10		2.49	104	100
11		2.49	107	102
12		2.49	107	102
13		1.83	108	103
14		1.66	95	95
15		1.66	96	95
16		1.08	94	93
17		0.83	94	93
18		0.85	94	93
19		0.94	95	93
20		0.68	94	93
21		0.68	94	93
22		0.85	94	93
23	1027.05	0.85	94	93
24	939.3	0.85	95	94
25		0.85	96	93

Volume	Delta H	Meter Temp
87.75	1.587	96.1

Barometric Pressure	Test Time
29.87	125.00

Y qa: 1.003

APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: Orifice Calibration

Serial #: **A1**

Date: ----------> 01/31/05
Barometric Pressure: ----> 30.4 in Hg
Critical Orifice Vacuum:-> 19 in Hg

IMPORTANT!!! For valid test results, the Critical Orifice Vacuum must be equal to or higher than the value shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS						
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	-- Ambient Temperature --				
dH	Time	Initial	Final	Total	Inlet	Outlet	Inlet	Outlet	Serial#	Coefficient	Vacuum	Initial		Final	Average
(in H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(In Hg)	(deg F)		(deg F)	(deg F)
0.38	14.20	396	401	5	68	68	69	68	**AT-15**	**0.269**	19	70		70	70
0.38	14.20	401	406	5	69	68	70	68	**AT-15**	**0.269**	19	70		70	70
0.38	14.20	406	411	5	70	68	71	69	**AT-15**	**0.269**	19	70		70	70

********** RESULTS **********

--- DRY GAS METER ---		----- ORIFICE -----		-- DRY GAS METER --		--------- ORIFICE ---------			
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME ORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	CALIBRATION FACTOR Y Value (number)	Variation (number)	CALIBRATION FACTOR dH@ Value (in H2O)	Value (mm H2O)	Variation (In H2O)	
5.08044375	143.878	5.04401388	142.84647	0.9928294	-0.0011	1.724942094	43.813529	0.00434	
5.07563955	143.742	5.04401388	142.84647	0.9937691	-0.00016	1.721681334	43.730706	0.001079	
5.06845026	143.539	5.04401388	142.84647	0.9951787	0.001253	1.715183278	43.565655	-0.00542	
		Average Y ------->		**0.994**		**1.721**	43.703297	<------- Average dH@	

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

Calibrated by: Carlos Brown Date: January 31, 2005

APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: Orifice Calibration

Serial #: **A2**

Date: ----------> 01/31/05
Barometric Pressure: ----> 30.4 In Hg
Critical Orifice Vacuum:-> 20 in Hg

IMPORTANT!!! For valid test results, the Critical Orifice Vacuum must be equal to or higher than the value shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((In.Hg)*(min)).

---------- DRY GAS METER READINGS ----------

CRITICAL ORIFICE READINGS

dH (In H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Vacuum (In Hg)	Ambient Temperature -- Initial (deg F)	Final (deg F)	Average (deg F)
0.39	14.35	368	373	5	69	69	70	70	**AT-15**	**0.264**	20	70	70	70
0.39	14.35	373	378	5	70	70	71	70	**AT-15**	**0.264**	20	70	70	70
0.39	14.35	378	383	5	71	70	72	70	**AT-15**	**0.264**	20	70	70	70

********** RESULTS **********

--- DRY GAS METER ---

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME ORRECTED Vm(std) (liters)
5.06857274	143.542
5.06140361	143.339
5.05663545	143.204

----- ORIFICE -----

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
4.99307592	141.40391
4.99307592	141.40391
4.99307592	141.40391

-- DRY GAS METER --

CALIBRATION FACTOR Y

Value (number)	Variation (number)
0.9851049	-0.00124
0.9865002	0.000155
0.9874305	0.001085

Average Y -------> **0.99**

--------- ORIFICE ---------

CALIBRATION FACTOR dH@

Value (in H2O)	Value (mm H2O)	Variation (in H2O)
1.831196214	46.512384	0.005745
1.82429703	46.337145	-0.00115
1.820861443	46.249881	-0.00459

1.825 46.36647 <------- Average dH@

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

Calibrated by: Carlos Brown Date: January 31, 2005

ATP - Air Test Professionals, Inc.

Pitot Tube Calibration

Reference: 40 CFR 60, Appendix A, Method 2, Section 2.1

Probe Length/ID.: **14 ft. Type-S**

External Tubing Diameter: 0.375" inches

Base to Opening Plane Distance (Pa): 0.46" inches

Base to Opening Plane Distance (Pa): 0.46" inches

	Measured	Allowable
Pa/Dt	1.23"	1.05 – 1.50 inches
Pb/Dt	1.23"	1.05 – 1.50 inches
Angle α 1	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle α 2	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle β 1	1 deg	$\beta 1$ and $\beta 2 \leq 10.0$
Angle β 2	1 deg	$\beta 1$ and $\beta 2 \leq 10.0$
z (inches)	0.0"	0.125 inches
w (inches)	0.0"	0.031 inches
	If all criteria are met, Pitot Coefficient is 0.84	Pitot Coefficient: **0.84**

Calibrated By: Carlos Brown Date Calibrated: January 14, 2005

ATP - Air Test Professionals, Inc.

Pitot Tube Calibration

Reference: 40 CFR 60, Appendix A, Method 2, Section 2.1

Probe Length/ID.: **12 ft. Type-S**

External Tubing Diameter: 0.375" inches

Base to Opening Plane Distance (Pa): 0.470" inches

Base to Opening Plane Distance (Pa): 0.470" inches

	Measured	Allowable
Pa/Dt	1.25"	1.05 – 1.50 inches
Pb/Dt	1.25"	1.05 – 1.50 inches
Angle α 1	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle α 2	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle β 1	0 deg	$\beta 1$ and $\beta 2 \leq 10.0$
Angle β 2	0 deg	$\beta 1$ and $\beta 2 \leq 10.0$
z (inches)	0.0"	0.125 inches
w (inches)	0.0"	0.031 inches
	If all criteria are met, Pitot Coefficient is 0.84	Pitot Coefficient: **0.84**

Calibrated By: Carlos Brown Date Calibrated: January 14, 2005

ATP - Air Test Professionals, Inc.

Thermocouple Calibration

Probe Length/ID: **14 ft. Type-S** Dry Gas Meter ID: A-1

Standard Used: Mercury Thermometer Temperature Scale: Degrees F

Temperature Range	Mercury Thermometer	Probe Thermometer
Hot Bath	510 deg	510 deg
Room Temperature	72 deg	72 deg
Ice Bath	33 deg	34 deg

Calibrated By: Carlos Brown Date Calibrated: January 14, 2005

ATP - Air Test Professionals, Inc.

Thermocouple Calibration

Probe Length/ID: **12 ft. Type-S** Dry Gas Meter ID: A-1

Standard Used: Mercury Thermometer Temperature Scale: Degrees F

Temperature Range	Mercury Thermometer	Probe Thermometer
Hot Bath	505 deg	505 deg
Room Temperature	72 deg	72 deg
Ice Bath	33 deg	33 deg

Calibrated By: Carlos Brown Date Calibrated: January 14, 2005

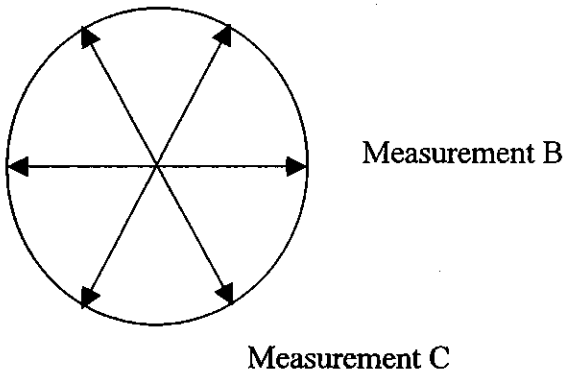
ATP - AIR TEST PROFESSIONALS, INC.

Nozzle Calibration

Nozzle Type: Stainless Steel

NOZZLE DIAMETER MEASUREMENT

A = 0.371 inches
B = 0.371 inches
C = 0.371 inches



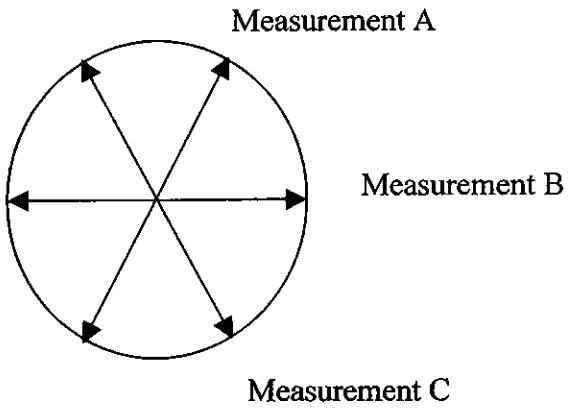
Calibrated by: Andrew Young Date Calibrated: April 18, 2005

ATP - AIR TEST PROFESSIONALS, INC.
Nozzle Calibration

Nozzle Type: Glass

NOZZLE DIAMETER MEASUREMENT

A = 0.3125 inches
B = 0.3125 inches
C = 0.3125 inches



Calibrated by: Andrew Young Date Calibrated: April 18, 2005

AGA
Member of the Linde Gas Group

Linde

IE MONITORING INSTRUMENTS (800) 532-7474
www.iemlinc.com

B160079B

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:
AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:
AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	6601 EPA C3H8/ZERO AIR1-99 PPM	**Blend Tolerance:**	5 % Relative
Production #:	100053784	**Store/Use Temp:**	35 to 90 F
Batch #:	02499G2070UA	**Blend Type:**	EPA Protocol
Cylinder #:	CC148249	**Cyl. Pressure:**	2000 psig
Expiration Date:	7/15/2005	**Balance Gas:**	Air
Shelf Life:	36 months	**CGA:**	590
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	29	29.6 +/- 0.3 ppm	07/15/2002
132259-10-0	Air		Balance	07/15/2002

CAS #	Analyzed (For Ref Use Only)	Concentration	Analysis Date
7782-44-7	Oxygen	21 %	07/15/2002

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
74-98-6	Propane	CC100800 , GMIS	101.5 ppm	12/31/2003
74-98-6	Propane	CC92031 , GMIS	10.04 ppm	12/31/2003
7782-44-7	Oxygen	AGAC142674 , LS	21.11 %	09/01/2006

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	06/30/2002
Rosemount 755R	1000559	Paramagnetic	06/27/2002

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Roy Yoder

Roy Yoder

HiQ Analysis Certificate

AGA
Member of the Linde Gas Group

Linde

IEI MONITORING INSTRUMENTS (800) 532-7474
www.iemiinc.com

B160788

Certificate of Analysis
EPA Protocol
Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:
AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:
AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	6601 EPA C3H8/ZERO AIR1-99 PPM	**Blend Tolerance:**	5 % Relative
Production #:	100053785	**Store/Use Temp:**	35 to 90 F
Batch #:	02499G2070SB1	**Blend Type:**	EPA Protocol
Cylinder #:	CC148384	**Cyl. Pressure:**	2000 psig
Expiration Date:	7/15/2005	**Balance Gas:**	Air
Shelf Life:	36 months	**CGA:**	590
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	49	48.6 +/- 0.5 ppm	07/15/2002
132259-10-0	Air		Balance	07/15/2002

CAS #	Analyzed (For Ref Use Only)	Concentration	Analysis Date
7782-44-7	Oxygen	21 %	07/15/2002

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73286 , NTRM	20.89 %	09/01/2002

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	06/30/2002
Rosemount 755R	1000559	Paramagnetic	06/27/2002

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Roy Yoder

Roy Yoder

HiQ Analysis Certificate

AGA
Member of the Linde Gas Group

Linde

IE MONITORING INSTRUMENTS (800) 532-7474
www.iemiinc.com

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

B160778

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

AGA Gas, Inc.
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

AGA COLUMBUS INTERBRANCH
450 GREENLAWN AVE
COLUMBUS OH 43223
USA
614-443-7487

Material:	6601 EPA C3H8/ZERO AIR1-99 PPM	**Blend Tolerance:**	5 % Relative
Production #:	100053786	**Store/Use Temp:**	35 to 90 F
Batch #:	02499G2070SC1	**Blend Type:**	EPA Protocol
Cylinder #:	CC148354	**Cyl. Pressure:**	2000 psig
Expiration Date:	7/15/2005	**Balance Gas:**	Air
Shelf Life:	36 months	**CGA:**	590
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
74-98-6	Propane	81	77.0 +/- 0.8 ppm	07/15/2002
132259-10-0	Air		Balance	07/15/2002

CAS #	Analyzed (For Ref Use Only)	Concentration	Analysis Date
7782-44-7	Oxygen	21 %	07/15/2002

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73286 , NTRM	20.89 %	09/01/2002
74-98-6	Propane	CC100800 , GMIS	101.5 ppm	12/31/2003
74-98-6	Propane	CC92031 , GMIS	10.04 ppm	12/31/2003

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba FIA-510	56847471	Flame Ionization	06/30/2002
Rosemount 755R	1000559	Paramagnetic	06/27/2002

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

nalytical report approved by Roy Yoder

Roy Yoder

HiQ Analysis Certificate

CARL KOONTZ ASSOCIATES

of Nashville, Tennessee

This is to acknowledge that

CARLOS BROWN

successfully participated in Visible Emissions training on MAR 2 4 2005 and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.

Carl Koontz

Instructor

CARL KOONTZ ASSOCIATES

of Nashville, Tennessee

This is to acknowledge that

RONALD STAPERT

successfully participated in Visible Emissions training on MAR 2 4 2005

and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.

Carl Koontz

Instructor

Visible Emissions Observations Form

RUN NUMBER 1

SOURCE NAME	NUCOR STEEL
OBSERVATION DATE	4-18-05
START TIME	12:47
STOP TIME	2:15
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	EAF & AOD
PROCESS EQUIPMENT	BAG HOUSE #2
OPERATING MODE	
CONTROL EQUIPMENT	
OPERATING MODE	
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	25' X 25' STACK
HEIGHT ABOVE GROUND LEVEL START	170' STOP
HEIGHT RELATIVE TO OBSERVER START	130' STOP
DISTANCE FROM OBSERVER START	1100 STOP ✓
DIRECTION FROM OBSERVER START	60° STOP ✓
DESCRIBE EMISSIONS START	CLEAR STOP ✓
EMISSION COLOR START	CLEAR STOP ✓
PLUME TYPE:	(CONTINUOUS) FUGITIVE INTERMITTENT
WATER DROPLETS PRESENT	(NO) YES ✓
IF WATER DROPLET PLUME:	ATTACHED (DETACHED)
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	20' STOP ✓
DESCRIBE BACKGROUND START	LIGHT BLUE STOP ✓
BACKGROUND COLOR START	LIGHT BLUE STOP ✓
SKY CONDITIONS START	MOSTLY SUNNY STOP
WIND SPEED (MPH) START	5-10 STOP ✓
WIND DIRECTION START	NW STOP ✓
AMBIENT TEMPERATURE (F) START	70° STOP 72°
WET BULB (F)	HUMIDITY (%)

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
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19	0	0	0	0	49				
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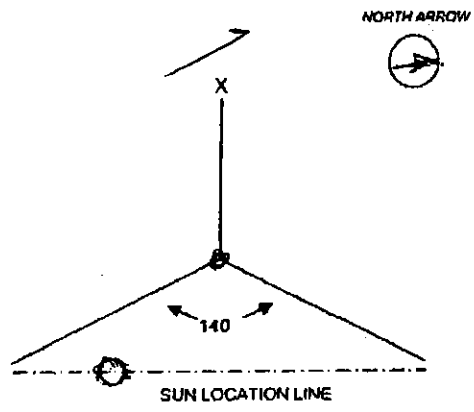
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
• = Observer's Position = Plume
☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS
MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT)
RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert DATE 4-18-05

ORGANIZATION
Air Test Professionals, Inc. (ATP)

CERTIFIED BY DATE 3-24-05
Carl Koontz Associates

Comments:

BAG HOUSE #2

2 HR.

Visible Emissions Observations Form

RUN NUMBER 1

SOURCE NAME: NUCOR STEEL	OBSERVATION DATE: 4 18 - 05	START TIME: 2:15	STOP TIME: 2:45
ADDRESS:			
CITY: CRAWFORDSVILLE / STATE: IN / ZIP:			
PHONE / SOURCE ID NUMBER: EAF & AOD			
PROCESS EQUIPMENT: BAG HOUSE #2 / OPERATING MODE:			
CONTROL EQUIPMENT / OPERATING MODE:			
DESCRIBE EMISSION POINT (Stack Exit Dimensions): 25'X25' STACK			
HEIGHT ABOVE GROUND LEVEL: START 170' STOP ✓ / HEIGHT RELATIVE TO OBSERVER: START 130' STOP ✓			
DISTANCE FROM OBSERVER: START 1100' STOP ✓ / DIRECTION FROM OBSERVER: START 60° STOP ✓			
DESCRIBE EMISSIONS: START CLEAR ✓ STOP			
EMISSION COLOR: START CLEAR STOP ✓ / PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT			
WATER DROPLETS PRESENT: (NO) YES / IF WATER DROPLET PLUME: ATTACHED (DETACHED)			
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓			
DESCRIBE BACKGROUND: START LIGHT BLUE STOP ✓			
BACKGROUND COLOR: START LIGHT BLUE STOP ✓ / SKY CONDITIONS: START MOSTLY SUNNY STOP			
WIND SPEED (MPH): START 5-10 STOP ✓ / WIND DIRECTION: START NW STOP			
AMBIENT TEMPERATURE (F): START 76 STOP 77 / WET BULB (F) / RH (PERCENT)			

min	0	15	30	45	min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert / DATE: 4 18 - 05

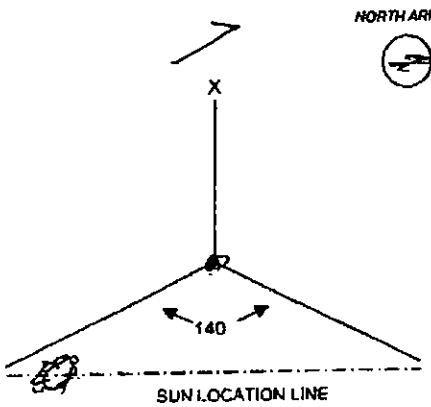
ORGANIZATION: Air Test Professionals, Inc. (ATP)

CERTIFIED BY: / DATE: 3-27-05

Carl Koontz Associates

Comments:

SOURCE LAYOUT SKETCH



X = Emission Point
• = Observer's Position
☼ = Sun
= Wind
= Plume

BAG HOUSE #2 (2R)

3 1/hr

Visible Emissions Observations Form

RUN NUMBER 1

SOURCE NAME NUCOR STEEL	**OBSERVATION DATE** 4-18-05	**START TIME** 2345	**STOP TIME** 3 15

ADDRESS

CITY CARMEL VILLA | **STATE** IN | **ZIP**

PHONE | **SOURCE ID NUMBER** FAP E A00

PROCESS EQUIPMENT BAG HOUSE #2 | **OPERATING MODE**

CONTROL EQUIPMENT | **OPERATING MODE**

DESCRIBE EMISSION POINT (Stack Exit Dimensions) 25' X 25' STACK

HEIGHT ABOVE GROUND LEVEL START 120' STOP — | **HEIGHT RELATIVE TO OBSERVER** START 130' STOP —

DISTANCE FROM OBSERVER START 1100 STOP ✓ | **DIRECTION FROM OBSERVER** START 30° STOP —

DESCRIBE EMISSIONS START CLEAR ✓ STOP —

EMISSION COLOR START CLEAR STOP ✓ | **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT NO YES | **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START STOP

DESCRIBE BACKGROUND START LIGHT BLUE STOP

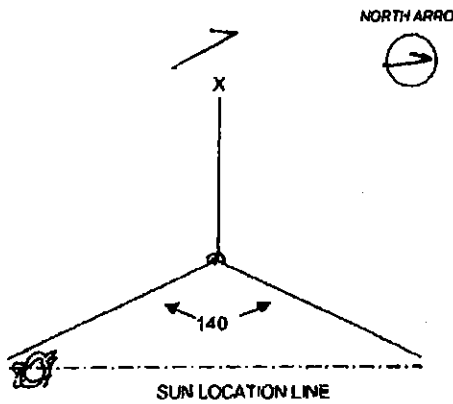
BACKGROUND COLOR START LIGHT BLUE STOP — | **SKY CONDITIONS** START MOSTLY SUNNY STOP

WIND SPEED (MPH) START 5-10 STOP ✓ | **WIND DIRECTION** START NW STOP

AMBIENT TEMPERATURE (F) START 79 STOP ✓ | WET BULB TEMP | R.H. PERCENT

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind →
• = Observer's Position | = Plume
☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) RONALD STAPERT

OBSERVER'S SIGNATURE Ronald Stapert | **DATE** 4-18-05

ORGANIZATION Air Test Professionals, Inc. (ATP)

CERTIFIED BY | **DATE** 4-18-05

Carl Koontz Associates

Comments:

BAG HOUSE #2

4 AND 4½

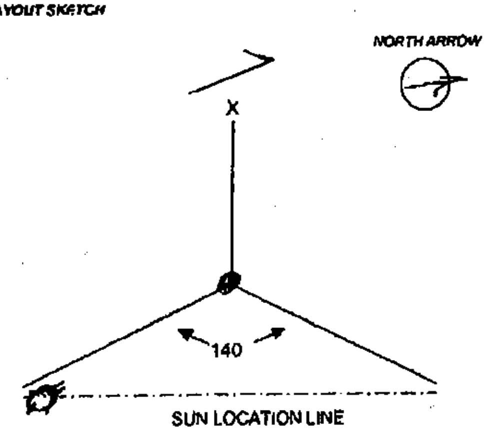
RUN NUMBER 1

Visible Emissions Observations Form

SOURCE NAME	NUCOR STEEL
OBSERVATION DATE	4-18-05
START TIME	345
STOP TIME	445
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	BAG HOUSE #2
OPERATING MODE	
CONTROL EQUIPMENT	~~25' ... STACK~~
OPERATING MODE	
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	25'X25' STACK
HEIGHT ABOVE GROUND LEVEL	START 170' STOP ✓
HEIGHT RELATIVE TO OBSERVER	START 130 STOP ✓
DISTANCE FROM OBSERVER	START 1100 STOP ✓
DIRECTION FROM OBSERVER	START 60° STOP ✓
DESCRIBE EMISSIONS	START CLEAR STOP ✓
EMISSION COLOR	START CLEAR STOP
PLUME TYPE:	CONTINUOUS (circled) FUGITIVE INTERMITTENT
WATER DROPLETS PRESENT	NO (circled) YES
IF WATER DROPLET PLUME:	ATTACHED DETACHED (circled)
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	START 20' STOP ✓
DESCRIBE BACKGROUND	START LIGHT BLUE STOP ✓
BACKGROUND COLOR	START LIGHT BLUE STOP ✓
SKY CONDITIONS	START MOSTLY SUNNY STOP —
WIND SPEED (MPH)	START 5-10 STOP —
WIND DIRECTION	START NW STOP
AMBIENT TEMPERATURE (F)	START 80° STOP —
WET BULB TEMP	
RH PERCENT	

min \ sec	0	15	30	45	min \ sec	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X	= Emission Point
•	= Observer's Position
☼	= Sun
→	= Wind
	= Plume

AVERAGE OPACITY FOR HIGHEST PERIOD	0
NUMBER OF READINGS ABOVE	0 WERE 0
RANGE OF OPACITY READINGS	MINIMUM 0 MAXIMUM 0
OBSERVER'S NAME (PRINT)	RONALD STAPERT
OBSERVER'S SIGNATURE	Ronald Stapert
DATE	4-18-05
ORGANIZATION	Air Test Professionals, Inc. (ATP)
CERTIFIED BY	Carl Koontz Associates
DATE	3-24-05
Comments:	

BAG HOUSE #2

RUN #2

9:20 - 9:50

NUCOR STEEL

4-19-05 (8:20) - (8:50)

CITY	STATE	ZIP
CHARLESTOWN	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
BAG HOUSE #2	BAF 4 Mod

CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT
START 25'X25' STOP STACK

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 170' STOP	START 130' STOP ✓

DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 1100 STOP ✓	START 55° STOP ✓

DESCRIBE EMISSIONS
START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE: CONTINUOUS ○
START CLEAR STOP ✓	FUGITIVE ○ INTERMITTENT ○

WATER DROPLETS PRESENT	IF WATER DROPLET PLUME:
NO ○ YES ○	ATTACHED ○ DETACHED ○

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START 20' UP STOP ✓

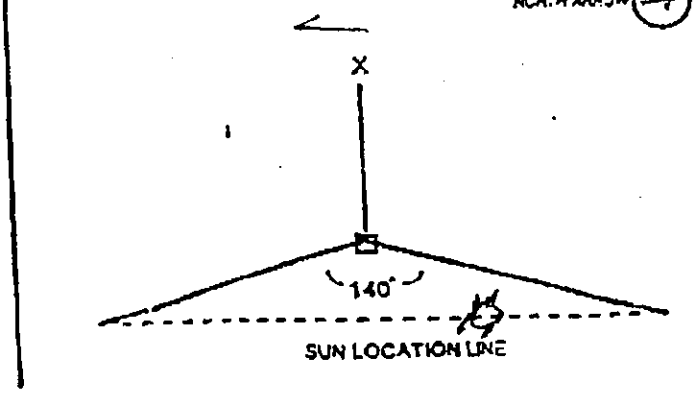
DESCRIBE BACKGROUND
START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP —

WIND SPEED	WIND DIRECTION
START 5 STOP ✓	START S STOP ✓

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 65° STOP 68	—	—

SOURCE LAYOUT SKETCH



SECONDS	1	2	3	4	5	6	7	8	9	10
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10	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD 0	NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT)
RONALD STAPERT

OBSERVER'S SIGNATURE	DATE
Ronald Staperl	4 / 19 / 05

ORGANIZATION
AIR TEST PROFESSIONALS INC

CERTIFIED BY	DATE
CARL KOOWTZ	3-24-05

Comments:

BAG H. #2

NUCOR STEEL

4-19-05

(1,45 - 2,45) (12,45 - 1,45) ~~10,45 - 11,20~~ RUN #2

CITY: CRAWFORDSVILLE	STATE: IN	ZIP:
PHONE:	SOURCE ID NUMBER: EAF & AOD	
PROCESS EQUIPMENT: BAG HOUSE #2	OPERATING MODE:	
CONTROL EQUIPMENT:	OPERATING MODE:	

DESCRIBE EMISSION POINT: START 25' X 25' STACK STOP

HEIGHT ABOVE GROUND LEVEL: START 170' STOP	HEIGHT RELATIVE TO OBSERVER: START 130' STOP
DISTANCE FROM OBSERVER: START 110' STOP	DIRECTION FROM OBSERVER: START 60° STOP

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR: START CLEAR STOP	PLUME TYPE: (CONTINUOUS) ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT: (NO) ☐ YES ☐	IF WATER DROPLET PLUME: ATTACHED ☐ (DETACHED)

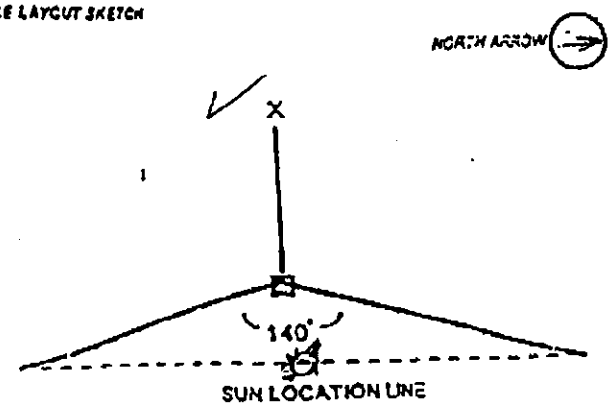
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓

DESCRIBE BACKGROUND: START BLUE STOP ✓

BACKGROUND COLOR: START BLUE STOP ✓	SKY CONDITIONS: START MOSTLY SUNNY STOP
WIND SPEED: START 10-15 STOP ✓	WIND DIRECTION: START SE STOP ✓

AMBIENT TEMPERATURE: START 80° STOP ✓	WET BULB TEMP.: —	R.H. PERCENT: —

SOURCE LAYOUT SKETCH



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2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
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6	0	0	0	0	36	0	0	0	0
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8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
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12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE: 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert DATE: 4/19/05

ORGANIZATION: AIR TEST PROFESSIONAL INC

CERTIFIED BY: CARL KOONTZ DATE: 3-24-05

Comments:

BAG-H. #2

RUN 2

NUCOR STEEL 4-19-05 2:45 - 3:45

CITY	STATE	ZIP
CRAWFORDSVILLE	IN	

PHONE	SOURCE ID NUMBER

PROCESS EQUIPMENT	OPERATING MODE
BAG HOUSE #2	
CONTROL EQUIPMENT	OPERATING MODE

DESCRIBE EMISSION POINT: START 25' x 25' STOP STACK

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START 170' STOP ✓	START 150' STOP ✓
DISTANCE FROM OBSERVER	**DIRECTION FROM OBSERVER**
START 1000 STOP ✓	START 60° STOP ✓

DESCRIBE EMISSIONS: START CLEAR STOP ✓

EMISSION COLOR	PLUME TYPE
START CLEAR STOP	CONTINUOUS ☑ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	**IF WATER DROPLET PLUME**
NO ☑ YES ☐	ATTACHED ☐ DETACHED ☑

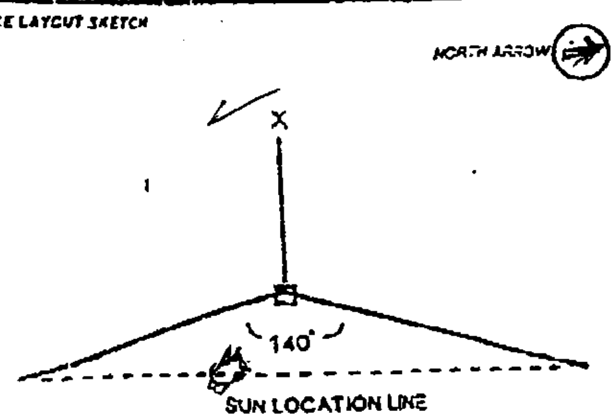
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START 20' STOP ✓

DESCRIBE BACKGROUND: START BLUE STOP ✓

BACKGROUND COLOR	SKY CONDITIONS
START BLUE STOP ✓	START MOSTLY SUNNY STOP
WIND SPEED	**WIND DIRECTION**
START 10-15 STOP 10-15	START SE STOP

AMBIENT TEMPERATURE	WET BULB TEMP.	R.H. PERCENT
START 80° STOP 80°	—	—

SOURCE LAYOUT SKETCH



1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
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26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): RONALD STAPERT

OBSERVER'S SIGNATURE: Ronald Stapert DATE 4/19/05

ORGANIZATION: AIR TEST PROFESSIONAL INC

CERTIFIED BY: CARL KOONTZ DATE 3-24-05

Comments:

BAG H #2

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME NUCOR STEEL	**OBSERVATION DATE** 04 - 22 - 05	**START TIME** 0900	**STOP TIME** 1000

ADDRESS

CITY CRAWFORDSVILLE **STATE** IN **ZIP**

PHONE **SOURCE ID NUMBER**

PROCESS EQUIPMENT EAF's & AOD **OPERATING MODE**

CONTROL EQUIPMENT PPPF BAGHOUSE #2 **OPERATING MODE** NORMAL

DESCRIBE EMISSION POINT (Stack Exit Dimensions) 25' X 25' STACK

HEIGHT ABOVE GROUND LEVEL START 170' STOP 170' **HEIGHT RELATIVE TO OBSERVER** START 140' STOP 140'

DISTANCE FROM OBSERVER START 600' STOP 600' **DIRECTION FROM OBSERVER** START W STOP W

DESCRIBE EMISSIONS START N/A STOP N/A

EMISSION COLOR START N/A STOP N/A **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START STACK EXIT STOP STACK EXIT

DESCRIBE BACKGROUND START SKY STOP SKY

BACKGROUND COLOR START GRAY STOP GRAY **SKY CONDITIONS** START OVERCAST STOP OVERCAST

WIND SPEED (MPH) START 0-5 STOP 0-5 **WIND DIRECTION** START N STOP N

AMBIENT TEMPERATURE (F) START 55° STOP 57° **WET BULB TEMP** **R.H. PERCENT**

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
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15	0	0	0	0	45	0	0	0	0
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19	0	0	0	0	49	0	0	0	0
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27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
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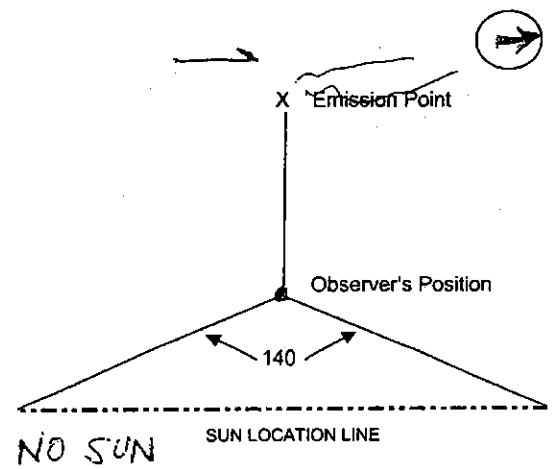
SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) CARLOS BRAUN

OBSERVER'S SIGNATURE **DATE** 04 -22 -05

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY CARL KOONTZ **DATE**

Comments:

X = Emission Point = Wind

= Observer's Position = Plume

= Sun

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME	NUCOR - SPEEL
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF'S & ADD
OPERATING MODE	
CONTROL EQUIPMENT	PPPP BAGHOUSE #2
OPERATING MODE	NORMAL
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	25' x 25' STACK
HEIGHT ABOVE GROUND LEVEL START	170' STOP 170'
HEIGHT RELATIVE TO OBSERVER START	170' STOP 170'
DISTANCE FROM OBSERVER START	600' STOP 600'
DIRECTION FROM OBSERVER START	W STOP W
DESCRIBE EMISSIONS START	N/A STOP N/A
EMISSION COLOR START	N/A STOP N/A
PLUME TYPE:	CONTINUOUS FUGITIVE INTERMITTENT
WATER DROPLETS PRESENT	NO YES
IF WATER DROPLET PLUME:	ATTACHED DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	STACK EXIT STOP STACK EXIT
DESCRIBE BACKGROUND START	SKY STOP SKY
BACKGROUND COLOR START	GRAY STOP GRAY
SKY CONDITIONS START	OVERCAST STOP OVERCAST
WIND SPEED (MPH) START	0-5 STOP 0-5
WIND DIRECTION START	N STOP N
AMBIENT TEMPERATURE (F) START	STOP
WET BULB TEMP.	R.H. PERCENT

OBSERVATION DATE 04-22-05 START TIME 1030 STOP TIME 1600

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
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11	0	0	0	0	41	0	0	0	0
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15	0	0	0	0	45	0	0	0	0
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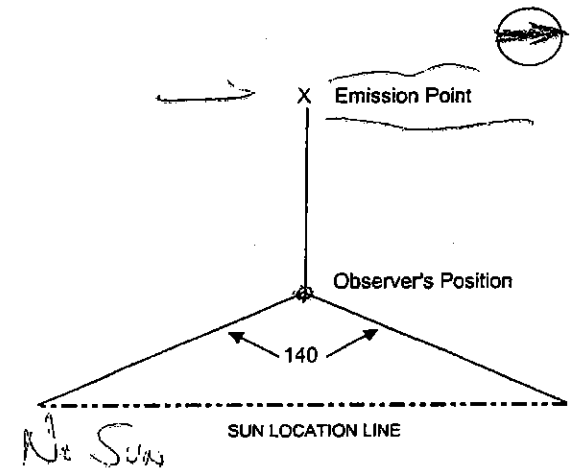
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD	0
NUMBER OF READINGS ABOVE	0 WERE 0
RANGE OF OPACITY READINGS MINIMUM	0 MAXIMUM 0
OBSERVER'S NAME (PRINT)	CHARLES M BROWN
OBSERVER'S SIGNATURE	
DATE	04-22-05
ORGANIZATION	ATP - Air Test Professionals, Inc.
CERTIFIED BY	ERIC KOONTZ
DATE	
Comments:	

X = Emission Point
= Observer's Position
= Sun
= Wind
= Plume

Visible Emissions Observations Form

RUN NUMBER 3

SOURCE NAME Nucor - Steel	**OBSERVATION DATE** 04 - 22 05	**START TIME** 1230	**STOP TIME** 1530

ADDRESS

CITY Crawfordsville | **STATE** IN | **ZIP**

PHONE | **SOURCE ID NUMBER**

PROCESS EQUIPMENT EAF 5 & AOD | **OPERATING MODE**

CONTROL EQUIPMENT BAGHOUSE #2 | **OPERATING MODE** Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions) Round 25' X 25' Rectangular Stack

HEIGHT ABOVE GROUND LEVEL START 170' STOP 170' | **HEIGHT RELATIVE TO OBSERVER** START 170' STOP 170'

DISTANCE FROM OBSERVER START 600' STOP 600' | **DIRECTION FROM OBSERVER** START N STOP N

DESCRIBE EMISSIONS START N/A STOP N/A

EMISSION COLOR START N/A STOP N/A | **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT NO YES | **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START STACK EXIT STOP STACK EXIT

DESCRIBE BACKGROUND START Sky STOP Sky

BACKGROUND COLOR START Grey STOP Grey | **SKY CONDITIONS** START Partly Cloudy STOP

WIND SPEED (MPH) START 0-5 STOP 0-5 | **WIND DIRECTION** START N STOP N

AMBIENT TEMPERATURE (F) START STOP | WET BULB TEMP | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
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9	0	0	0	0	39				
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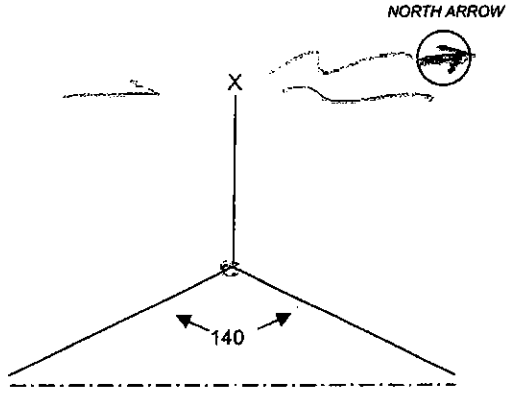
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind
• = Observer's Position | = Plume
☼ = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Travis Braun

OBSERVER'S SIGNATURE | **DATE** 04 22 05

ORGANIZATION Air Test Professionals, Inc. (ATP)

CERTIFIED BY | **DATE** Carl Koontz Associates

Comments:

COMPLIANCE TEST PROTOCOL
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Date Prepared: March 7, 2005 **Proposed Test Date:** To Be Determined

Plant Address and Location: 4537 South Nucor Street, Crawfordsville, IN

1. Source Information

AFS: _____ **Id Number:** _____ **Permit Number:** 107-16823-00038
Company: Nucor Steel
Mail Address: 4537 South Nucor Street
City: Crawfordsville, Indiana **Zip:** 47933
Co.Contact: Mark Washer **Phone:** (765) 364-1323

Check program if applicable:
FESOP: _____
Title V: X
SSOA: _____

AGENCY USE ONLY	Date Rec'd:
Inspector:	Reviewer: Date Appr:

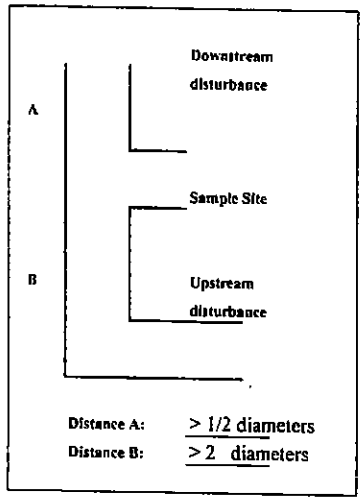
2. Tester Information

Name: Air Test Professionals, Inc.
Address: 1201 N. Graham Ave.
Contact: Carlos M. Brown **Phone:** 317-345-1723
Pre-Test Inspection Complete? Yes

3. Process Information

Unit to Test: Meltshop EAF Baghouse #2
Max. Rated Capacity: 502 tons/hour
Proposed Operating Speed: Normal (MAX)
Pollution Control Equipment: 2 Pos. Pressure Baghouses
Process Description: EAF's & AOD & other units melt scrap steel for processing

Fuel Type: N/A



4. Test Information

		# Runs	Time/Run
Methods 1-4		3	~240 MIN
Method 5/202	PM/PM10	3	~240 min
Method 6			
Method 29	Lead & Mercury	3	120 min
Method 25A	VOC	3	60 min
Other Testing:			

5. Sampling Strategy

a. Describe any deviations from the standard test method.
None

b. Describe method used to determine quantity of raw materials
Plant personnel will keep record production

6. Sample Site Location

Does sample port location meet 40 CFR 60, Appx A, Method 1 Section 1.2 requirements: Yes/No: yes If No, Explain _____

Number of sample points for M5: 25
Diameter at sample site: 25' x 25' **Stack height:** ~200'
Approx. stack gas flow (ACFM): 800,000
Approx. gas temp. (degF): 150 - 200
Approx. gas moisture (%): 3%

Reason for test:
State Agreed Order: Yes/No: _____ **Operating permit:** Yes/No: Yes
Construction Permit: Yes/No: _____ **Compliance w 326** _____
NSPS 40 CFR 60 Subpart: _____ **Other** _____
Title V: _____
Other (i.e. EPA, CD, state, 114) _____

326 IAC 3-2.1 requires this completed form and fee to be submitted 35 days prior to proposed test date to:
(FEE NOT APPLICABLE IF FESOP OR TITLE V)

Questions may be directed to 317-232-8338, FAX : 317-233-6865

Compliance Data Section
Office of Air Management
Indiana Department of Environmental Management
100 North Senate
PO BOX 6015
Indianapolis, IN 46206-6015

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data
April 18, 2005

PM/PM10 Run 1: 12:50 pm - 7:36 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159264	12:32 PM	1:18 PM	130.7	46.0	38.0	108.0		
	159265	1:18 PM	2:17 PM	114.6	59.0	59.0	114.6		
	159266	2:17 PM	2:55 PM	141.0	38.0	11.0	37.9		
	159267	2:55 PM	3:37 PM	115.5	40.0	40.0	115.5		
	159268	3:37 PM	4:14 PM	131.0	37.0	11.0	38.9		
	159269	4:14 PM	4:51 PM	130.0	37.0	0.0	0.0		
	159270	4:51 PM	5:29 PM	131.2	38.0	21.0	72.5		
	159271	5:29 PM	6:17 PM	130.2	48.0	48.0	130.2		
	159272	6:17 PM	6:57 PM	129.5	40.0	40.0	129.5		
	159273	6:57 PM	7:32 PM	131.0	35.0	35.0	131.0		
	159274	7:32 PM	8:13 PM	130.5	41.0	4.0	12.7	890.9	178.9
North EAF	254837	12:47 PM	2:06 PM	118.4	79.0	76.0	113.9		
	254838	2:06 PM	3:17 PM	101.7	71.0	44.0	75.4		
	254839	3:17 PM	4:39 PM	119.0	82.0	31.0	45.0		
	254840	4:39 PM	6:01 PM	116.5	82.0	82.0	75.3		
	254841	6:01 PM	7:24 PM	116.5	83.0	83.0	116.5		
	254842	7:24 PM	9:40 PM	117.2	136.0	12.0	10.3	436.5	87.6
AOD	254835	12:17 PM	1:41 PM	130.0	84.0	51.0	78.9		
	254836	1:41 PM	2:51 PM	131.5	70.0	43.0	80.8		
	254837	2:51 PM	4:15 PM	124.4	84.0	57.0	64.4		
	254838	4:15 PM	5:40 PM	123.3	85.0	57.0	54.7		
	254839	5:40 PM	7:02 PM	123.4	85.0	85.0	123.4		
	254840	7:02 PM	8:23 PM	117.5	82.0	34.0	48.7	471.0	94.6

Delay 2:20 pm - 2:47 pm

Delay 3:48 pm - 5:08 pm

Total Meltshop Production - Avg. tons/hr:	**361.1**
Total Test Run Length, hrs:	**4.98**
Tons produced during run:	**1798.3**

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data

April 19, 2005

PM/PM10 Run 2: 8:20 am - 4:08 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159290	8:15 AM	8:57 AM	130.6	42.0	37.0	115.1		
	159291	8:57 AM	9:42 AM	130.2	45.0	45.0	130.2		
	159292	9:42 AM	10:50 AM	127.1	68.0	10.0	18.7		
	159293	10:50 AM	11:36 AM				0.0		
	159294	11:36 AM	1:22 PM	129.6	106.0	47.0	57.5		
	159295	1:22 PM	2:02 PM	129.3	40.0	40.0	129.3		
	159296	2:02 PM	3:01 PM	129.3	59.0	59.0	129.3		
	159297	3:01 PM	3:41 PM	129.9	40.0	40.0	129.9		
	159298	3:41 PM	4:23 PM	115.2	42.0	27.0	74.1	784.0	154.3
North EAF	254850	7:55 AM	9:00 AM	123.4	65.0	40.0	75.9		
	254851	9:00 AM	11:01 AM	121.5	121.0	52.0	52.2		
	254852	11:01 AM	12:40 PM				5.8		
	254853	12:40 PM	1:34 PM	118.5	54.0	54.0	118.5		
	254854	1:34 PM	2:45 PM	114.5	71.0	71.0	114.5		
	254855	2:45 PM	4:09 PM	119.0	84.0	83.0	117.6		
								484.5	95.4
AOD	254849	8:20 AM	9:24 AM	124.7	64.0	64.0	124.7		
	254850	9:24 AM	10:33 AM	127.2	69.0	28.0	51.6		
	254851	10:33 AM	12:33 PM				0.0		
	254852	12:33 PM	2:05 PM	118.7	92.0	2.0	2.6		
	254853	2:05 PM	3:43 PM	122.1	98.0	98.0	122.1		
	254854	3:43 PM	5:00 PM	118.3	77.0	25.0	38.4	339.4	66.8

Delay 9:52 am - 12:35 pm

Delay 9:52 am - 12:35 pm

Delay 9:52 am - 12:35 pm

Total Meltshop Production - Avg. tons/hr:	**316.5**
Total Test Run Length, hrs:	**5.08**
Tons produced during run:	**1607.9**

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data
April 22, 2005

PM/PM10 Run 3: 8:33 am - 2:14 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159361	7:21 AM	8:38 AM	132.0	77.0	5.0	8.6		
	159362	8:38 AM	9:19 AM	132.8	41.0	41.0	132.8		
	159363	9:19 AM	10:04 AM	131.8	45.0	45.0	131.8		
	~~159364~~	~~10:04 AM~~	~~11:36 AM~~	~~131.1~~	~~92.0~~	~~57.0~~	~~81.2~~		
	159365	11:36 AM	12:19 PM	125.4	45.0	45.0	125.4		
				Delay 10:48 am - 11:23 am					
	159366	12:19 PM	1:05 PM	129.4	46.0	46.0	129.4		
	159367	1:05 PM	1:53 PM	130.1	48.0	48.0	130.1		
	159368	1:53 PM	2:37 PM	129.9	44.0	21.0	62.0		
								801.3	157.1
North EAF	254910	8:30 AM	9:19 AM	123.9	49.0	46.0	116.3		
	254911	9:19 AM	10:06 AM	125.4	47.0	47.0	125.4		
	~~254912~~	~~10:06 AM~~	~~11:04 AM~~	~~126.2~~	~~58.0~~	~~42.0~~	~~91.5~~		
	254913	11:04 AM	11:47 AM	126.2	43.0	24.0	70.4		
				Delay 10:48 am - 11:23 am					
	254914	11:47 AM	12:42 PM	126.7	55.0	55.0	126.7		
	254915	12:42 PM	1:27 PM	126.8	45.0	45.0	126.8		
	254916	1:27 PM	2:16 PM	126.2	49.0	47.0	121.0		
								778.2	152.6
AOD	254908	8:16 AM	8:57 AM	127.9	41.0	24.0	74.9		
	254910	8:57 AM	10:09 AM	127.1	72.0	72.0	127.1		
	~~254911~~	~~10:09 AM~~	~~11:05 AM~~	~~127.8~~	~~56.0~~	~~39.0~~	~~89.0~~		
	254912	11:05 AM	12:02 PM	128.6	57.0	39.0	88.1		
				Delay 10:48 am - 11:23 am					
	254913	12:02 PM	12:50 PM	128.7	48.0	48.0	128.7		
	254914	12:50 PM	1:49 PM	129.9	59.0	59.0	129.9		
	254915	1:49 PM	2:44 PM	129.9	55.0	25.0	59.0	696.7	136.6

Total Meltshop Production - Avg. tons/hr: **446.3**
Total Test Run Length, hrs: **5.1**
Tons produced during run: **2276.2**

Nucor Steel - Crawfordsville, IN

Baghouse Testing - Heat Summary

PM/PM10 - Run 1 - 4/18/05 - 12:50 - 19:36

	Heat No.	Grade			Start			
South EAF	159264	1005T1	142.1	130.7	12:32	45.6	20.8	13.6
	159265	1005S1	142.2	114.6	13:18	59.7	21	27.4
	159266	1005T1	131.8	131	14:17	37.8	20.9	8.7
	159267	1005S1	130.8	115.5	14:55	41.7	21.1	11.5
	159268	1005T1	130.5	131	15:37	36.9	20.6	9
	159269	1005T1	132.8	131.6	16:14	37.6	21.2	10
	159270	1005T1	132.4	131.2	16:51	37.9	21.3	8.2
	159271	1005T1	136.8	130.2	17:29	47.3	20.7	18.2
	159272	1005T1	137.5	129.5	18:17	40.9	21.3	10.3
	159273	1005T1	64	131	18:57	34.4	31.6	17.7
	159274	1005T1	130.5	130.5	19:32	41.1	21.2	10.4
	159275	1005S1	130.9	115.8	20:13	44.2	21	13.2
North EAF	254837	409S1	130.3	118.4	12:47	79.1	27.5	33.8
	254838	409S1	132.7	121.7	14:06	70.8	27.8	26.5
	254839	409S1	108.4	119	15:17	81.4	27.6	42
	254840	409S1	112.8	116.5	16:39	82.5	39	42.8
	254841	409S1	112.3	116.5	18:01	82.7	27.6	47.5
	254842	409S1	114.1	117.2	19:24	135.9	88.7	92.4
	254843	409S1	123.3	118	21:40	219.5	27.1	179.9
AOD	254835	409S1	121	130	12:17	84		
	254836	409S1	122	131.5	13:41	70		
	254837	409S1	119	124.4	14:51	84		
	254838	409S1	122	128.3	16:15	75		
	254839	409S1	119	123.4	17:40	85		
	254840	409S1	117	117.5	19:02	82		
	254841	409S1	117	119	20:23	79		

Nucor Steel - Crawfordsville, IN

Baghouse Testing - Heat Summary

PM/PM10 - Run 2 - 4/19/05 - 8:20 - 16:08

Select	Heat No.	Grade			Start			
South EAF	159290	1005T1	134	130.6	8:15	42.1	21.3	12.7
	159291	1005T1	136.6	130.2	8:57	45.4	21.6	14.9
	159292	1005T1	136.3	127.1	9:42	67.4	21.4	37.6
	159293	1005T1	137.6	129.9	10:50	45.9	25.8	14.6
	159294	1005T1	153.1	129.6	11:36	106.7	79.6	76.4
	159295	1005T1	140.5	129.3	13:22	39.5	21.8	9.4
	159296	1005T1	138.4	129.3	14:02	59.5	21.2	28.6
	159297	1005T1	137	129.9	15:01	39.4	21.1	9.1
	159298	1005S1	136.7	115.2	15:41	41.9	21	10
	159299	1005T1	136.6	130.5	16:23	39.1	20.6	9.4
North EAF	254850	409S1	125.1	123.4	7:55	65.5	27.7	23.6
	254851	409S1	128.1	121.5	9:00	121.3	27.8	77.4
	254852	409S1	125.5	114.3	11:01	98.6	27.7	56.2
	254853	409S1	126.8	118.5	12:40	54.5	27.7	13.1
	254854	409S1	128.6	114.5	13:34	70.3	27.2	30
	254855	409S1	132	119	14:45	84.2	40.5	40.2
	254856	1050	151.9	121.8	16:09	97.1	24.9	57.1
	254857	1050	142.2	121.9	17:46	72.6	24.3	35.8
AOD	254849	409S1	120	124.7	8:20	64		
	254850	409S1	124	127.2	9:24	69		
	254851	409S1	122	124.8	10:33	120		
	254852	409S1	114.5	118.7	12:33	92		
	254853	409S1	119	122.1	14:05	98		
	254854	409S1	115	118.3	15:43	77		
	254855	409S1	112	124.4	17:00	72		
	254856	1050	122	122.9	18:12	67		
	254857	1050	122	121.9	19:19	35		
	254858	1050	122.5	122.9	19:54	32		
	254859	1050	123	123.3	20:26	161		

Nucor Steel - Crawfordsville, IN

Baghouse Testing - Heat Summary

PM/PM10 - Run 3 - 4/22/05 - 8:33 - 14:14

Select	Heat No.	Grade			Start			
South EAF	159361	1008W3	176	132	7:21	76.3	23.4	59.7
	159362	1008W3	141.2	132.8	8:38	41.2	21.8	9.1
	159363	1008W3	148.4	131.8	9:19	45.4	22.4	13.1
	159364	1008W3	140.7	131.1	10:04	91.7	31.6	59.2
	159365	1026A2	141.1	125.4	11:36	43.4	21.9	12
	159366	1026A2	135.1	129.4	12:19	45.7	21.3	14.9
	159367	1026A2	135	130.1	13:05	48.4	21.8	17.1
	159368	1026A2	135.9	129.9	13:53	43.8	21.6	13
	159369	1026A2	139.6	125.7	14:37	41.4	21.7	10.6
North EAF	254910	1001S8	131.2	123.9	8:30	49	23.3	12.1
	254911	1001S8	132.2	125.4	9:19	46.3	23.2	12.2
	254912	1001S8	138	126.3	10:06	58.5	30.2	23.2
	254913	1001S8	133.8	126.2	11:04	43.3	22.2	9.7
	254914	1001S8	132.1	126.7	11:47	54.7	23	18.5
	254915	1001S8	134.3	126.8	12:42	44.8	23.3	11.6
	254916	1001S8	133.7	126.2	13:27	48.8	27.9	13.9
	254917	1005S1	133.6	107.2	14:16	58.4	22.3	24
AOD	254908	1001S8	125	127.9	8:16	41		
	254910	1001S8	124.3	127.1	8:57	72		
	254911	1001S8	125	127.8	10:09	56		
	254912	1001S8	126	128.8	11:05	57		
	254913	1001S8	126	128.7	12:02	48		
	254914	1001S8	127	129.9	12:50	59		
	254915	1001S8	127	129.9	13:49	55		

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data
April 18, 2005

VOC/Metals Run 1: 12:50 pm - 3:35 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159264	12:32 PM	1:18 PM	130.7	46.0	28.0	79.6		
	159265	1:18 PM	2:17 PM	114.6	59.0	59.0	114.6		
	159266	2:17 PM	2:55 PM	101.0	38.0	11.0	37.9		
	159267	2:55 PM	3:37 PM	115.5	40.0	40.0	115.5		
								347.6	151.1
North EAF	254837	12:47 PM	2:06 PM	118.4	79.0	76.0	113.9		
	254838	2:06 PM	3:17 PM	101.7	71.0	44.0	75.4		
	254839	3:17 PM	4:39 PM	119.0	82.0	18.0	26.1		
								215.4	93.7
AOD	254835	12:17 PM	1:41 PM	130.0	84.0	51.0	78.9		
	254836	1:41 PM	2:51 PM	131.5	70.0	43.0	80.8		
	254837	2:51 PM	4:15 PM	124.4	84.0	44.0	65.2		
								224.9	97.8

Delay 2:20 pm - 2:47 pm

Delay 2:20 pm - 2:47 pm

Delay 2:20 pm - 2:47 pm

Total Meltshop Production - Avg. tons/hr:	**342.6**
Total Test Run Length (less delays), hrs:	**2.3**
Tons produced during run:	**787.9**

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data

April 18, 2005

VOC/Metals Run 2: 5:05 pm - 7:20 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159270	4:51 PM	5:29 PM	131.2	38.0	24.0	82.9		
	159271	5:29 PM	6:17 PM	130.2	48.0	48.0	130.2		
	159272	6:17 PM	6:57 PM	129.5	40.0	40.0	129.5		
	159273	6:57 PM	7:32 PM	131.0	35.0	23.0	86.1		
								428.6	190.5
North EAF	254840	4:39 PM	6:01 PM	116.5	82.0	56.0	79.6		
	254841	6:01 PM	7:24 PM	116.5	83.0	79.0	110.9		
								190.4	84.6
AOD	254838	4:15 PM	5:40 PM	128.3	75.0	35.0	59.9		
	254839	5:40 PM	7:02 PM	123.4	85.0	85.0	123.4		
	254840	7:02 PM	8:23 PM	117.5	82.0	18.0	25.8		
								209.1	92.9

Total Meltshop Production - Avg. tons/hr:	**368.1**
Total Test Run Length, hrs:	**2.25**
Tons produced during run:	**828.2**

Nucor Steel - Crawfordsville, IN

Baghouse #1 & #2 Stack Test Production Data
April 19, 2005

VOC/Metals Run 3: 8:20am - 1:25 pm

	Heat Number	Start	End	Net Ladle Tons	Total Minutes	Run Minutes	Tons During Run	Total Tons	Average tons/hr
South EAF	159290	8:15 AM	8:57 AM	130.6	42.0	37.0	115.1		
	159291	8:57 AM	9:42 AM	130.2	45.0	45.0	130.2		
	~~159292~~	~~9:42 AM~~	~~10:50 AM~~	~~127.1~~	~~68.0~~	~~18.0~~	~~18.7~~		
	159293	10:50 AM	11:36 AM	~~128.8~~	~~46.0~~	~~0.0~~	0.0		
	159294	11:36 AM	1:22 PM	129.6	106.0	47.0	57.5		
	159295	1:22 PM	2:02 PM	129.3	40.0	3.0	9.7		
								331.1	139.7
North EAF	254850	7:55 AM	9:00 AM	123.4	65.0	40.0	75.9		
	~~254851~~	~~9:00 AM~~	~~11:01 AM~~	~~121.5~~	~~121.0~~	~~52.0~~	~~52.2~~		
	~~254852~~	~~11:01 AM~~	~~12:40 PM~~	~~114.3~~	~~99.0~~	~~5.0~~	~~5.8~~		
	254853	12:40 PM	1:34 PM	118.5	54.0	45.0	98.8		
								232.7	98.2
AOD	254849	8:20 AM	9:24 AM	124.7	64.0	64.0	124.7		
	~~254850~~	~~9:24 AM~~	~~10:33 AM~~	~~127.2~~	~~69.0~~	~~28.0~~	~~51.6~~		
	254851	10:33 AM	12:33 PM	~~124.8~~	~~120.0~~	~~120.0~~	124.8		
	254852	12:33 PM	2:05 PM	118.7	92.0	90.0	116.1		
								417.2	176.0

Delay 9:52 am - 12:35 pm

Delay 9:52 am - 12:35 pm

Delay 9:52 am - 12:35 pm

Total Meltshop Production - Avg. tons/hr:	**413.9**
Total Test Run Length, hrs:	**2.37**
Tons produced during run:	**981.0**

Nucor Steel - Crawfordsville, IN

Baghouse Testing - Heat Summary

VOC/Metals - Run 1 - 4/18/05 - 12:50 - 15:50

	Heat No.	Grade			Start			
South EAF	159264	1005T1	142.1	130.7	12:32	45.6	20.8	13.6
	159265	1005S1	142.2	116.6	13:18	59.7	21.4	27.1
	159266	1005T1	131.8	131	14:17	37.8	20.9	8.7
	159267	1005S1	130.6	115.5	15:35	41.7	21	10.5
	159268	1005T1	130.5	131	15:37	36.9	20.6	9
	159269	1005T1	132.6	131.6	16:14	39.6	21.2	9.0
North EAF	254837	409S1	130.3	118.4	12:47	79.1	27.5	33.8
	254838	409S1	132.7	121.7	14:06	76.8	27.8	26.3
	254839	409S1	108.4	119	15:17	81.4	27.6	42
	254840	409S1	112.8	116.5	16:59	82.5	28.9	42.8
AOD	254835	409S1	121	130	12:17	64		
	254836	409S1	122	131.5	13:41	70		
	254837	409S1	119	124.1	14:51	84.4		
	254838	409S1	122	128.3	16:15	75		

Nucor Steel - Crawfordsville, IN
Baghouse Testing - Heat Summary

VOC/Metals - Run 2 - 4/18/05 - 17:05 - 19:20

Select	Heat No.	Grade			Start			
South EAF	159270	1005T1	132.4	131.2	16:51	37.9	21.3	8.2
	159271	1005T1	136.8	130.2	17:29	47.0	20.7	18.2
	159272	1005T1	137.5	129.5	18:17	40.9	21.3	10.3
	159273	1005T1	164	131	18:57	34.4	31.6	17.7
	159274	1005T1	130.5	130.5	19:32	41.1	21.2	10.4
North EAF	254840	409S1	112.8	116.5	16:39	82.5	39	42.8
	254841	409S1	112.3	116.5	18:01	82.7	27.6	47.5
	254842	409S1	114.1	117.2	19:24	135.9	88.7	92.4
AOD	254838	409S1	122	128.3	16:15	75		
	254839	409S1	119	123.4	17:40	85		
	254840	409S1	117	117.5	19:02	82		
	254841	409S1	117	119	20:23	79		

Nucor Steel - Crawfordsville, IN

Baghouse Testing - Heat Summary

VOC/Metals - Run 3 - 4/19/05 - 8:20 - 13:25

Select	Heat No.	Grade			Start			
South EAF	159290	1005T1	134	130.6	8:16	42.1	21.3	12.4
	159291	1005T1	136.6	130.2	8:57	45.4	21.6	14.9
	159292	1005T1	136.8	127.1	9:42	67	21.6	8.6
	159293	1005T1	137.6	129.9	10:50	45.9	25.8	14.6
	159294	1005T1	135.1	129.6	11:36	106.7	29.6	7.64
	159295	1005T1	140.5	129.3	13:22	39.5	21.8	9.4
	159296	1005T1	136.4	129.3	14:02	59.5	21.2	28.6
North EAF	254850	409S1	125.1	123.4	7:55	65.5	27.7	23.6
	254851	409S1	128.1	121.5	9:00	121.5	27.6	77.1
	254852	409S1	125.5	114.3	11:01	98.6	27.7	56.2
	254853	409S1	126.8	116.5	12:40	84.5	27.7	19.1
	254854	409S1	128.6	114.5	13:34	70.3	27.2	30
AOD	254853	409S1	126.8	116.5	12:40	84.5	27.7	19.1
	254849	409S1	120	124.7	8:20	64		
	254850	409S1	124	122	9:21	99		
	254851	409S1	122	124.8	10:33	120		

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

4/18/2005			4/19/2005			4/22/2005		
Run 1			Run 2			Run 3		
	BH #1	BH #2		BH #1	BH #2		BH #1	BH #2
Time	DP, in. H2O	DP, in. H2O	Time	DP, in. H2O	DP, in. H2O	Time	DP, in. H2O	DP, in. H2O
12:48 PM	7.5	9.5	8:15 AM	7.6	8.6	8:33 AM	7.5	7.9
1:03 PM	7.6	10.1	8:30 AM	7.5	9.4	8:48 AM	7.9	8.1
1:18 PM	7.7	9.2	8:45 AM	7.4	8.8	9:03 AM	8.1	8.3
1:33 PM	8.0	10.3	9:00 AM	7.6	8.9	9:18 AM	8.4	9.0
1:48 PM	7.6	10.0	9:15 AM	6.8	9.4	9:33 AM	7.6	8.6
2:03 PM	7.3	8.9	9:30 AM	7.1	9.9	9:48 AM	7.9	9.2
2:18 PM	7.6	8.8	9:45 AM	7.4	7.4	10:03 AM	8.4	9.8
2:33 PM	7.2	10.1	10:00 AM	7.0		10:18 AM	7.3	9.0
2:48 PM	8.0	10.4	10:15 AM	7.1	10.1	10:33 AM	8.0	9.0
3:03 PM	7.7	9.1	10:30 AM	6.5	8.4	10:48 AM	8.0	9.6
3:18 PM	7.8	10.8	10:45 AM	6.4	8.2			
3:33 PM	7.8	10.1	11:00 AM	6.7				
3:48 PM	7.8	10.3				11:30 AM	8.1	7.9
4:03 PM	7.2	10.8				11:45 AM	8.6	8.2
4:18 PM	7.6	10.2	12:40 PM	6.8	6.9	12:00 PM	7.7	9.3
4:33 PM	7.8	10.7	12:55 PM	7.5	8.4	12:15 PM	8.1	10.1
4:48 PM	7.8	9.8	1:10 PM	7.8	8.3	12:30 PM	8.3	9.0
5:03 PM	7.6	10.1	1:25 PM	7.7	7.6	12:45 PM	7.7	10.0
5:18 PM	7.7	10.9	1:40 PM	6.8	9.3	1:00 PM	8.1	10.7
5:33 PM	8.3	9.5	1:55 PM	7.7	9.6	1:15 PM	8.0	8.8
5:48 PM	7.6	10.1	2:10 PM	7.7	8.0	1:30 PM	8.1	10.2
6:03 PM	7.6	10.8	2:25 PM	7.8	7.7	1:45 PM	7.9	10.1
6:18 PM	7.7	9.4	2:40 PM	7.1	9.4	2:00 PM	7.8	9.8
6:33 PM	7.5	10.1	2:55 PM	7.2	9.5	2:15 PM	8.6	9.9
6:48 PM	7.8	9.8	3:10 PM	7.4	9.1			
7:03 PM	8.0	9.0	3:25 PM	7.9	9.6			
7:18 PM	7.5	10.0	3:40 PM	7.0	10.0			
7:33 PM	7.9	9.1	3:55 PM	8.0	9.2			
7:48 PM	7.7	9.9	4:10 PM	7.3	10.3			
Max	8.3	10.9	Max	8.0	10.3	Max	8.6	10.7
Min	7.2	8.8	Min	6.4	6.9	Min	7.3	7.9
Avg	7.7	9.9	Avg	7.3	8.9	Avg	8.0	9.2

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #2

Run 1 Fan Amps and Damper Positions

DATE: 4/18/05 Run 1 Time: 12:50 pm - 7:36 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
12:48 PM	158	58%	159	68%	158	53%	158	53%				
1:03 PM	158	63%	159	74%	163	57%	159	57%				
1:18 PM	164	52%	161	61%	160	48%	163	46%				
1:33 PM	161	63%	163	75%	165	57%	163	58%				
1:48 PM	160	61%	159	72%	157	56%	160	55%				
2:03 PM	160	51%	162	60%	162	47%	161	46%				
2:18 PM	160	53%	161	63%	159	49%	156	47%				
2:33 PM	157	61%	157	71%	158	55%	159	55%				
2:48 PM	158	61%	163	73%	163	57%	163	56%				
3:03 PM	162	54%	160	63%	156	50%	161	49%				
3:18 PM	163	63%	161	74%	161	57%	163	57%				
3:33 PM	161	53%	163	92%	161	49%	161	48%				
3:48 PM	156	59%	164	90%	156	54%	159	54%				
4:03 PM	159	62%	156	91%	162	57%	157	56%				
4:18 PM	157	55%	157	91%	160	50%	158	49%				
4:33 PM	163	60%	158	92%	162	55%	161	54%				
4:48 PM	164	55%	155	92%	162	50%	163	49%				
5:03 PM	154	58%	157	93%	156	53%	158	52%				
5:18 PM	162	63%	159	91%	158	57%	158	57%				
5:33 PM	162	50%	164	91%	157	46%	158	44%				
5:48 PM	159	58%	156	91%	159	53%	157	53%				
6:03 PM	158	61%	157	91%	162	57%	159	55%				
6:18 PM	161	51%	156	93%	160	47%	158	45%				
6:33 PM	161	58%	158	92%	160	52%	160	52%				
6:48 PM	162	63%	158	92%	160	56%	160	57%				
7:03 PM	159	54%	155	93%	159	50%	161	48%				
7:18 PM	159	55%	162	90%	161	50%	161	49%				
7:33 PM	161	48%	161	92%	160	45%	160	43%				
7:48 PM	163	59%	158	90%	163	54%	161	54%				
AVG	160	57%	159	83%	160	52%	160	52%				

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	164	164	165	163			165
Min	154	155	156	156			154
Avg	160.1	159.3	160.0	159.9			159.8

Melt Shop / AOD Baghouse Baseline PM and Opabity Testing

Baghouse #2

Run 2 Fan Amps and Damper Positions

DATE: 4/19/05 Run 2 Time: 8:20 am - 4:08 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
8:15 AM	165	48%	160	55%	158	43%	160	42%				
8:30 AM	159	55%	158	64%	158	50%	157	50%				
8:45 AM	157	58%	158	68%	160	54%	157	54%				
9:00 AM	158	49%	162	57%	161	46%	159	44%				
9:15 AM	160	54%	158	63%	159	50%	161	49%				
9:30 AM	159	60%	156	71%	160	55%	159	55%				
9:45 AM	155	50%	155	58%	157	47%	153	44%				
10:00 AM												
10:15 AM	160	60%	160	71%	160	55%	160	55%				
10:30 AM	159	47%	159	55%	158	44%	161	41%				
10:45 AM	163	46%	160	53%	161	43%	160	40%				
11:00 AM												
				TESTING SUSPENDED								
12:40 PM	158	44%	154	50%	157	41%	161	37%				
12:55 PM	163	54%	161	63%	159	49%	164	49%				
1:10 PM	161	53%	165	63%	162	49%	163	49%				
1:25 PM	161	46%	162	53%	158	42%	159	40%				
1:40 PM	162	56%	163	67%	159	51%	162	52%				
1:55 PM	158	60%	161	71%	162	54%	158	55%				
2:10 PM	163	47%	161	54%	160	43%	159	41%				
2:25 PM	158	46%	160	53%	158	44%	158	41%				
2:40 PM	160	55%	162	65%	161	50%	162	50%				
2:55 PM	159	62%	160	73%	159	56%	159	56%				
3:10 PM	157	53%	159	63%	159	50%	154	49%				
3:25 PM	162	56%	160	66%	160	51%	159	51%				
3:40 PM	161	54%	160	64%	162	49%	162	49%				
3:55 PM	157	60%	157	71%	157	55%	161	56%				
4:10 PM	159	60%	160	71%	158	54%	161	55%				
AVG	160	53%	160	62%	159	49%	160	48%				

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	165	165	162	164			165
Min	155	154	157	153			153
Avg	159.8	159.6	159.3	159.6			159.6

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Baghouse #2

Run 3 Fan Amps and Damper Positions

DATE: 4/22/05 Run 3 Time: 8:33 am - 2:14 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
8:33 AM	162	49%	160	57%	157	43%	161	43%				
8:48 AM	158	53%	160	61%	154	61%	160	49%				
9:03 AM	160	51%	161	59%	156	100%	159	46%				
9:18 AM	165	53%	165	62%	158	14%	164	48%				
9:33 AM	160	54%	162	61%	157	51%	156	48%				
9:48 AM	156	57%	156	65%	160	52%	163	51%				
10:03 AM	162	55%	162	64%	164	49%	165	49%				
10:18 AM	161	48%	162	56%	161	45%	164	43%				
10:33 AM	162	52%	159	60%	159	48%	161	46%				
10:48 AM	158	59%	156	69%	159	54%	162	55%				
				TESTING SUSPENDED								
11:30 AM	157	51%	155	58%	158	47%	155	46%				
11:45 AM	157	51%	160	58%	161	47%	162	45%				
12:00 PM	161	56%	159	66%	164	51%	160	52%				
12:15 PM	166	60%	166	70%	165	54%	163	54%				
12:30 PM	159	56%	157	64%	159	51%	158	50%				
12:45 PM	156	63%	160	74%	163	57%	156	59%				
1:00 PM	167	62%	162	91%	163	56%	162	55%				
1:15 PM	140	50%	140	93%	137	46%	142	44%				
1:30 PM	163	63%	170	91%	159	58%	162	58%				
1:45 PM	163	66%	162	92%	158	59%	160	60%				
2:00 PM	165	59%	158	92%	163	54%	161	54%				
2:15 PM	159	61%	163	91%	164	55%	159	55%				
AVG	160	56%	160	71%	159	52%	160	50%				

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	167	170	165	165			170
Min	140	140	137	142			137
Avg	159.9	159.8	159.0	159.8			159.6

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 12:49:42 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	77Amps
Reverse Air Fan #2 Operating Current	81Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	57.6%
Main Fan #2 Inlet Damper Position	67.6%
Main Fan #3 Inlet Damper Position	52.6%
Main Fan #4 Inlet Damper Position	52.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	9.5inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 1:05:44 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	163Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	2Amps
Main Fan #6 Operating Current	2Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	62.5%
Main Fan #2 Inlet Damper Position	73.5%
Main Fan #3 Inlet Damper Position	57%
Main Fan #4 Inlet Damper Position	57%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	4.8inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 1:20:19 PM
Main Fan #1 Operating Current	164Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	51.7%
Main Fan #2 Inlet Damper Position	60.8%
Main Fan #3 Inlet Damper Position	47.6%
Main Fan #4 Inlet Damper Position	45.8%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	9.2inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 1:35:47 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	163Amps
Main Fan #3 Operating Current	165Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	62.8%
Main Fan #2 Inlet Damper Position	74.5%
Main Fan #3 Inlet Damper Position	57%
Main Fan #4 Inlet Damper Position	58.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	10.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 1:50:37 PM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	0Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	61.3%
Main Fan #2 Inlet Damper Position	71.9%
Main Fan #3 Inlet Damper Position	55.8%
Main Fan #4 Inlet Damper Position	55.2%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	10inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 2:05:40 PM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	61Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	51.3%
Main Fan #2 Inlet Damper Position	60.3%
Main Fan #3 Inlet Damper Position	47.2%
Main Fan #4 Inlet Damper Position	45.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	8.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 2:20:57 PM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	156Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	57Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	53.3%
Main Fan #2 Inlet Damper Position	62.9%
Main Fan #3 Inlet Damper Position	48.6%
Main Fan #4 Inlet Damper Position	47%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	8.8inWC

2:35 P.M.

FAN Inlet 5.4

DUCT PRESSURE 10.1 IN WC

	AMP.	AMPER.
IN #1	157	61
2	157	71
3	158	55
4	159	55
5	1	0
6	1	0
R. AIR #1	55	30%
#2	58	30%
#3	0	0.

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 2:50:14 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	163Amps
Main Fan #3 Operating Current	163Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	61.2%
Main Fan #2 Inlet Damper Position	72.8%
Main Fan #3 Inlet Damper Position	55.6%
Main Fan #4 Inlet Damper Position	55.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	10.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 3:02:26 PM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	156Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	58Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54.3%
Main Fan #2 Inlet Damper Position	63.2%
Main Fan #3 Inlet Damper Position	50%
Main Fan #4 Inlet Damper Position	48.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	9.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 3:17:00 PM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	52Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	62.7%
Main Fan #2 Inlet Damper Position	73.8%
Main Fan #3 Inlet Damper Position	57%
Main Fan #4 Inlet Damper Position	56.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	10.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 3:38:15 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	163Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	53.2%
Main Fan #2 Inlet Damper Position	91.8%
Main Fan #3 Inlet Damper Position	48.7%
Main Fan #4 Inlet Damper Position	47.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 3:50:56 PM
Main Fan #1 Operating Current	156Amps
Main Fan #2 Operating Current	164Amps
Main Fan #3 Operating Current	156Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	59.3%
Main Fan #2 Inlet Damper Position	90.3%
Main Fan #3 Inlet Damper Position	54.4%
Main Fan #4 Inlet Damper Position	53.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	10.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 4:06:28 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	157Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	71Amps
Reverse Air Fan #2 Operating Current	75Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	61.7%
Main Fan #2 Inlet Damper Position	91.2%
Main Fan #3 Inlet Damper Position	56.8%
Main Fan #4 Inlet Damper Position	56.2%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	10.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 4:21:22 PM
Main Fan #1 Operating Current	157Amps
Main Fan #2 Operating Current	157Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	73Amps
Reverse Air Fan #2 Operating Current	79Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54.7%
Main Fan #2 Inlet Damper Position	91%
Main Fan #3 Inlet Damper Position	49.7%
Main Fan #4 Inlet Damper Position	48.8%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	10.2inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 4:36:33 PM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	71Amps
Reverse Air Fan #2 Operating Current	74Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	60.4%
Main Fan #2 Inlet Damper Position	92.3%
Main Fan #3 Inlet Damper Position	54.7%
Main Fan #4 Inlet Damper Position	54.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	10.7inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 4:50:47 PM
Main Fan #1 Operating Current	164Amps
Main Fan #2 Operating Current	155Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	55%
Main Fan #2 Inlet Damper Position	92%
Main Fan #3 Inlet Damper Position	50.1%
Main Fan #4 Inlet Damper Position	48.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	6.1inWC
Baghouse Differential Duct Pressure	9.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 5:06:44 PM
Main Fan #1 Operating Current	154Amps
Main Fan #2 Operating Current	157Amps
Main Fan #3 Operating Current	156Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	56Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	57.9%
Main Fan #2 Inlet Damper Position	93%
Main Fan #3 Inlet Damper Position	52.6%
Main Fan #4 Inlet Damper Position	52%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 5:21:17 PM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	73Amps
Reverse Air Fan #2 Operating Current	77Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	62.6%
Main Fan #2 Inlet Damper Position	91.1%
Main Fan #3 Inlet Damper Position	57%
Main Fan #4 Inlet Damper Position	56.7%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.5inWC
Baghouse Differential Duct Pressure	10.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 5:35:58 PM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	164Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	50.1%
Main Fan #2 Inlet Damper Position	91.3%
Main Fan #3 Inlet Damper Position	45.9%
Main Fan #4 Inlet Damper Position	44.4%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.8inWC
Baghouse Differential Duct Pressure	9.5inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 5:50:20 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	157Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	57.9%
Main Fan #2 Inlet Damper Position	91.2%
Main Fan #3 Inlet Damper Position	52.8%
Main Fan #4 Inlet Damper Position	52.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 6:07:47 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	157Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	74Amps
Reverse Air Fan #2 Operating Current	78Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	61.4%
Main Fan #2 Inlet Damper Position	92.1%
Main Fan #3 Inlet Damper Position	56.6%
Main Fan #4 Inlet Damper Position	55%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.4inWC
Baghouse Differential Duct Pressure	10.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 6:21:54 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	2Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	51.1%
Main Fan #2 Inlet Damper Position	93.1%
Main Fan #3 Inlet Damper Position	46.8%
Main Fan #4 Inlet Damper Position	45.2%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	9.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 6:40:44 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	2Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	72Amps
Reverse Air Fan #2 Operating Current	76Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	57.8%
Main Fan #2 Inlet Damper Position	91.8%
Main Fan #3 Inlet Damper Position	52.4%
Main Fan #4 Inlet Damper Position	52.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 6:50:47 PM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	62.6%
Main Fan #2 Inlet Damper Position	92%
Main Fan #3 Inlet Damper Position	56.2%
Main Fan #4 Inlet Damper Position	57.4%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	6.1inWC
Baghouse Differential Duct Pressure	9.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 7:05:53 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	155Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54.4%
Main Fan #2 Inlet Damper Position	93.2%
Main Fan #3 Inlet Damper Position	49.6%
Main Fan #4 Inlet Damper Position	48.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 7:21:46 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	55%
Main Fan #2 Inlet Damper Position	90.4%
Main Fan #3 Inlet Damper Position	49.8%
Main Fan #4 Inlet Damper Position	48.8%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	10inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 7:35:24 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	48.5%
Main Fan #2 Inlet Damper Position	92.4%
Main Fan #3 Inlet Damper Position	44.9%
Main Fan #4 Inlet Damper Position	43.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.8inWC
Baghouse Differential Duct Pressure	9.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/18/2005/ 7:50:42 PM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	163Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	57Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	59.4%
Main Fan #2 Inlet Damper Position	89.6%
Main Fan #3 Inlet Damper Position	53.9%
Main Fan #4 Inlet Damper Position	54.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	9.9inWC

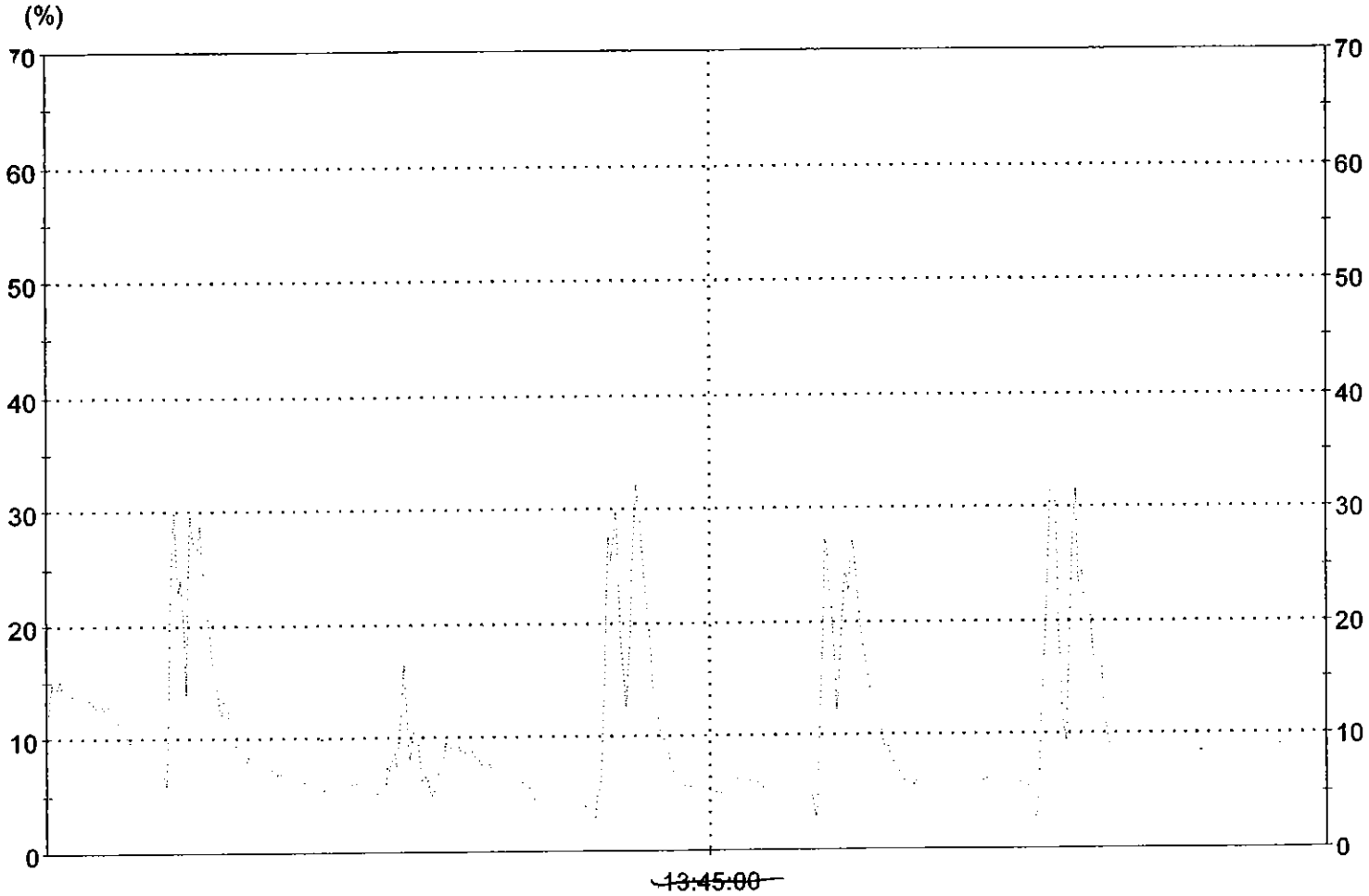
BH#1 BLDS Start 12:48p (PLC time) RUN 1

4/18/05

	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
12:48	1.4	1.2	2.1	8.5	1.2	0.8	0.8	0.8
13:03	1.0	0.5	0.8	2.6	0.4	0.8	0.6	0.8
13:18	0.2	0.4	0.8	3.6	0.7	1.4	1.1	0.8
13:33	1.0	1.3	1.1	5.4	2.0	5.0	1.0	0.9
13:48	0.8	0.4	0.8	0.7	1.2	0.8	0.9	0.8
14:03	0.9	1.1	1.6	0.0	1.8	0.4	2.3	1.1
14:18	0.8	0.8	0.8	0.1	1.2	0.8	1.1	0.8
14:33	0.8	0.8	0.8	0.7	1.1	0.8	0.7	1.5
14:48	0.8	1.5	1.3	0.8	1.6	8.2	1.1	1.4
15:03	1.4	4.7	4.2	12.6	8.0	2.6	0.3	2.8
15:18	1.9	0.5	0.9	7.2	0.7	0.8	4.3	1.2
15:33	0.7	0.8	0.5	4.5	1.0	5.6	1.2	0.8
15:48	1.0	1.5	1.4	3.0	1.0	0.8	0.8	1.8
16:03	0.2	0.5	0.4	3.5	1.2	1.6	1.1	0.7
16:18	0.8	0.7	0.7	0.9	0.8	0.4	1.0	0.7
16:33	1.6	1.8	1.6	1.8	1.3	1.7	0.7	0.8
16:48	0.7	0.7	0.7	0.7	1.1	0.8	0.8	0.7
Run 2 17:03	1.5	0.7	0.7	1.2	0.6	0.7	1.0	0.7
17:18	0.7	1.2	0.8	0.1	1.2	1.2	2.2	0.8
17:33	0.8	1.0	1.2	0.5	1.0	0.8	1.1	1.5
17:48	07	07	0.7	0.6	0.8	0.7	0.8	1.5
18:03	0.8	0.8	1.6	0.6	0.8	0.7	4.1	1.1

	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
10:18	1.5	0.7	0.7	0.4	1.1	0.7	1.0	0.7
18:33	1.3	0.7	0.7	1.9	1.7	0.7	1.4	1.1
18:48	1.1	1.2	1.1	1.7	0.3	.06	0.9	0.8
19:03	1.4	0.7	0.7	1.2	5.5	0.9	1.2	0.7
19:18	2.8	1.8	0.8	1.3	0.9	0.9	1.2	0.8
19:33	07	0.7	0.7	0.6	1.5	4.3	0.3	0.7
19:48	1.2	0.8	0.8	1.4	0.8	0.8	0.8	0.7

[DustSensor]



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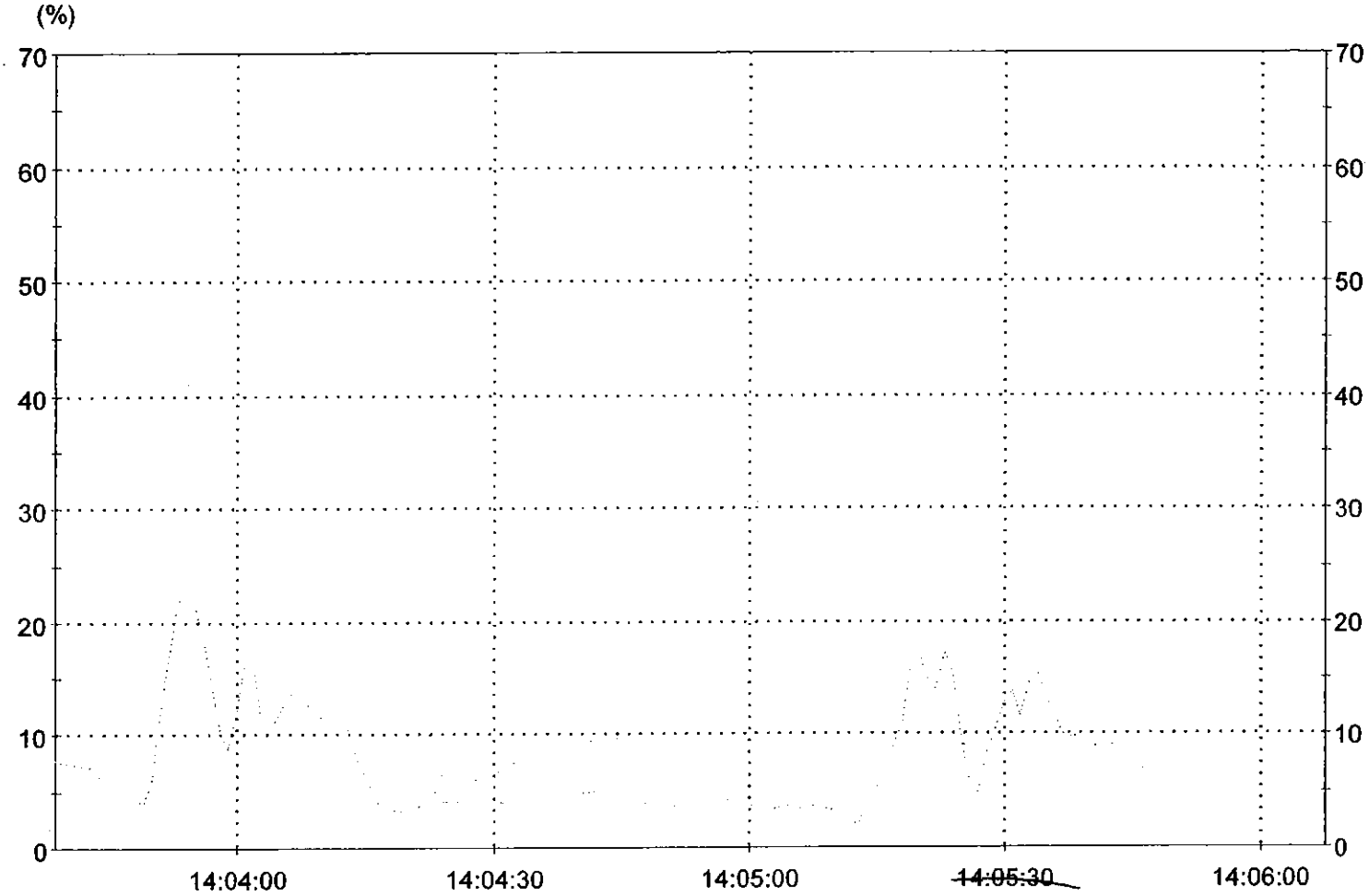
12:50 PM

[DustSensor]



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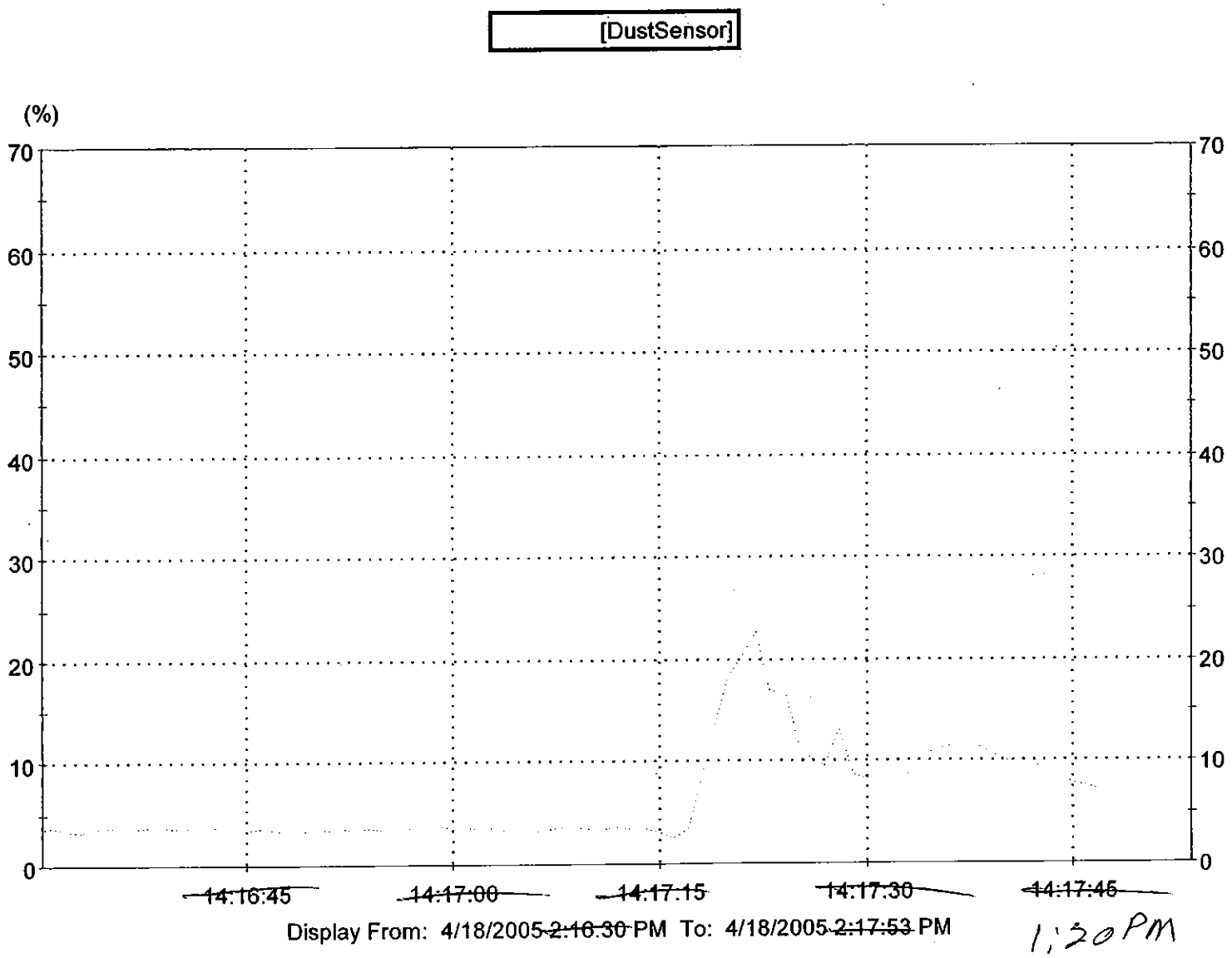
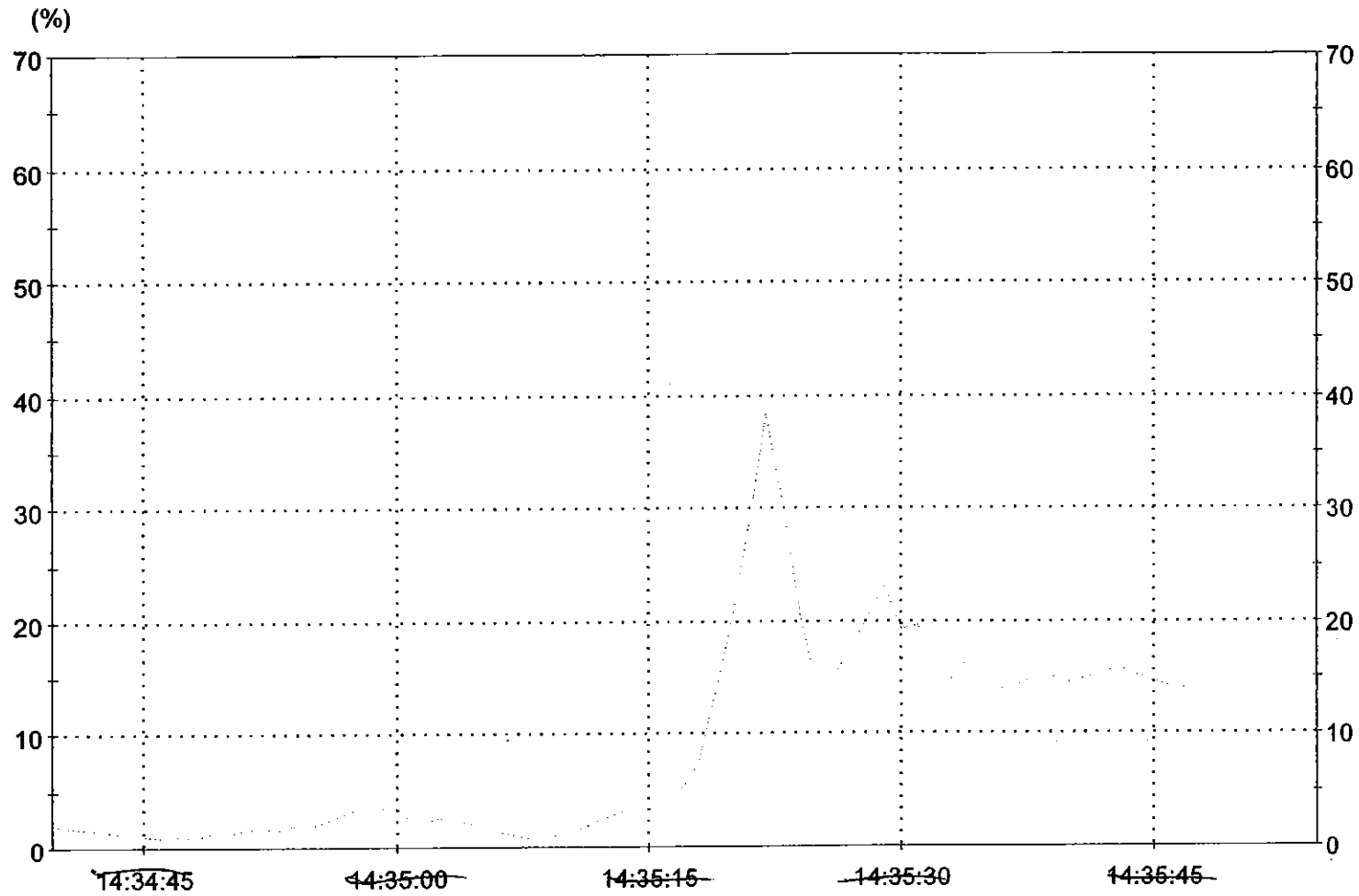
1:05 PM


[DustSensor]
(%)
70
60
50
40
30
20
10
0
14:16:45
14:17:00
14:17:15
14:17:30
14:17:45
Display From: 4/18/2005 2:16:30 PM To: 4/18/2005 2:17:53 PM
1:20 PM

[DustSensor]



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1:35 PM

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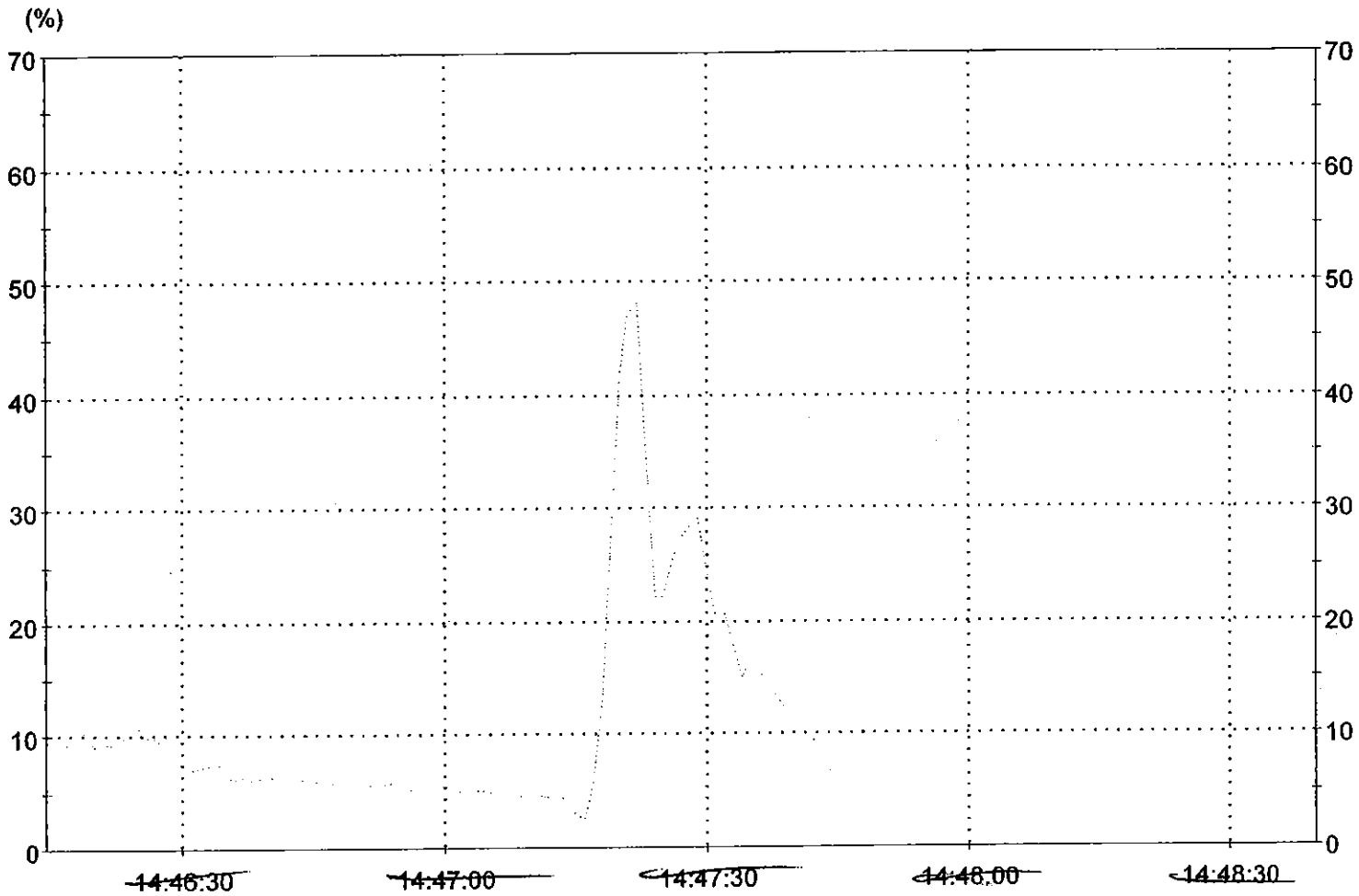

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1:50 PM

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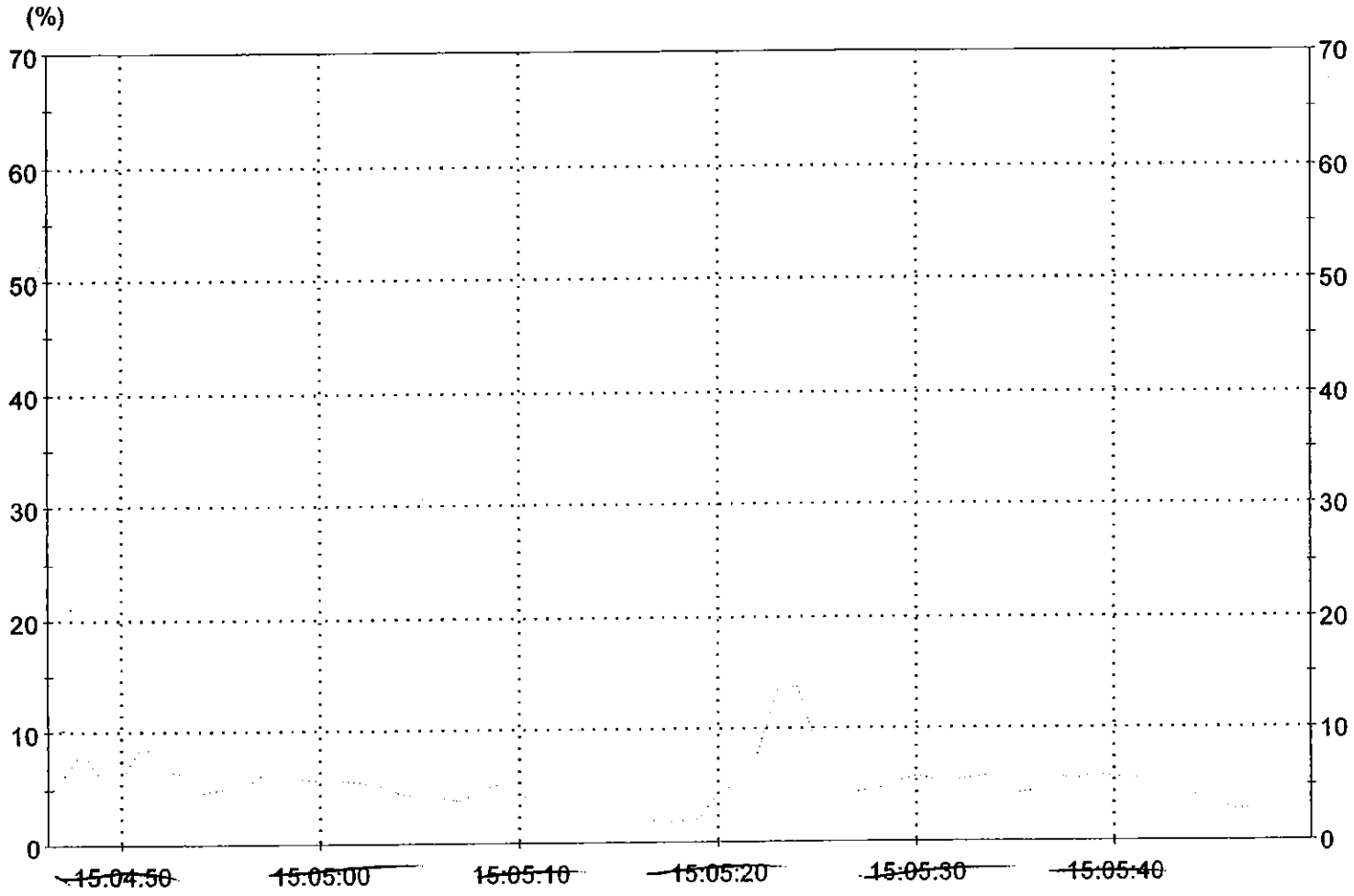

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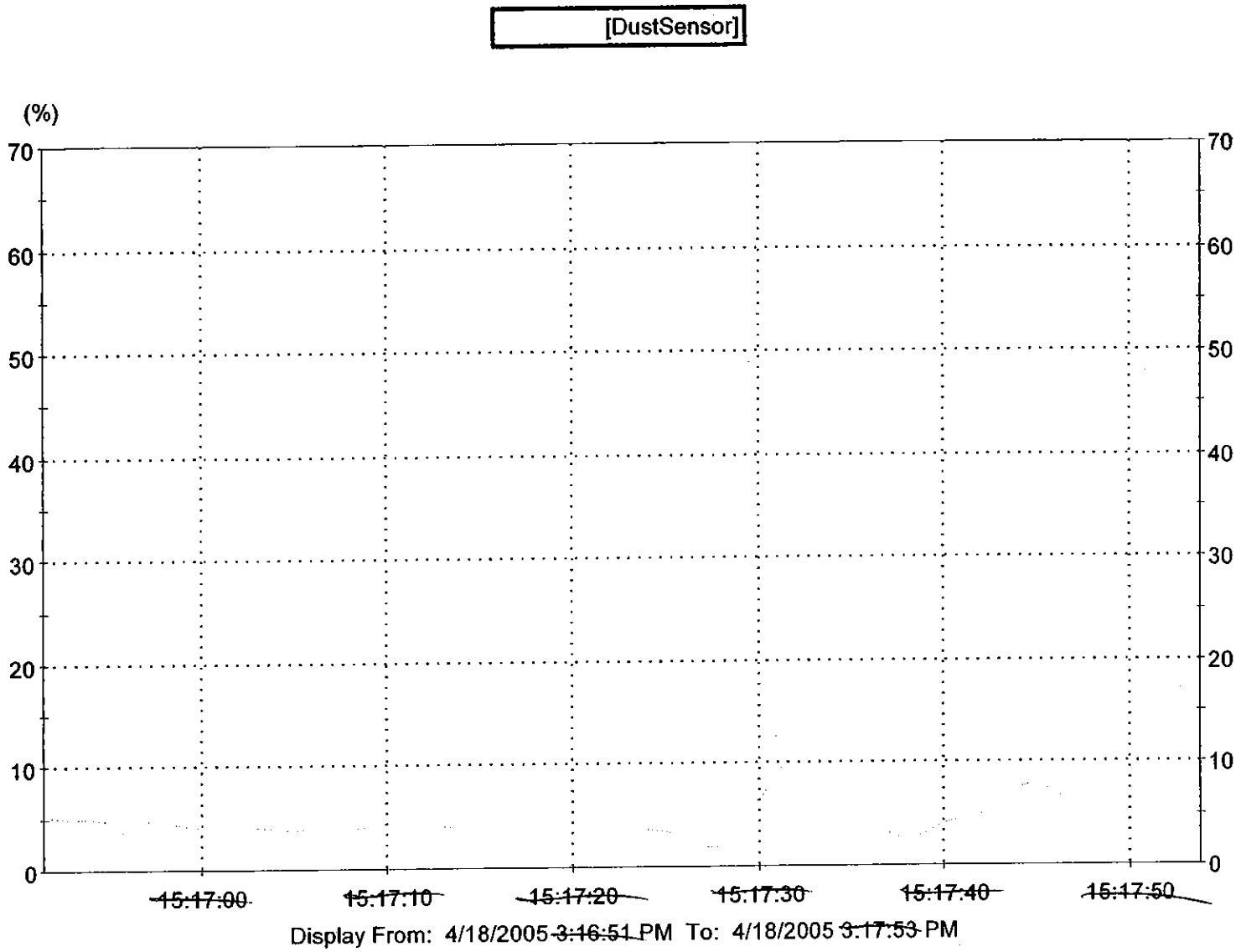
2:05 PM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(%)
70
60
50
40
30
20
10
0
15:17:00
15:17:10
15:17:20
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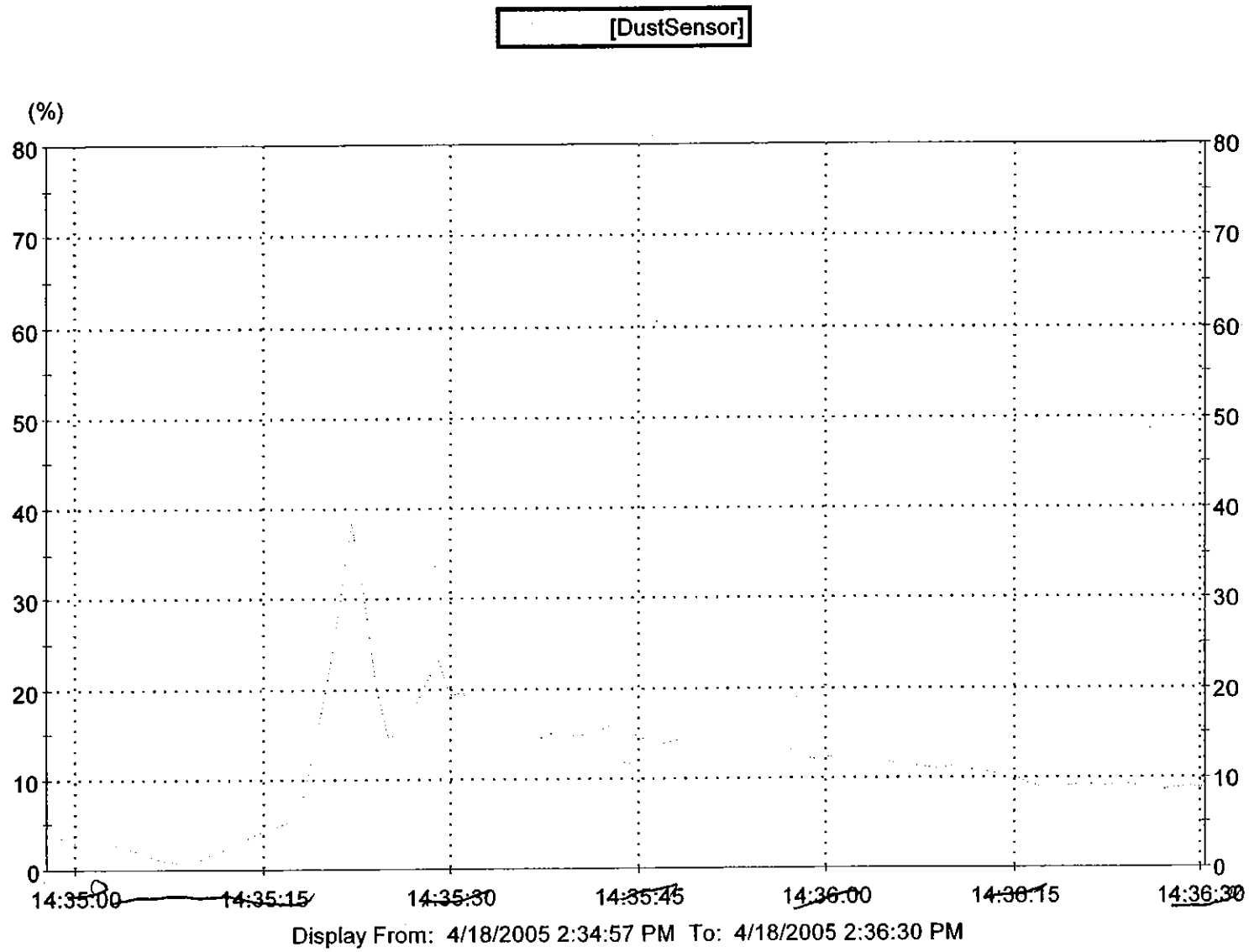
2:20 PM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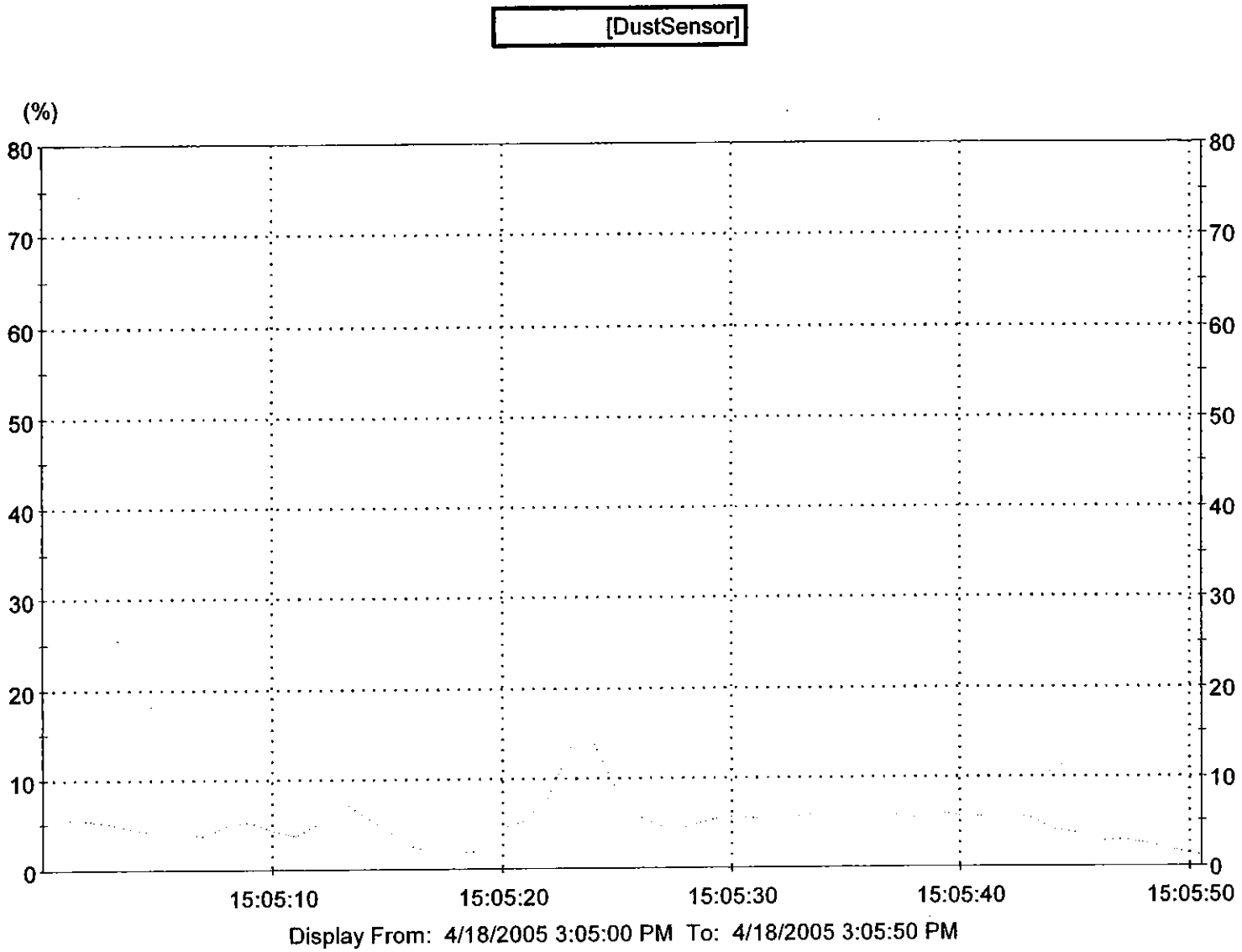
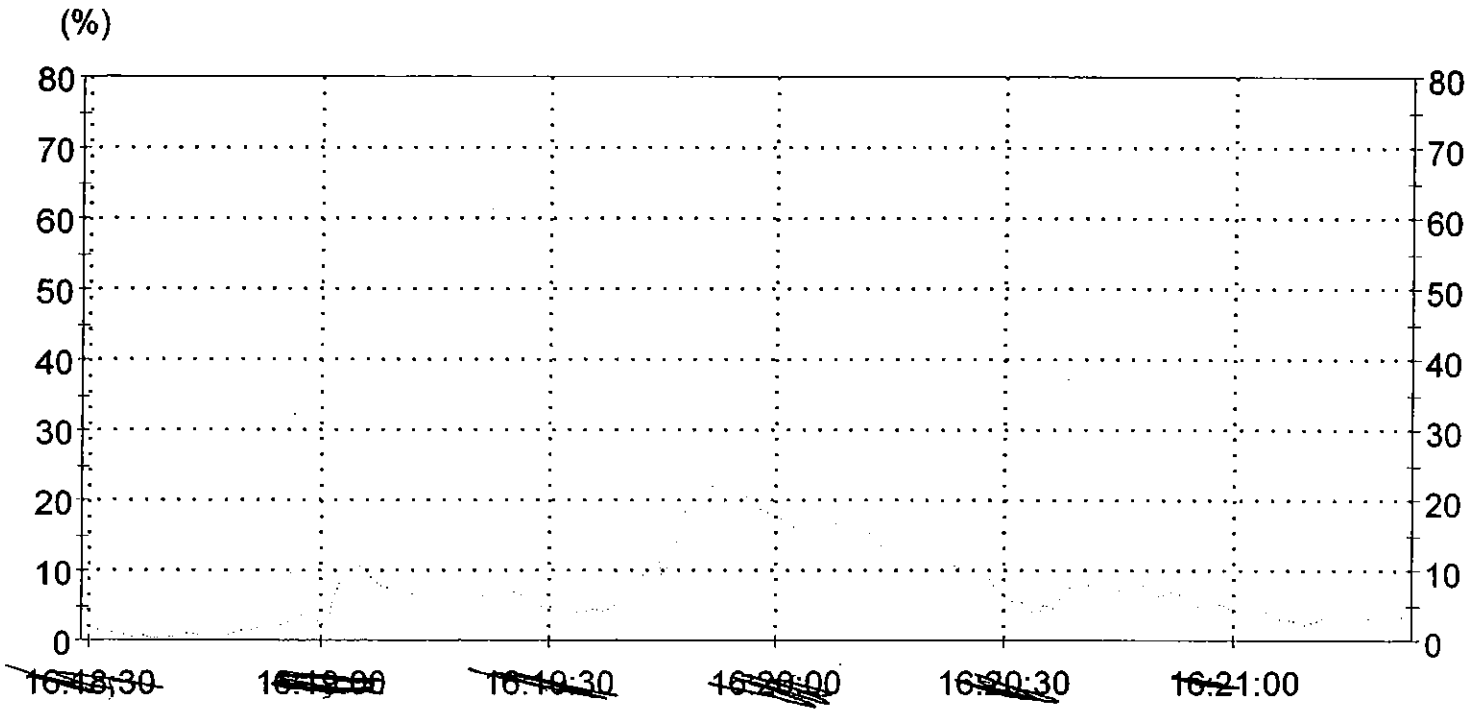
(%)
80
70
60
50
40
30
20
10
0
14:35:00
14:35:15
14:35:30
14:35:45
14:36:00
14:36:15
14:36:30
Display From: 4/18/2005 2:34:57 PM To: 4/18/2005 2:36:30 PM

2.38 PM-


[DustSensor]
(%)
80
70
60
50
40
30
20
10
0
15:05:10
15:05:20
15:05:30
15:05:40
15:05:50
Display From: 4/18/2005 3:05:00 PM To: 4/18/2005 3:05:50 PM

3:05

[DustSensor]



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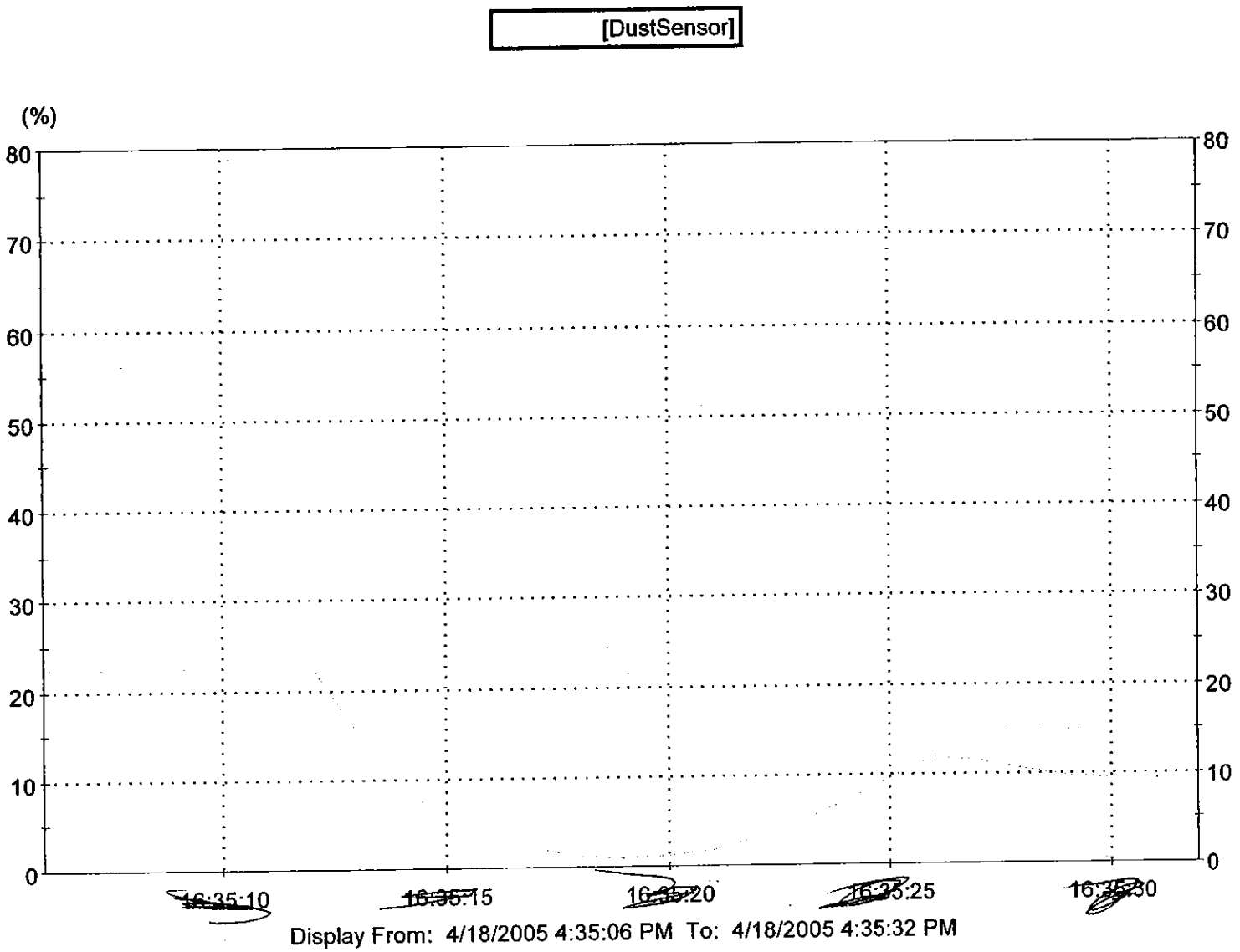
15 20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(%)
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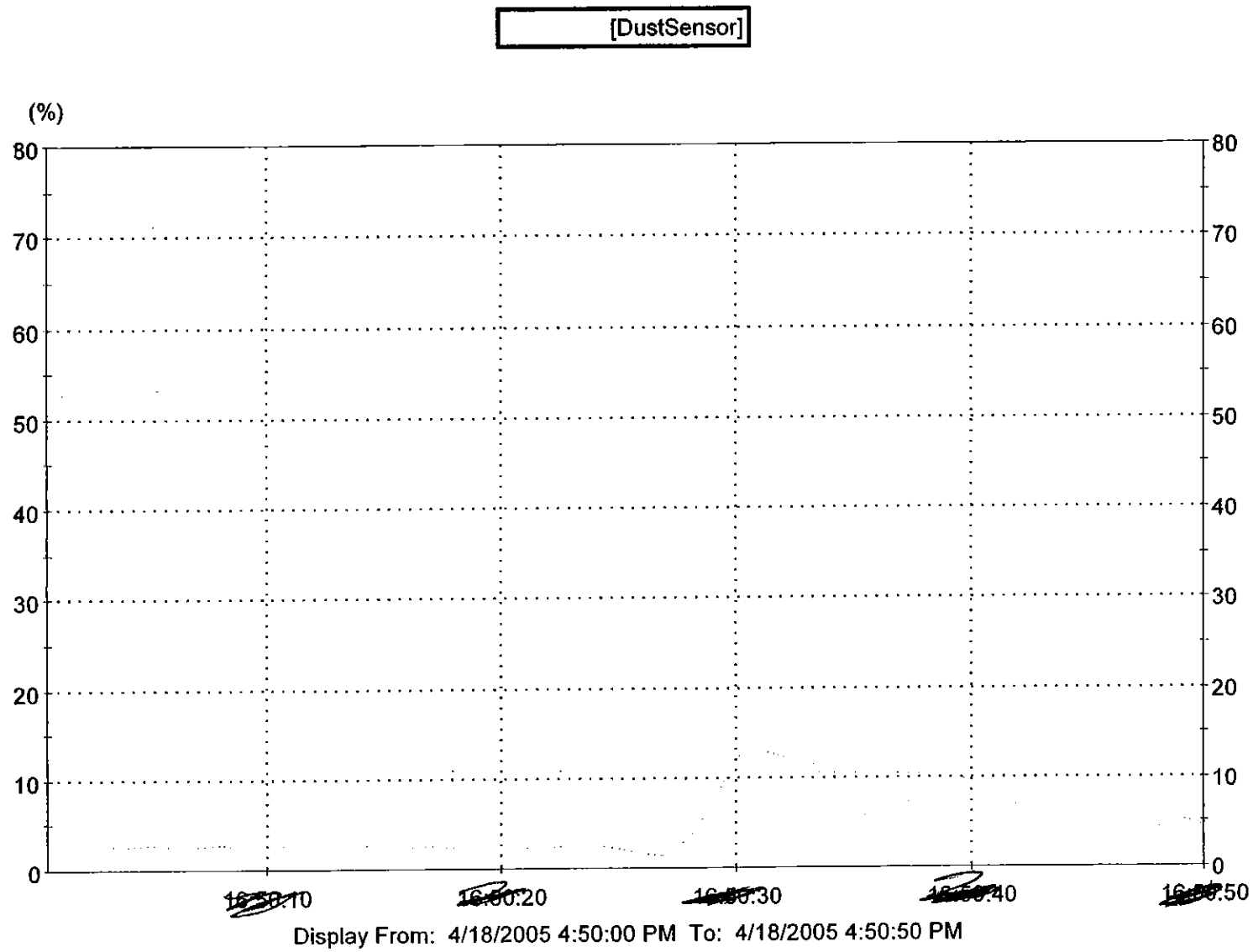
[DustSensor]
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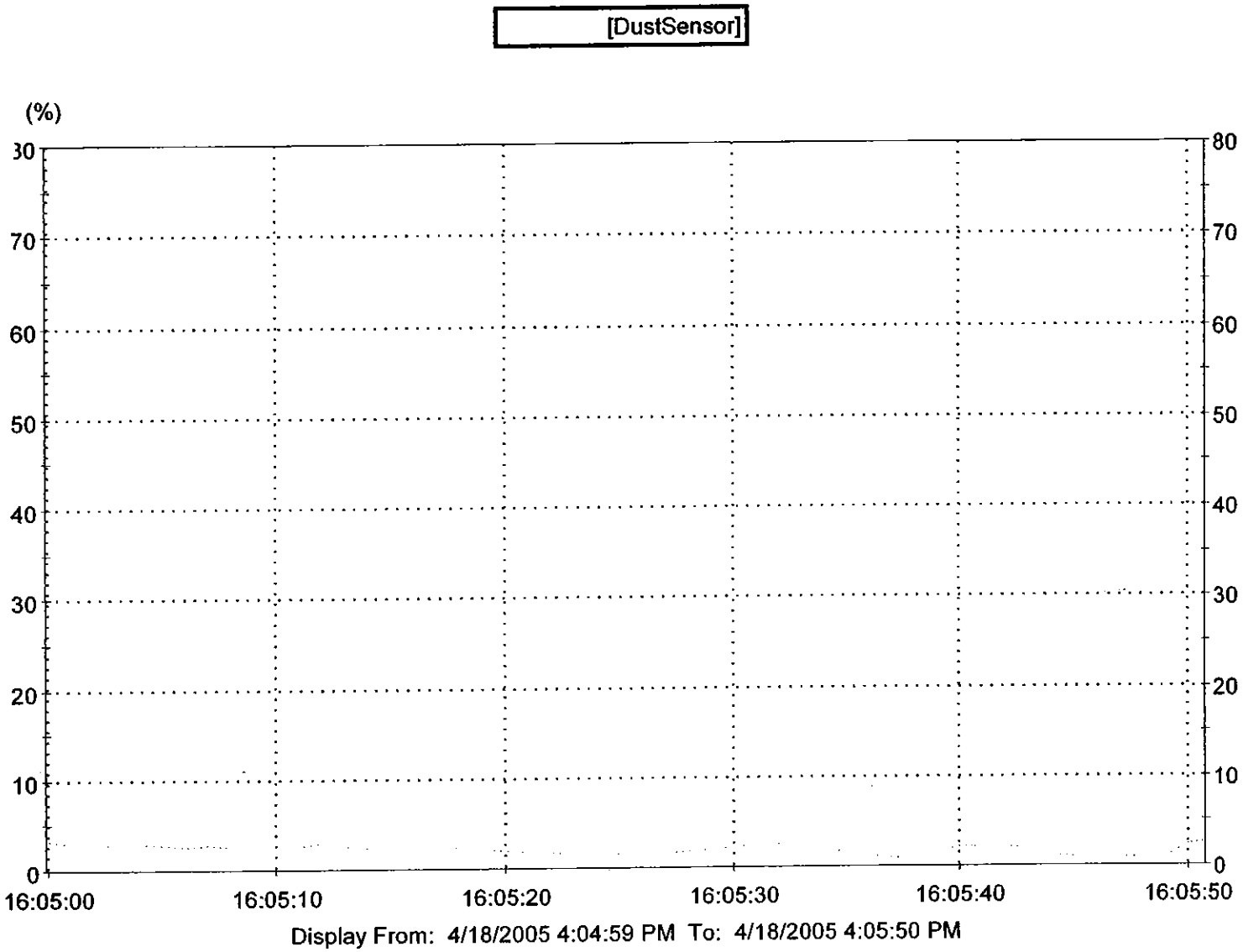
3:50 PM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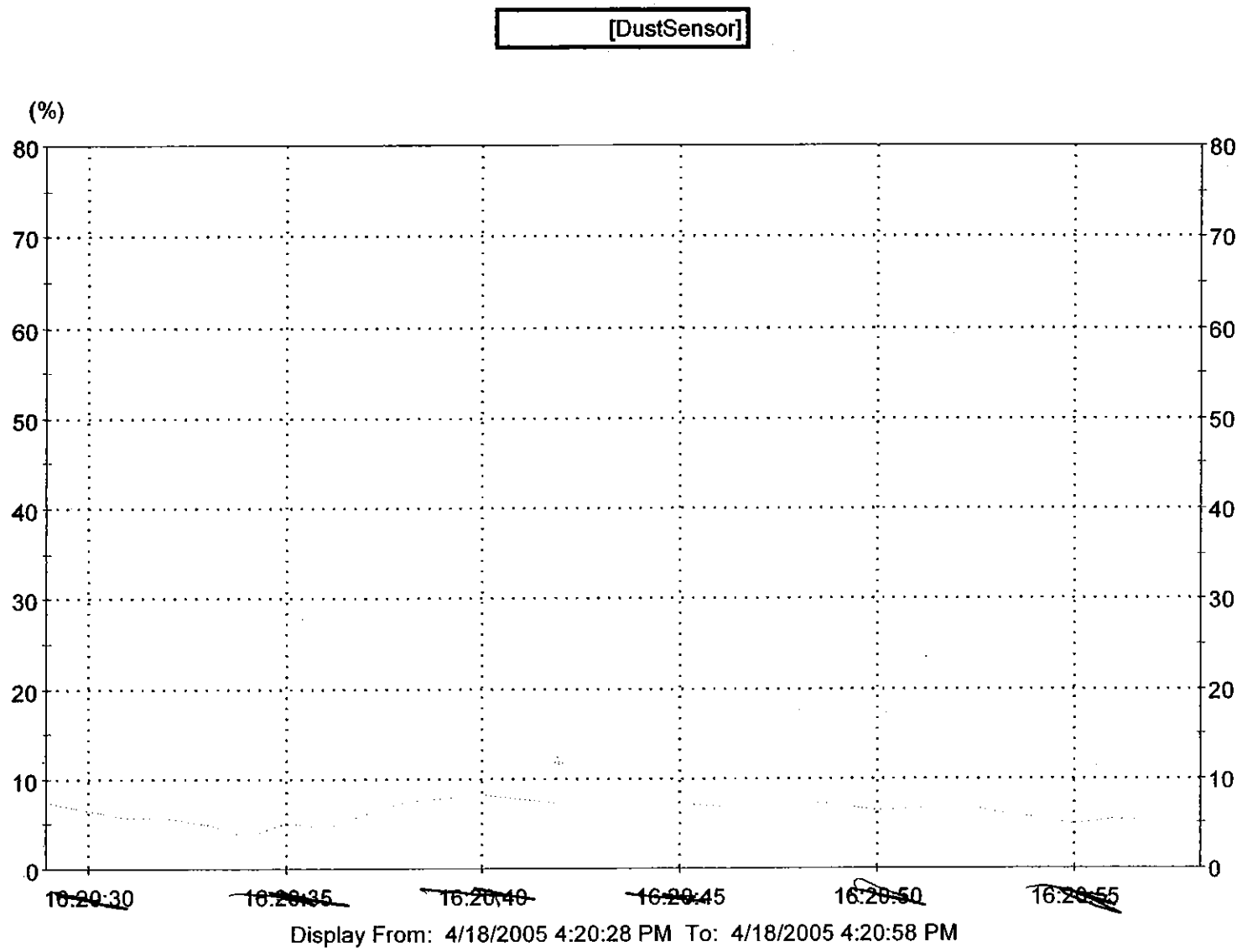
4:05 PM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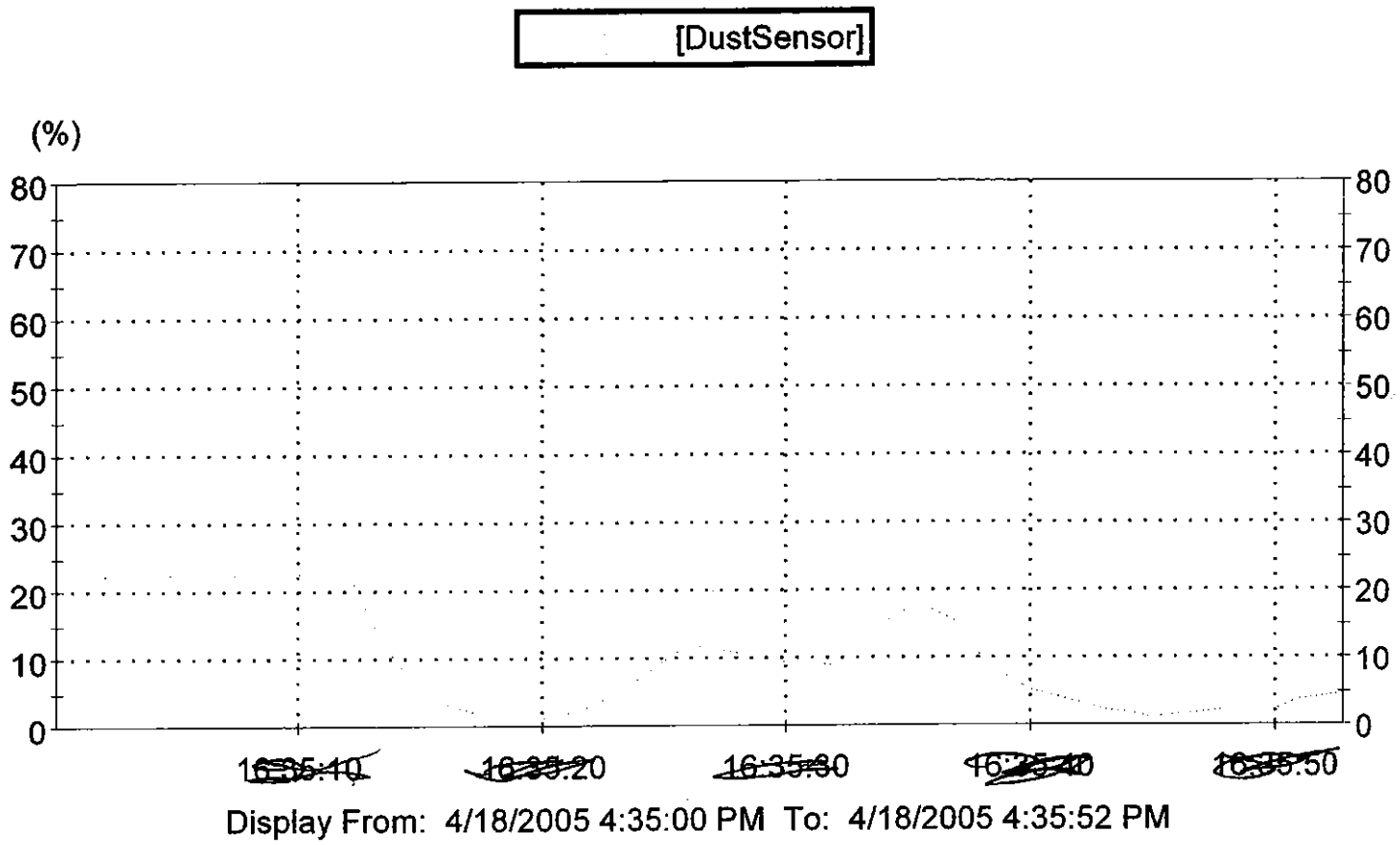
18
4:20 PM


[DustSensor]
(%)
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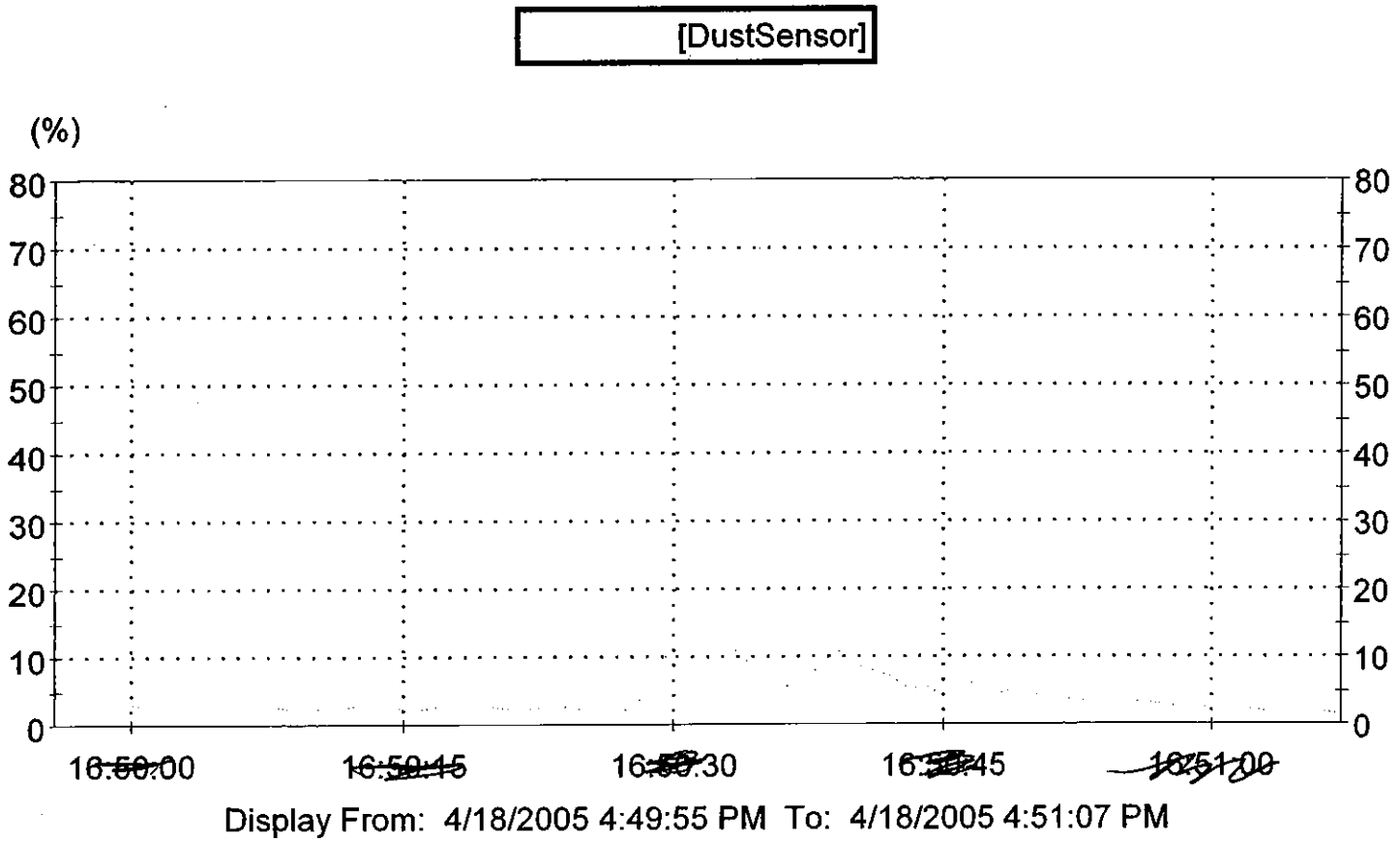
4:35 PM


[DustSensor]
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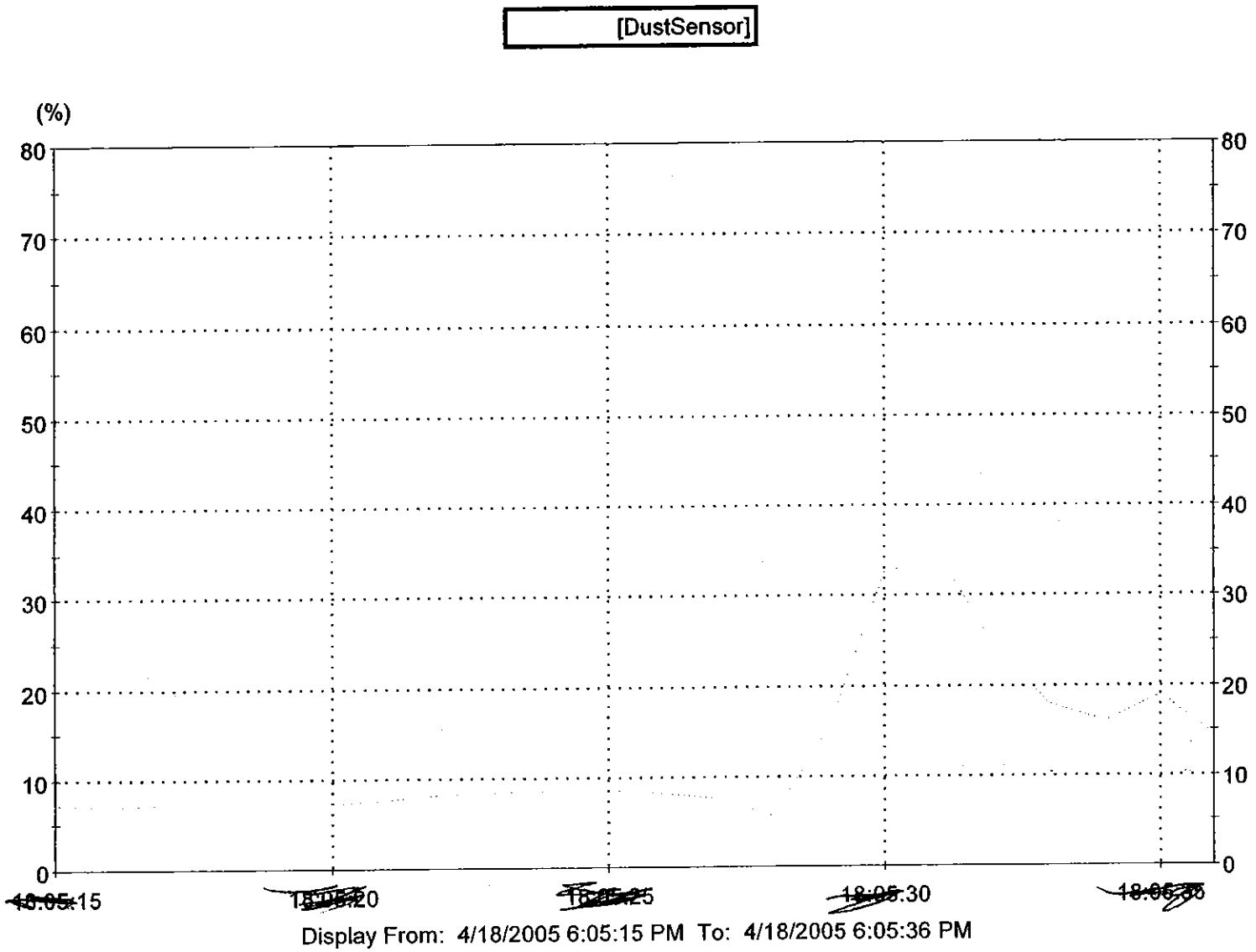
4:50 PM


[DustSensor]
(%)
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10
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18:05:15
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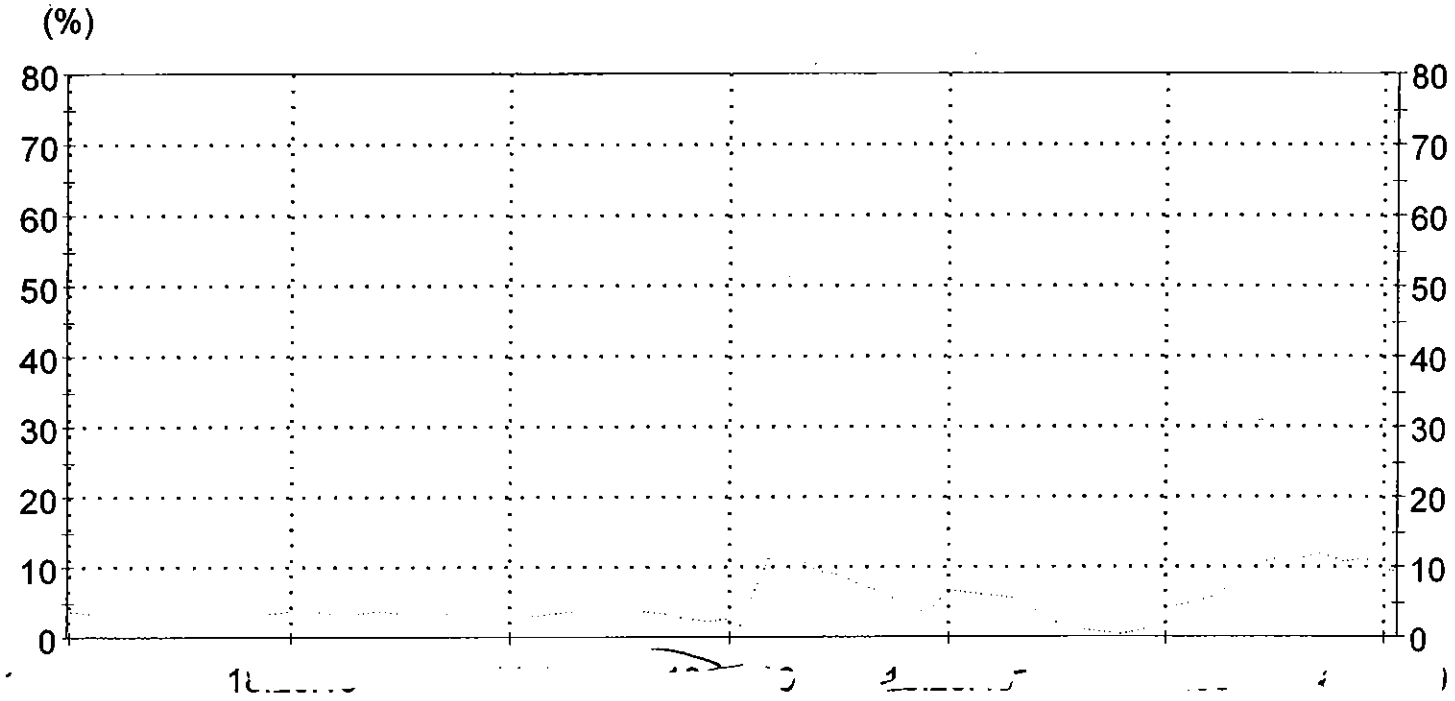
Display From: 4/18/2005 6:05:15 PM To: 4/18/2005 6:05:36 PM

5:05 PM

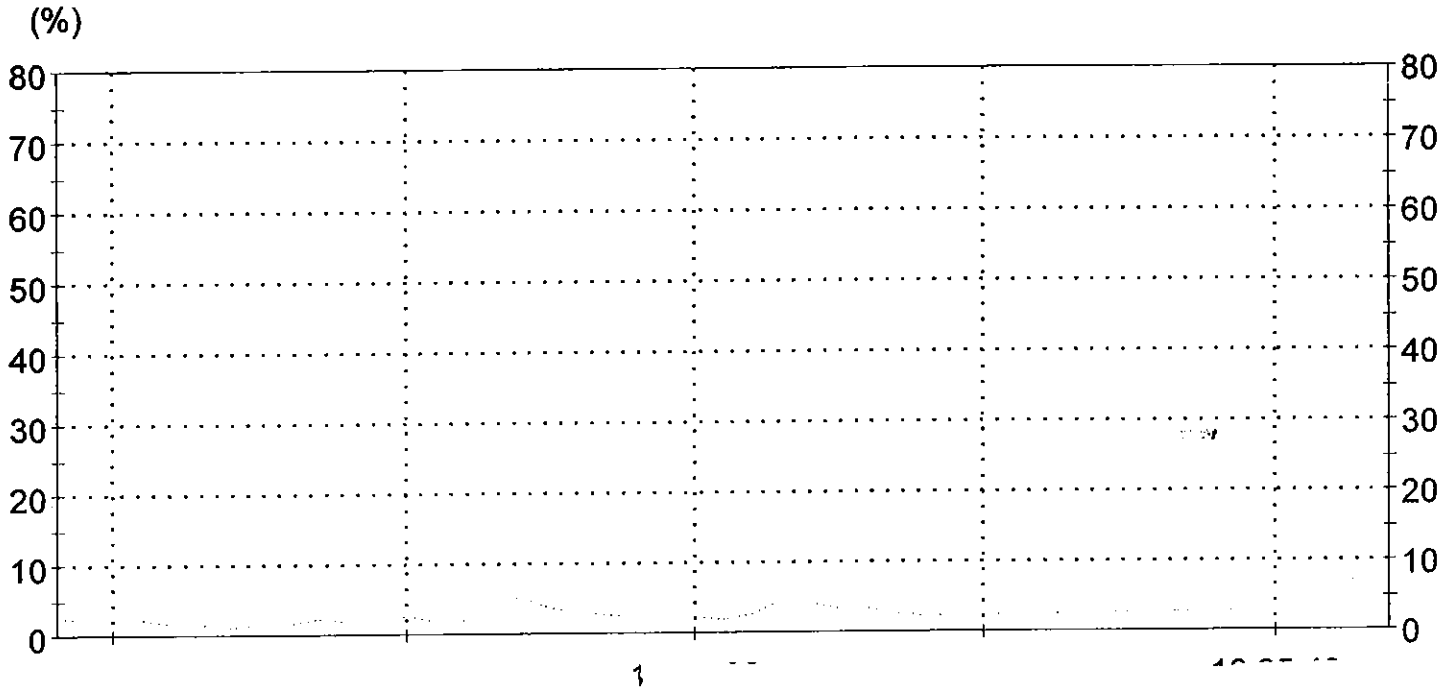
[DustSensor]



Display From: 4/18/2005 6:19:59 PM To: 4/18/2005 6:21:00 PM

5:20 PM

[DustSensor]



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18 5:35 PM

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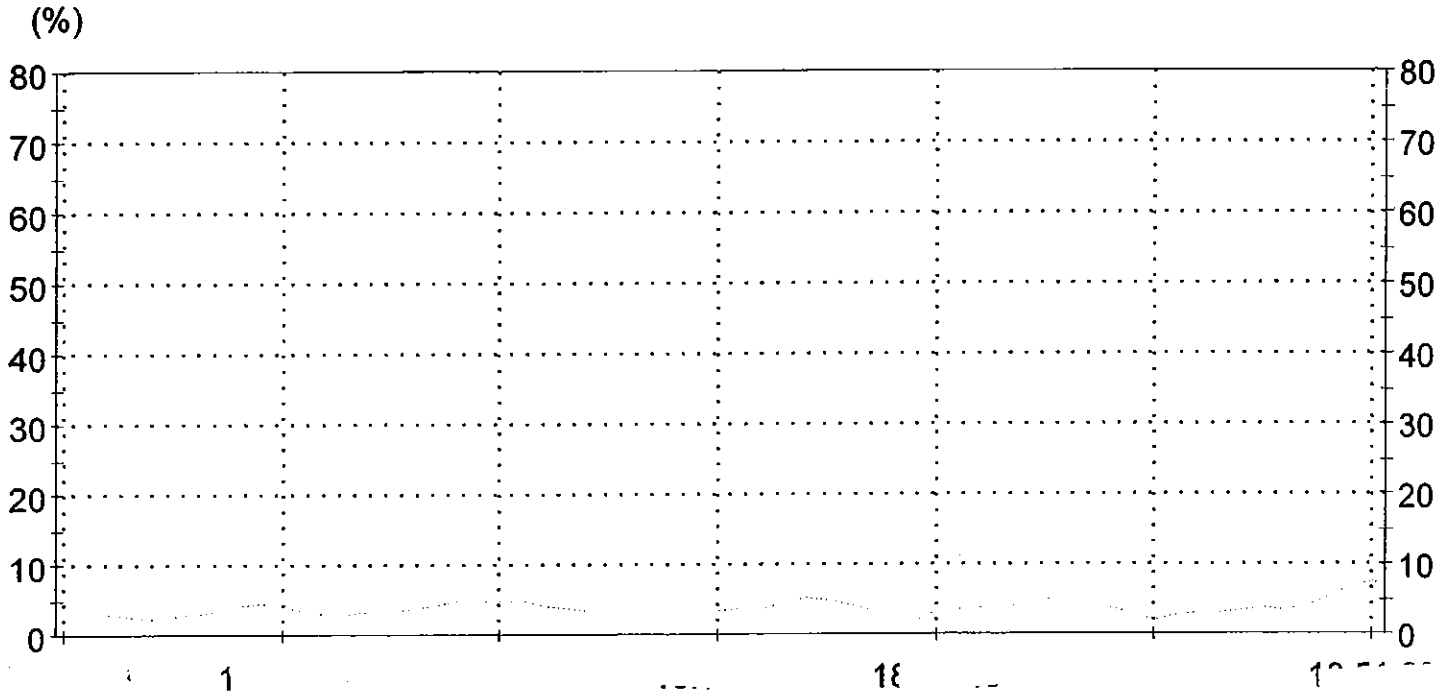

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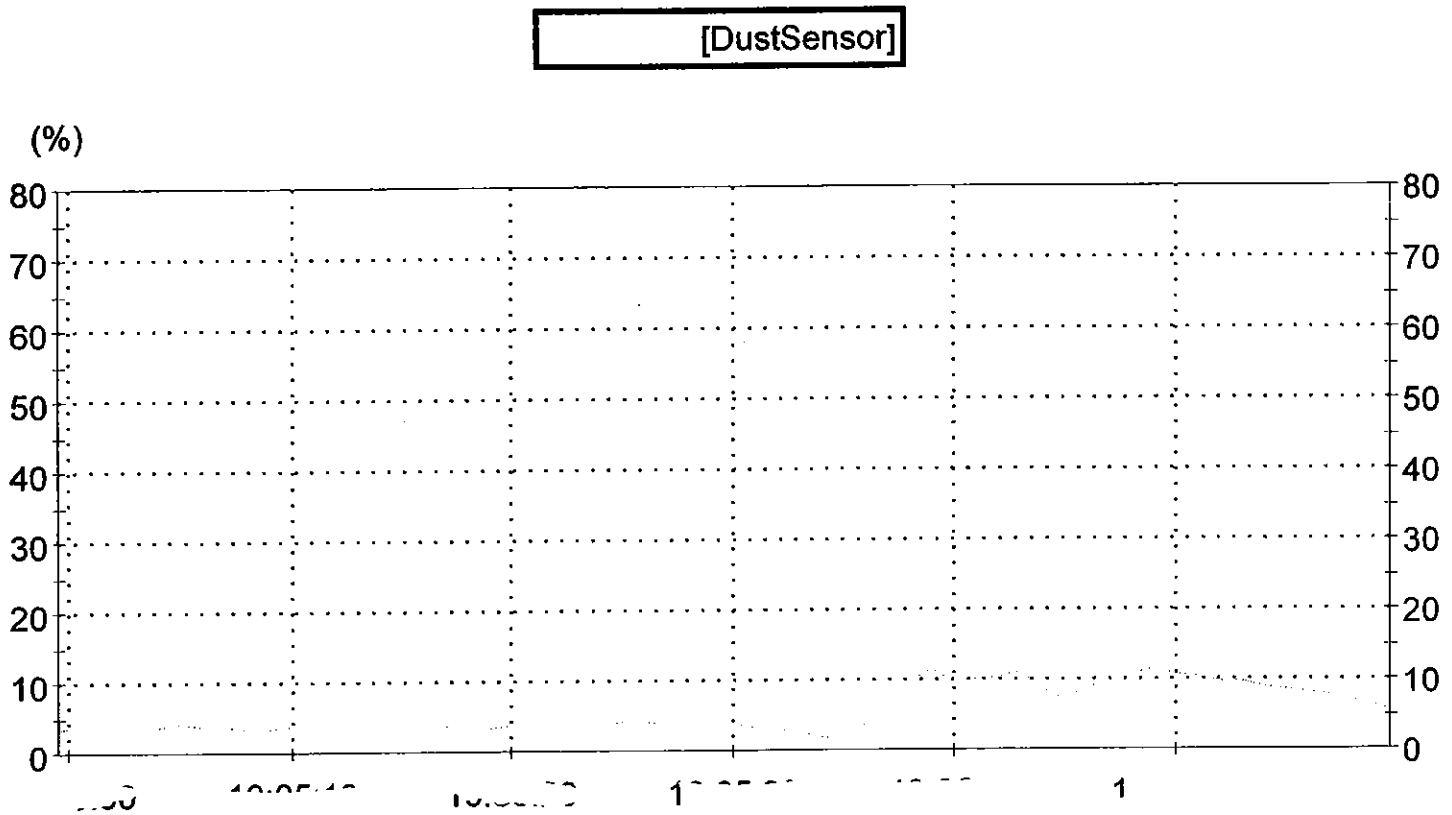
5:50 PM



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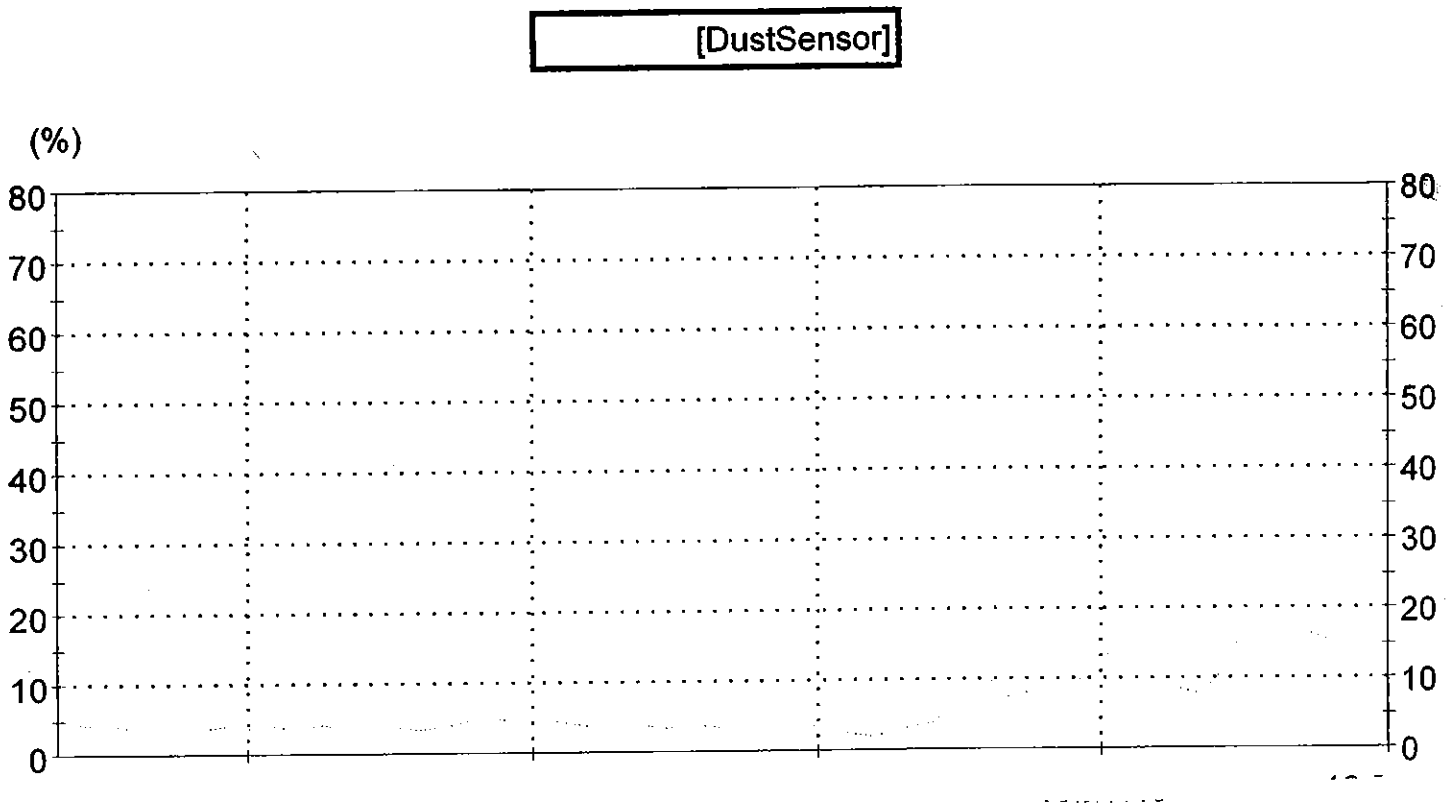

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6:20 P.M.

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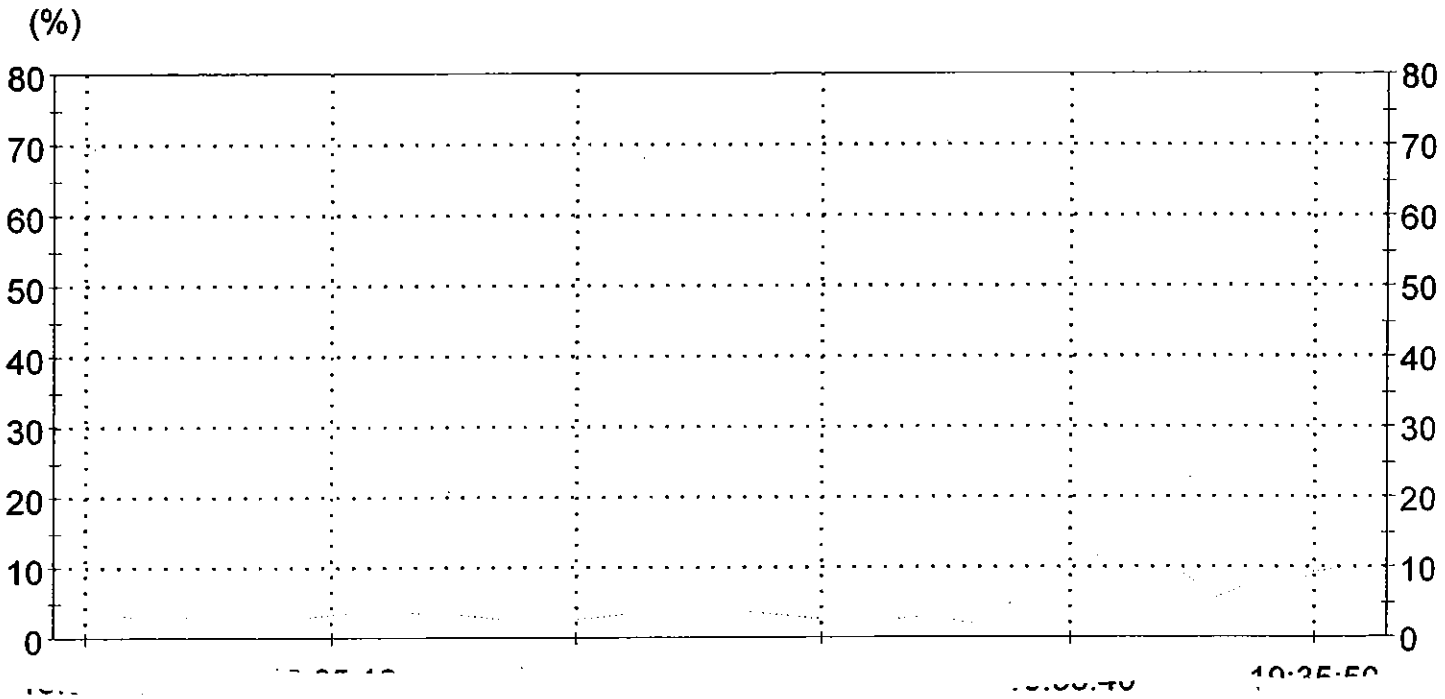

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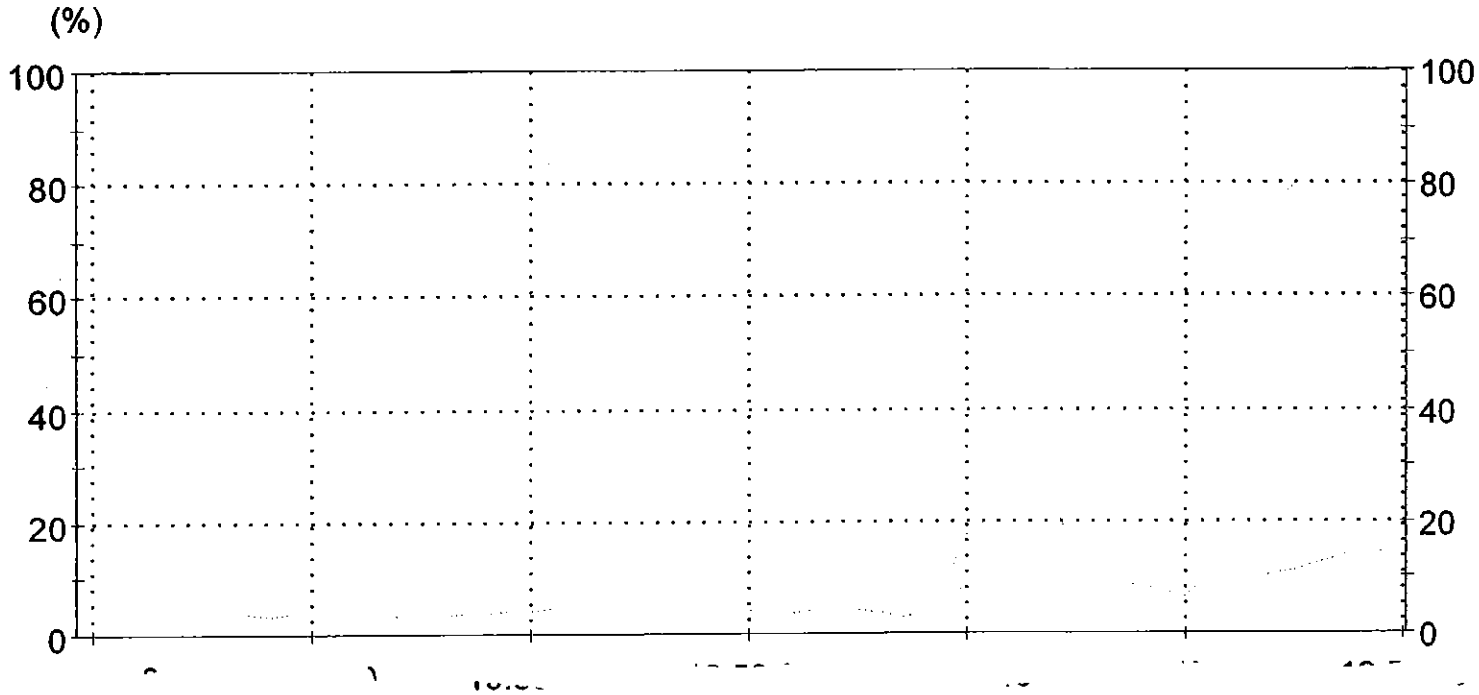

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6:50 Pm

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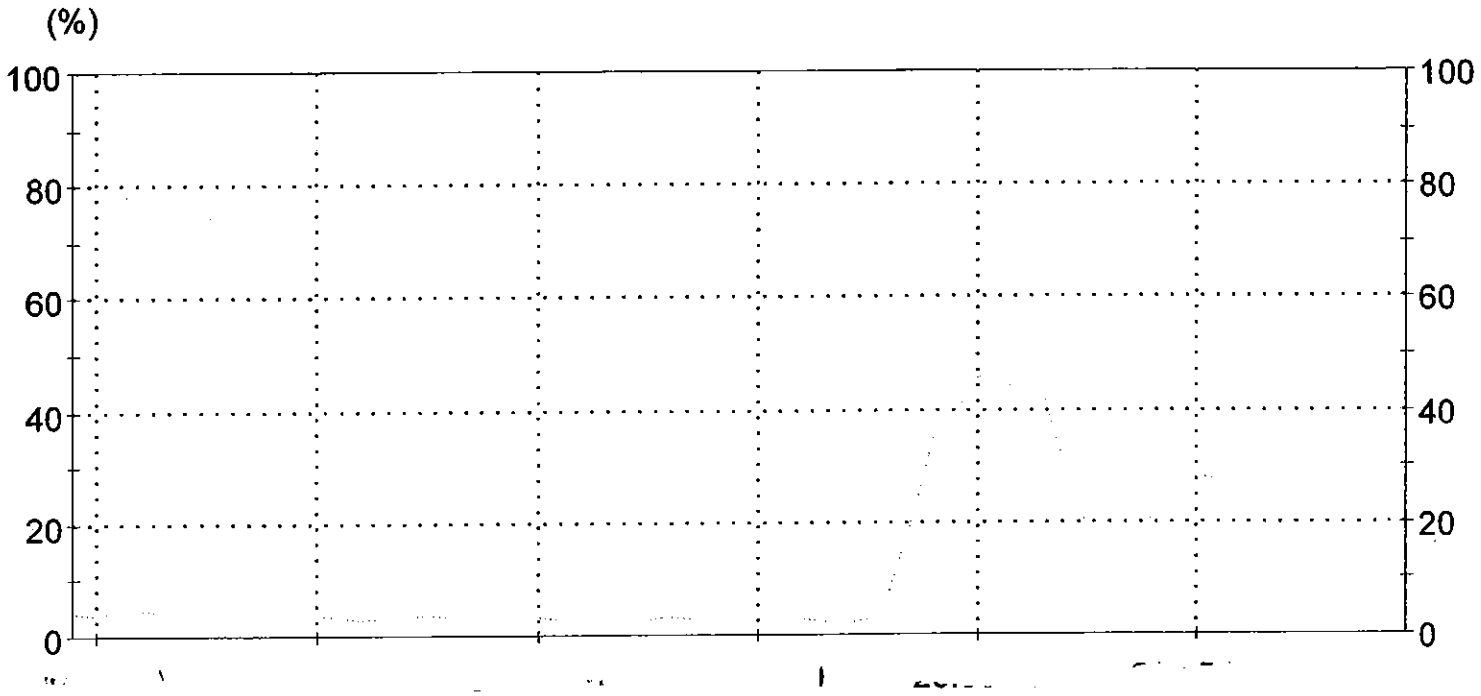

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7:05 P.M.

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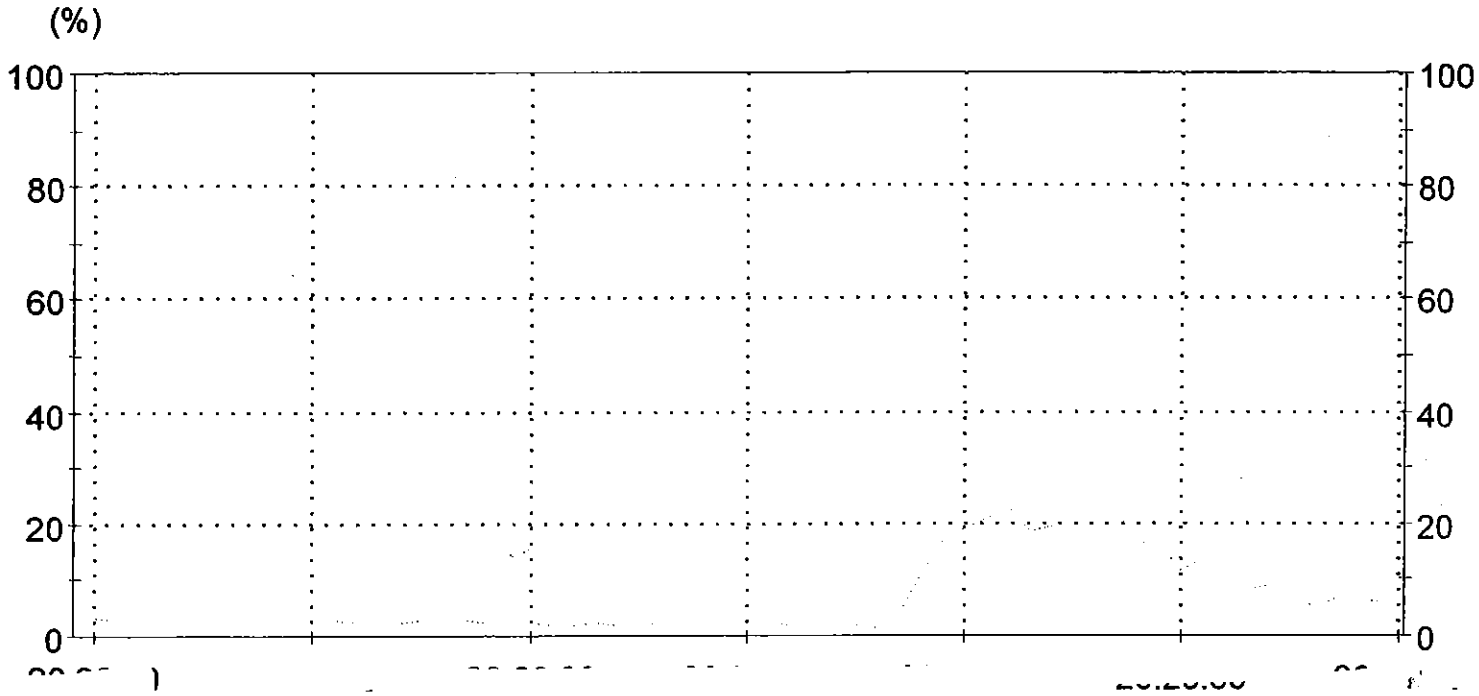

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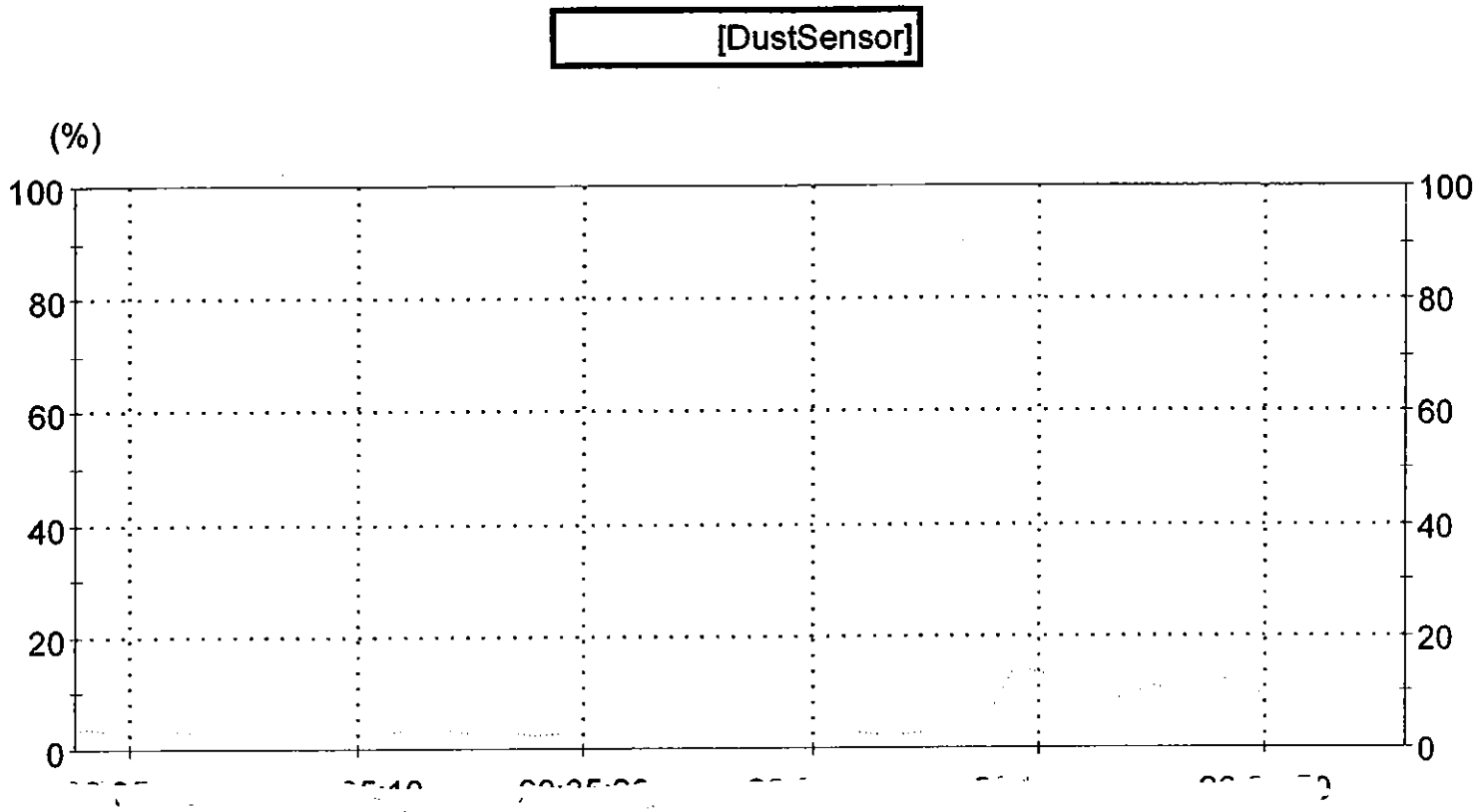
7:21 PM



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7:35 P.M.

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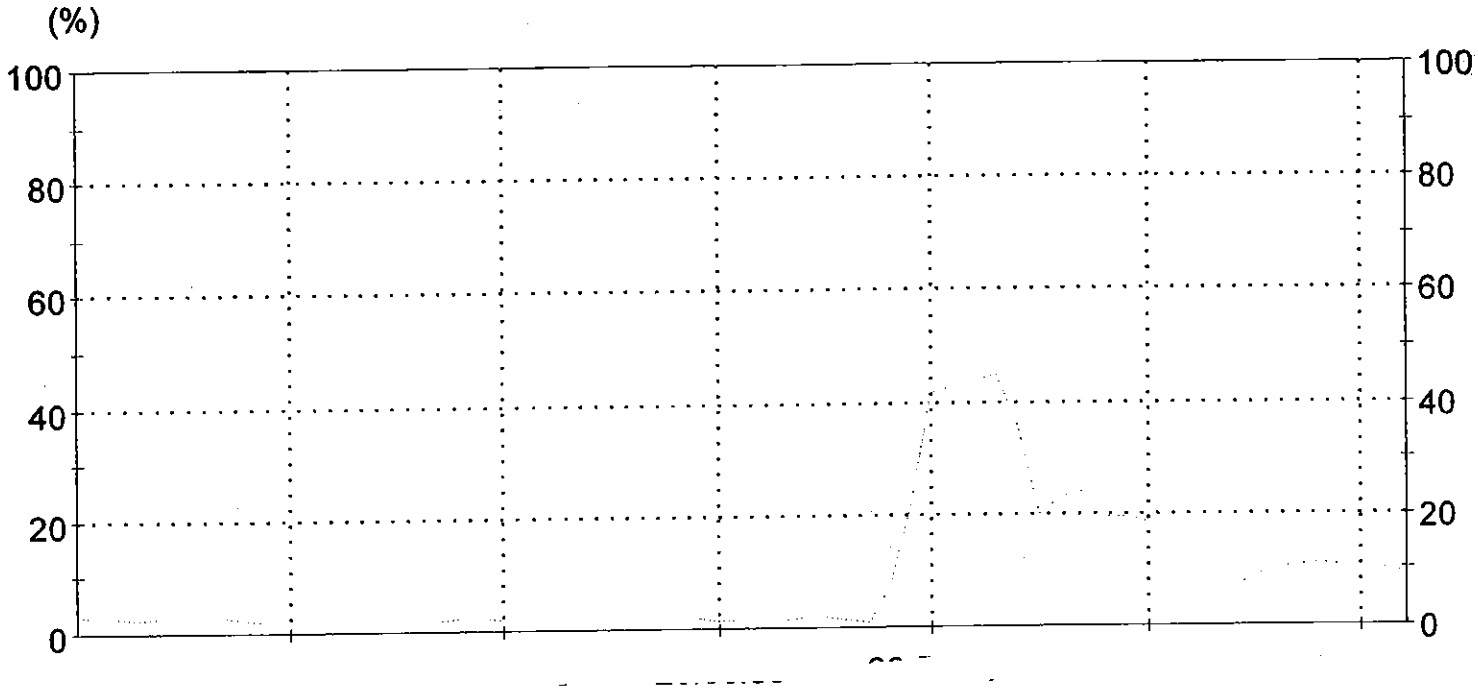


Display From: 4/18/2005 8:50:00 PM To: 4/18/2005 8:51:02 PM

7:50 PM

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 8:15:57 AM
Main Fan #1 Operating Current	165Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	77Amps
Reverse Air Fan #2 Operating Current	79Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	47.6%
Main Fan #2 Inlet Damper Position	54.6%
Main Fan #3 Inlet Damper Position	43.4%
Main Fan #4 Inlet Damper Position	42%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.2%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	8.6inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 8:31:05 AM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	157Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	76Amps
Reverse Air Fan #2 Operating Current	82Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54.9%
Main Fan #2 Inlet Damper Position	63.9%
Main Fan #3 Inlet Damper Position	50.4%
Main Fan #4 Inlet Damper Position	50.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.2%
Fan Inlet Duct Pressure	4.8inWC
Baghouse Differential Duct Pressure	9.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 8:45:36 AM
Main Fan #1 Operating Current	157Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	157Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	55Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	58%
Main Fan #2 Inlet Damper Position	67.8%
Main Fan #3 Inlet Damper Position	53.7%
Main Fan #4 Inlet Damper Position	53.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.2%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	8.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 9:01:22 AM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	78Amps
Reverse Air Fan #2 Operating Current	80Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	49.3%
Main Fan #2 Inlet Damper Position	57.2%
Main Fan #3 Inlet Damper Position	45.9%
Main Fan #4 Inlet Damper Position	43.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.2%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	8.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 9:15:59 AM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	74Amps
Reverse Air Fan #2 Operating Current	81Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54%
Main Fan #2 Inlet Damper Position	63.3%
Main Fan #3 Inlet Damper Position	50.3%
Main Fan #4 Inlet Damper Position	48.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	9.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 9:30:54 AM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	60.1%
Main Fan #2 Inlet Damper Position	70.8%
Main Fan #3 Inlet Damper Position	54.8%
Main Fan #4 Inlet Damper Position	54.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	9.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 9:45:39 AM
Main Fan #1 Operating Current	155Amps
Main Fan #2 Operating Current	155Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	153Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	49.7%
Main Fan #2 Inlet Damper Position	57.6%
Main Fan #3 Inlet Damper Position	46.7%
Main Fan #4 Inlet Damper Position	44.3%
Main Fan #5 Inlet Damper Position	0.1%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	7.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 10:15:21 AM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	2Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	57Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	60.5%
Main Fan #2 Inlet Damper Position	70.6%
Main Fan #3 Inlet Damper Position	54.6%
Main Fan #4 Inlet Damper Position	55%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 10:33:25 AM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	54Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	47.1%
Main Fan #2 Inlet Damper Position	54.6%
Main Fan #3 Inlet Damper Position	43.5%
Main Fan #4 Inlet Damper Position	41.4%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	8.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 10:46:41 AM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	57Amps
Reverse Air Fan #2 Operating Current	59Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	46.2%
Main Fan #2 Inlet Damper Position	53.4%
Main Fan #3 Inlet Damper Position	43.2%
Main Fan #4 Inlet Damper Position	40.2%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	29.9%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	8.2inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 12:40:23 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	154Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	79Amps
Reverse Air Fan #2 Operating Current	85Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	43.5%
Main Fan #2 Inlet Damper Position	49.9%
Main Fan #3 Inlet Damper Position	41.3%
Main Fan #4 Inlet Damper Position	37.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	6.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 12:55:46 PM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	164Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	58Amps
Reverse Air Fan #2 Operating Current	57Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	54.4%
Main Fan #2 Inlet Damper Position	63.3%
Main Fan #3 Inlet Damper Position	49.3%
Main Fan #4 Inlet Damper Position	48.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	4.8inWC
Baghouse Differential Duct Pressure	8.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 1:12:42 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	165Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	57Amps
Reverse Air Fan #2 Operating Current	58Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	53.3%
Main Fan #2 Inlet Damper Position	62.6%
Main Fan #3 Inlet Damper Position	48.9%
Main Fan #4 Inlet Damper Position	48.7%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	29.9%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.9inWC
Baghouse Differential Duct Pressure	8.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 1:25:14 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	77Amps
Reverse Air Fan #2 Operating Current	81Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	45.6%
Main Fan #2 Inlet Damper Position	52.6%
Main Fan #3 Inlet Damper Position	42.5%
Main Fan #4 Inlet Damper Position	39.8%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	7.6inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 1:45:10 PM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	163Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	162Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	75Amps
Reverse Air Fan #2 Operating Current	78Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	56.5%
Main Fan #2 Inlet Damper Position	66.8%
Main Fan #3 Inlet Damper Position	51.1%
Main Fan #4 Inlet Damper Position	51.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	9.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 1:55:06 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	162Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	60.1%
Main Fan #2 Inlet Damper Position	71%
Main Fan #3 Inlet Damper Position	54.2%
Main Fan #4 Inlet Damper Position	55.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.4inWC
Baghouse Differential Duct Pressure	9.6inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 2:10:14 PM
Main Fan #1 Operating Current	163Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	56Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	47.1%
Main Fan #2 Inlet Damper Position	54.2%
Main Fan #3 Inlet Damper Position	43.4%
Main Fan #4 Inlet Damper Position	41.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 2:25:37 PM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	2Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	76Amps
Reverse Air Fan #2 Operating Current	84Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	45.9%
Main Fan #2 Inlet Damper Position	53.3%
Main Fan #3 Inlet Damper Position	43.7%
Main Fan #4 Inlet Damper Position	40.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	7.7inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 2:40:23 PM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	162Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	76Amps
Reverse Air Fan #2 Operating Current	79Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	55.3%
Main Fan #2 Inlet Damper Position	64.6%
Main Fan #3 Inlet Damper Position	49.9%
Main Fan #4 Inlet Damper Position	50%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.7inWC
Baghouse Differential Duct Pressure	9.4inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 2:55:18 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	78Amps
Reverse Air Fan #2 Operating Current	82Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	61.8%
Main Fan #2 Inlet Damper Position	72.6%
Main Fan #3 Inlet Damper Position	56.1%
Main Fan #4 Inlet Damper Position	55.7%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	9.5inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/19/2005/ 3:10:36 PM
Main Fan #1 Operating Current	157Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	154Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	76Amps
Reverse Air Fan #2 Operating Current	81Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	53.2%
Main Fan #2 Inlet Damper Position	62.7%
Main Fan #3 Inlet Damper Position	49.6%
Main Fan #4 Inlet Damper Position	48.8%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30.1%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.5inWC
Baghouse Differential Duct Pressure	9.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

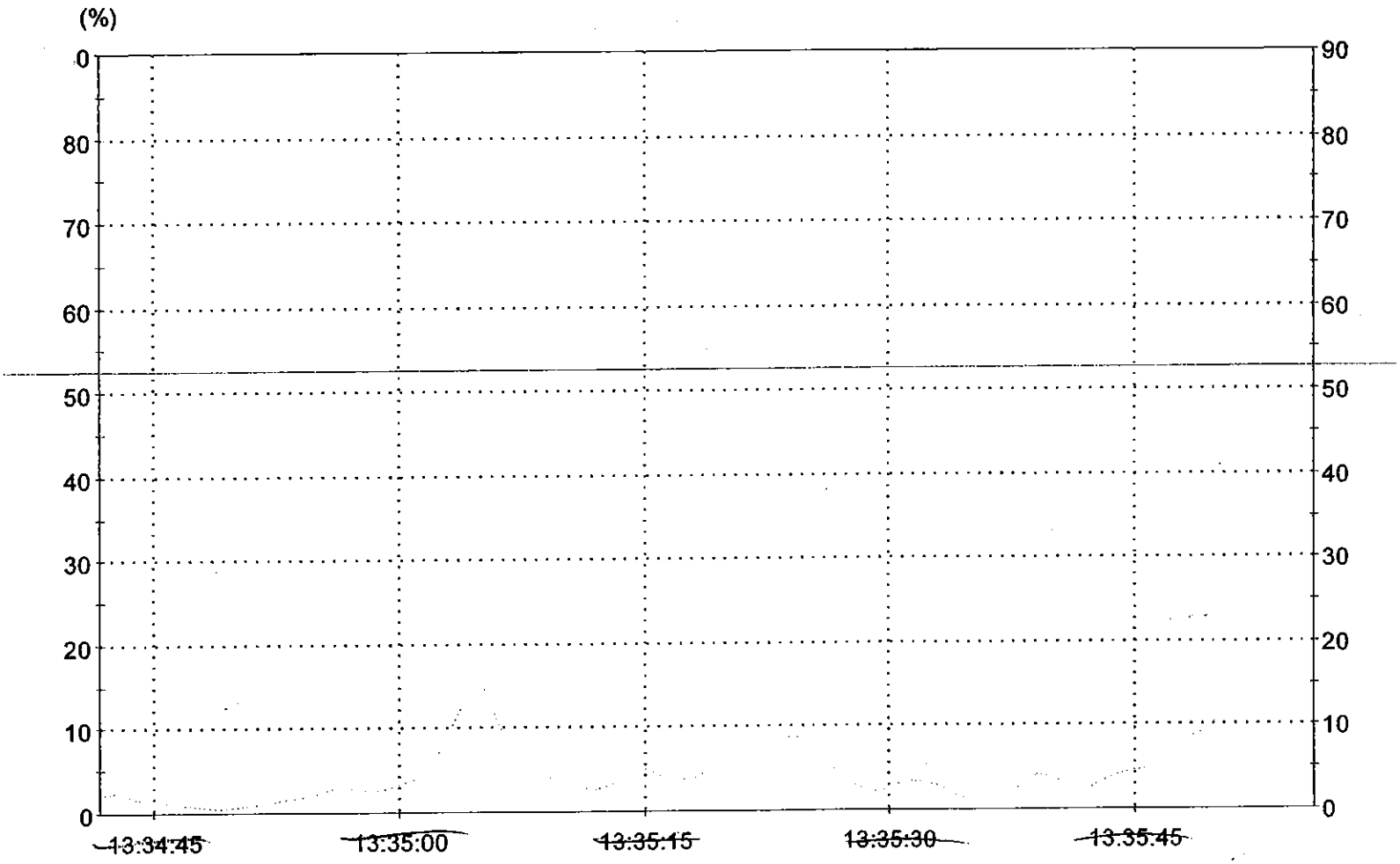
Report Date/Time	4/19/2005/ 4:07:50 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	71Amps
Reverse Air Fan #2 Operating Current	77Amps
Reverse Air Fan #3 Operating Current	0Amps
Main Fan #1 Inlet Damper Position	60.2%
Main Fan #2 Inlet Damper Position	71%
Main Fan #3 Inlet Damper Position	54.4%
Main Fan #4 Inlet Damper Position	55.1%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	30%
Reverse Air Fan #2 Damper Position	30%
Reverse Air Fan #3 Damper Position	0.1%
Fan Inlet Duct Pressure	5.6inWC
Baghouse Differential Duct Pressure	10.3inWC

BLDS #1 Start PLC time 8:15a RUN 2
4-19-05

	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
8:15	0.8	0.1	0.6	2.4	2.5	1.0	0.8	0.8
8:30	1.2	0.9	0.8	3.0	1.4	1.2	0.7	1.0
8:45	2.8	3.9	1.3	0.2	1.3	2.8	1.7	1.6
9:00	0.8	0.8	0.8	1.4	0.9	2.6	1.1	0.6
9:15	0.8	0.8	.12	1.4	0.5	1.0	1.6	0.8
9:30	1.5	.05	2.3	1.0	0.5	0.8	1.5	0.8
9:45	1.0	3.6	2.3	0.4	2.1	5.2	1.5	2.3
10:00	0.8	3.0	1.6	0.3	1.5	0.6	1.8	0.8
10:15	1.0	0.8	0.8	1.8	0.4	0.8	0.2	0.8
10:30	0.8	0.8	1.3	0.06	0.8	0.8	0.8	0.8
10:45	0.8	0.8	0.8	1.8	0.7	0.6	0.4	0.8
11:00	0.8	0.9	0.8	1.9	1.2	1.4	0.8	1.2
11:15								
11:30								
11:45								
12:00								
12:15								
12:30								
12:45								

	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
1:40	0.7	0.7	0.7	0.9	1.4	0.7	1.2	0.7
12:55	0.6	1.1	0.8	1.7	0.6	0.8	0.8	0.8
1:10	1.0	1.4	0.5	1.5	2.3	17.7	0.8	1.4
1:25	1.0	1.6	1.3	.7	3.5	4.5	1.4	1.5
1:40	.79	.79	.80	.24	2.2	1.4	1.6	1.06
1:55	.8	1.4	.49	3.0	1.4	1.1	1.0	.8
2:10	.8	1.4	.9	1.1	1.1	2.2	1.2	.9
2:25	.6	.8	.8	1.4	1.2	2.9	.70	1.4
2:40	6.2	.9	3.4	1.4	1.2	2.1	.71	.68
2:55	.79	.79	.68	1.0	.69	2.7	4.7	.41
3:10	.58	.78	.79	1.6	.65	1.6	1.0	.79
3:25	1.2	2.0	1.6	3.2	2.9	2.7	1.3	1.1
3:40	.81	7.0	3.1	.40	2.4	9.9	1.8	1.2
3:55	1.9	1.0	1.8	.90	1.2	2.0	2.3	.80
4:07	.60	1.0	3.8	1.7	1.2	9.4	6.9	.58
~~4:25~~								
~~4:40~~								

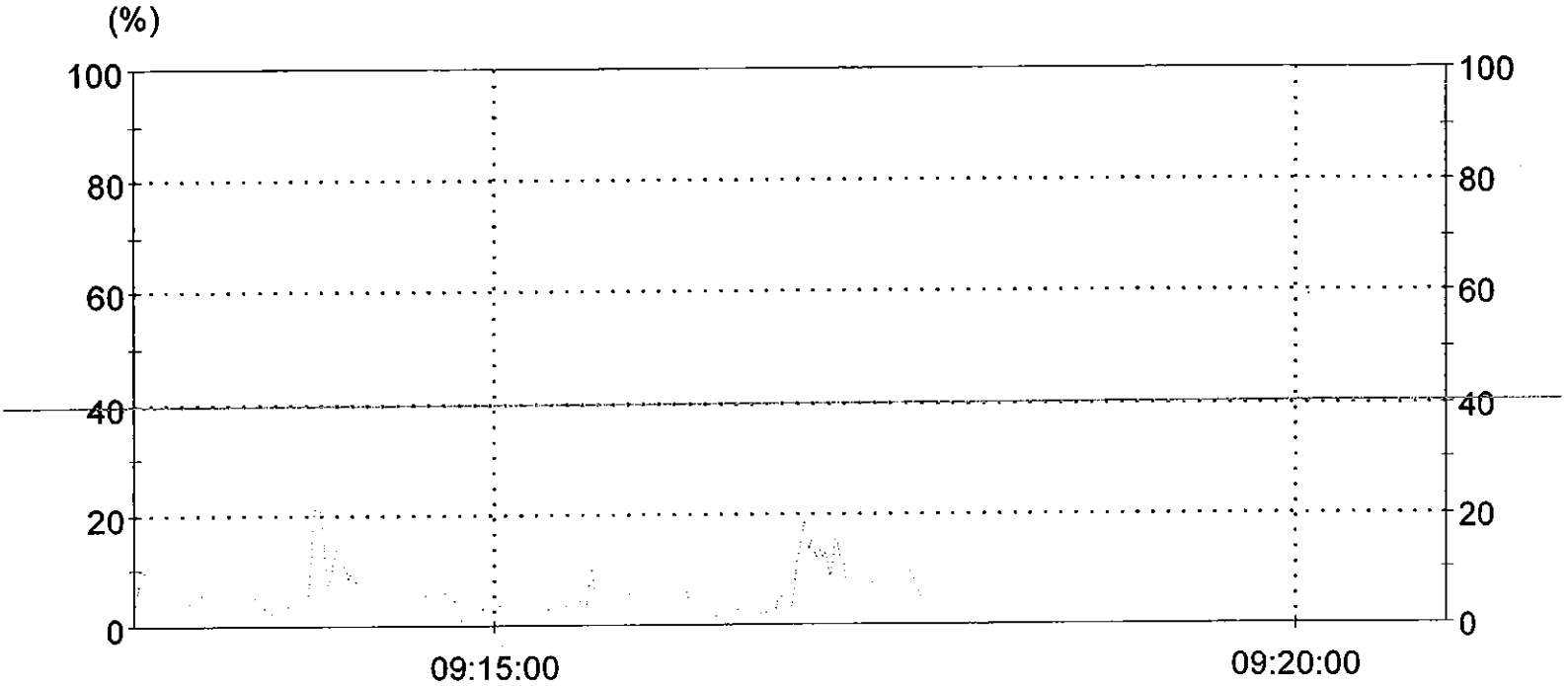
[DustSensor]



Display From: 4/19/2005 1:34:41 PM To: 4/19/2005 1:35:56 PM

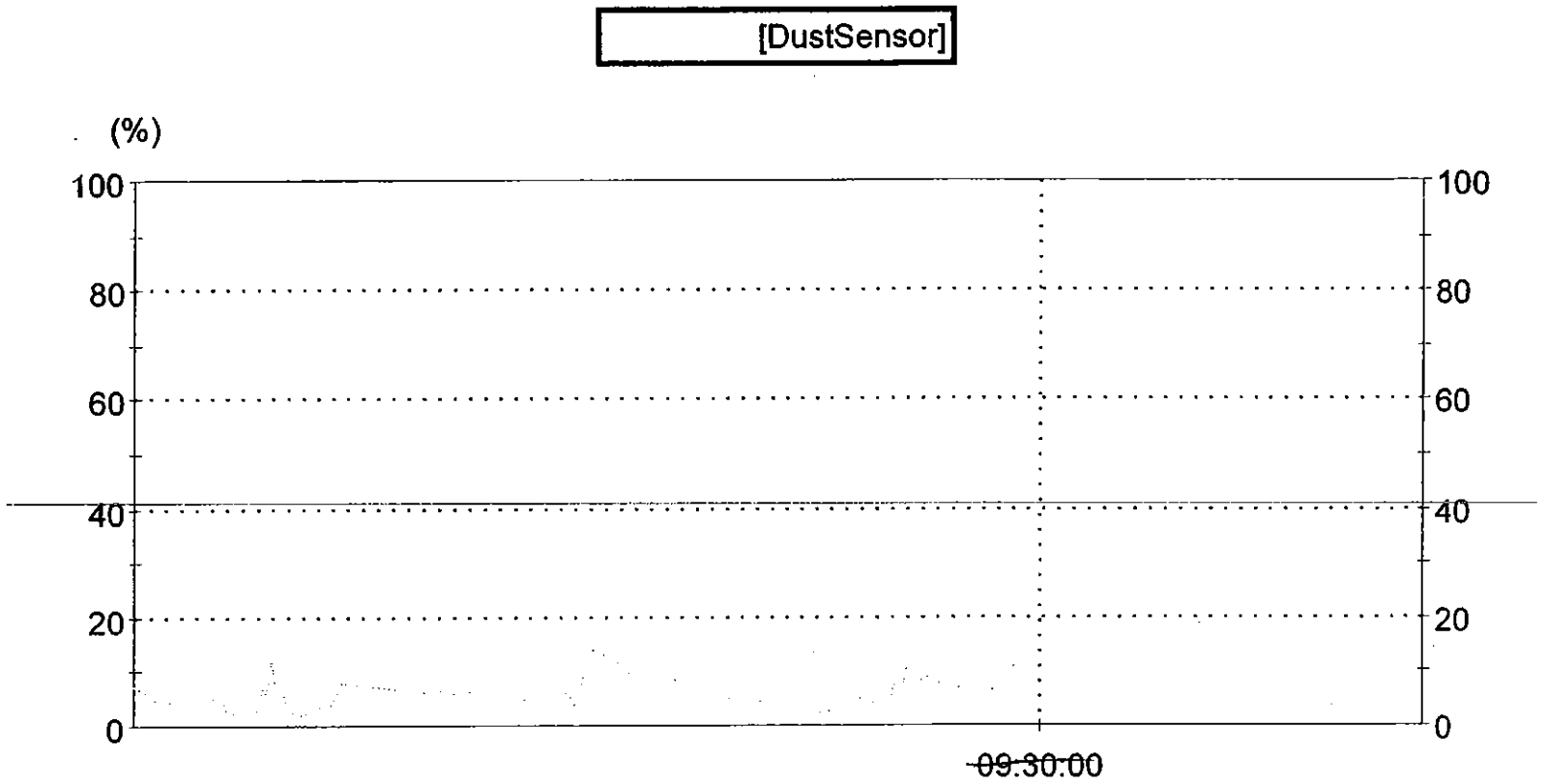
12:40PM

[DustSensor]



Display From: ~~4/19/2005 9:12:44~~ AM To: 4/19/2005 ~~9:20:57~~ AM

8:15 AM



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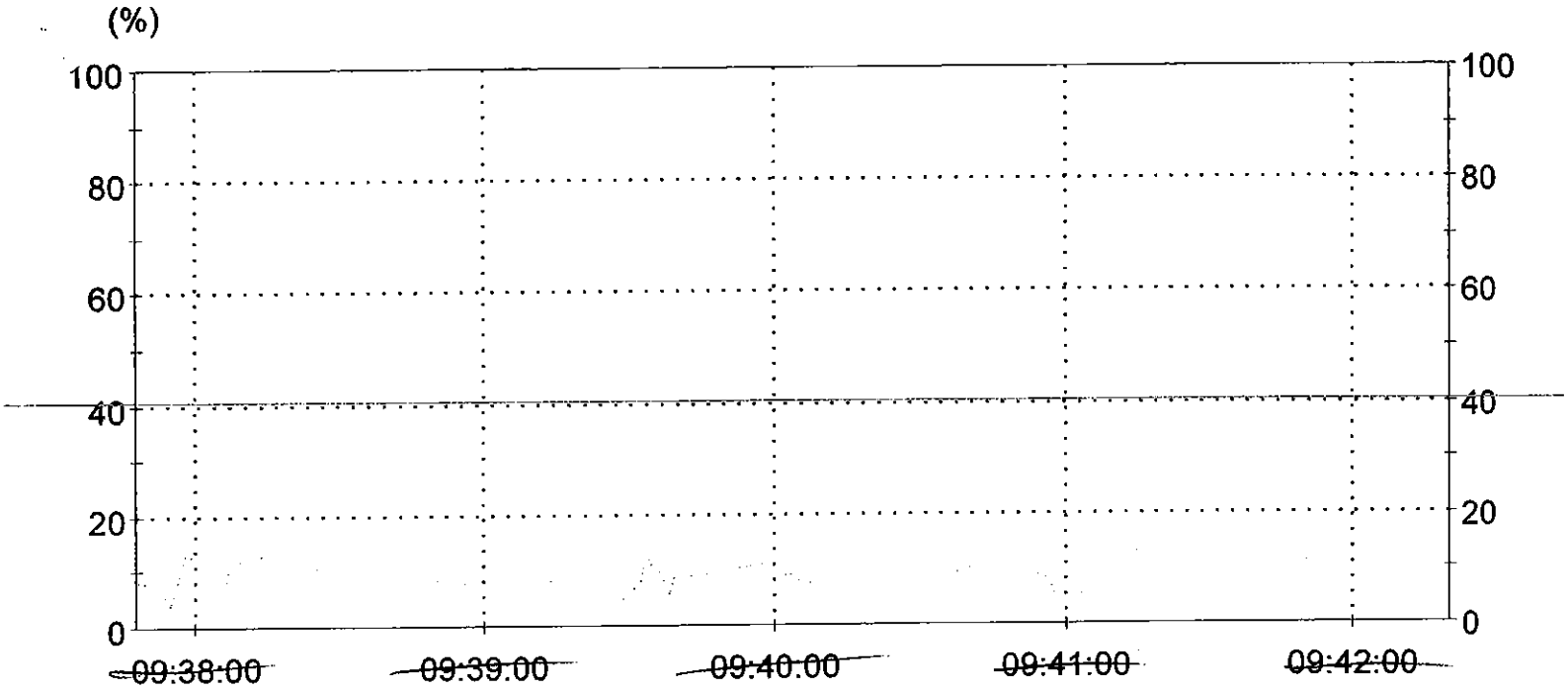
8:30 AM

[DustSensor]



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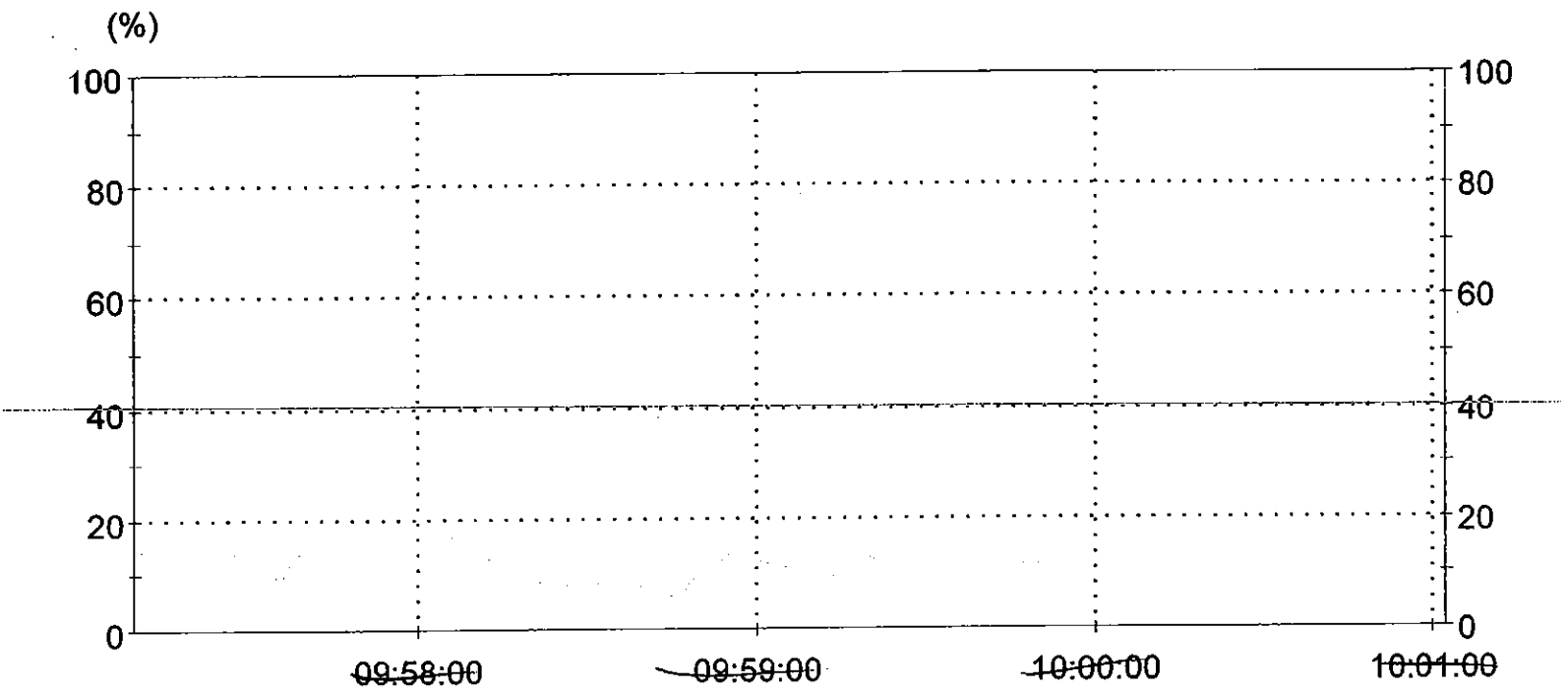

Display From: 4/19/2005 9:57:09 AM To: 4/19/2005 10:01:02 AM

9:00 AM

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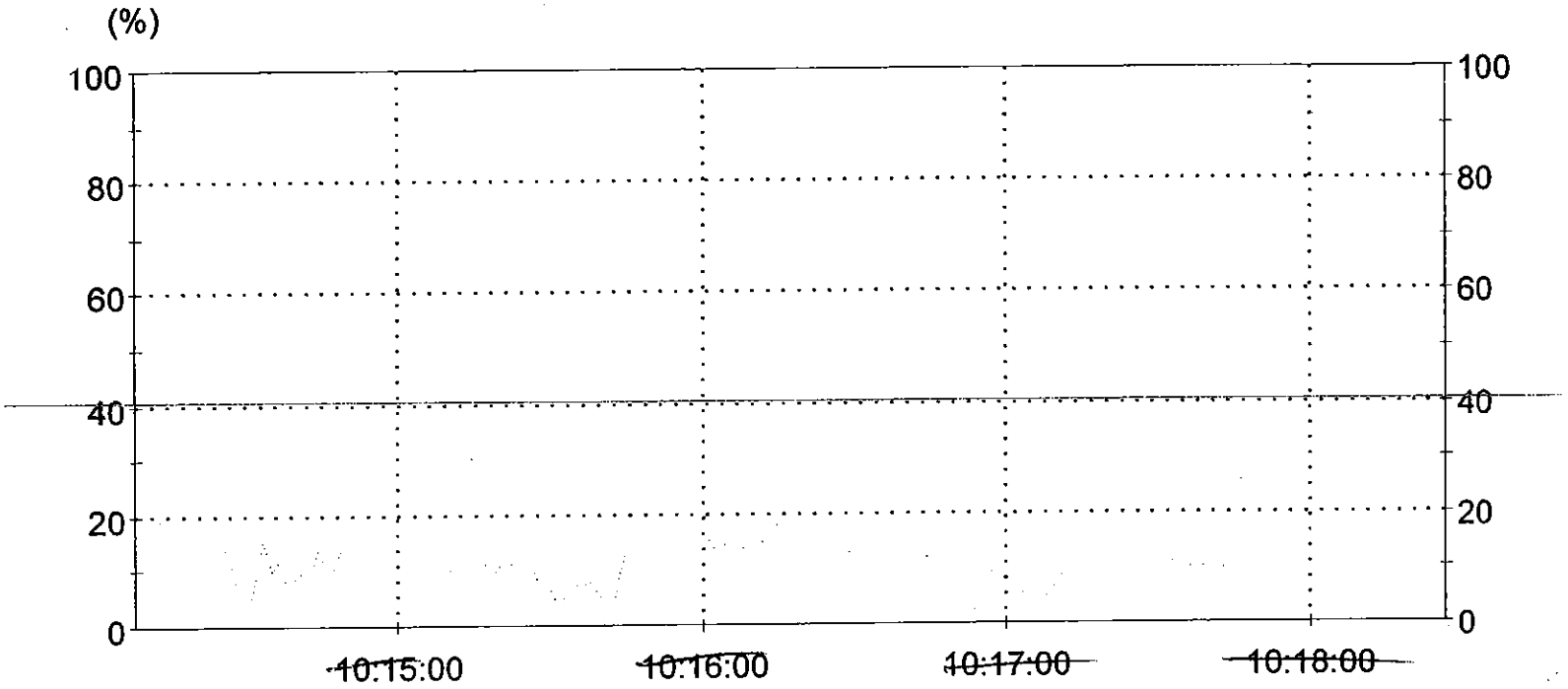

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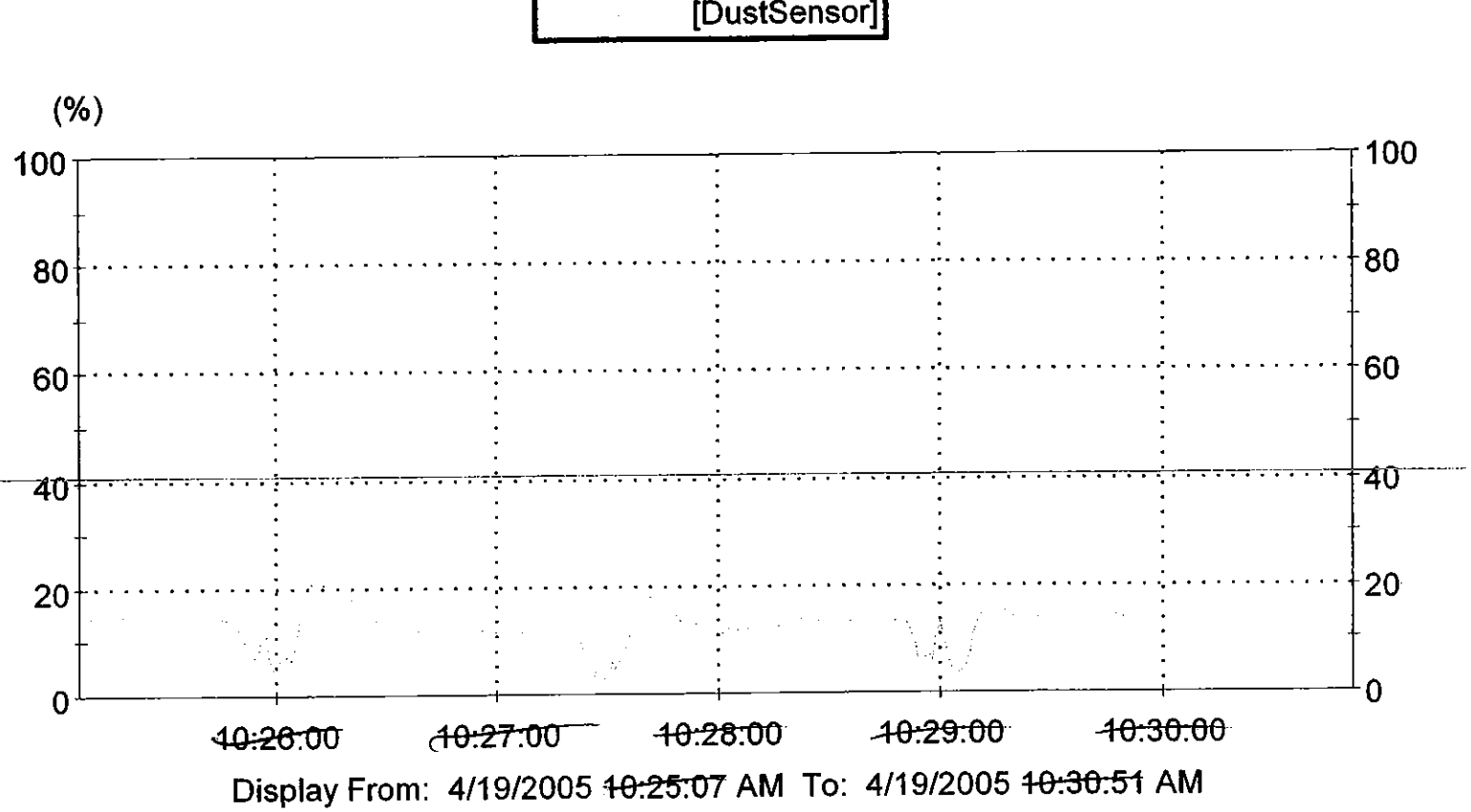
9:15 AM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(%)
100
80
60
40
20
0
10:26:00
10:27:00
10:28:00
10:29:00
10:30:00
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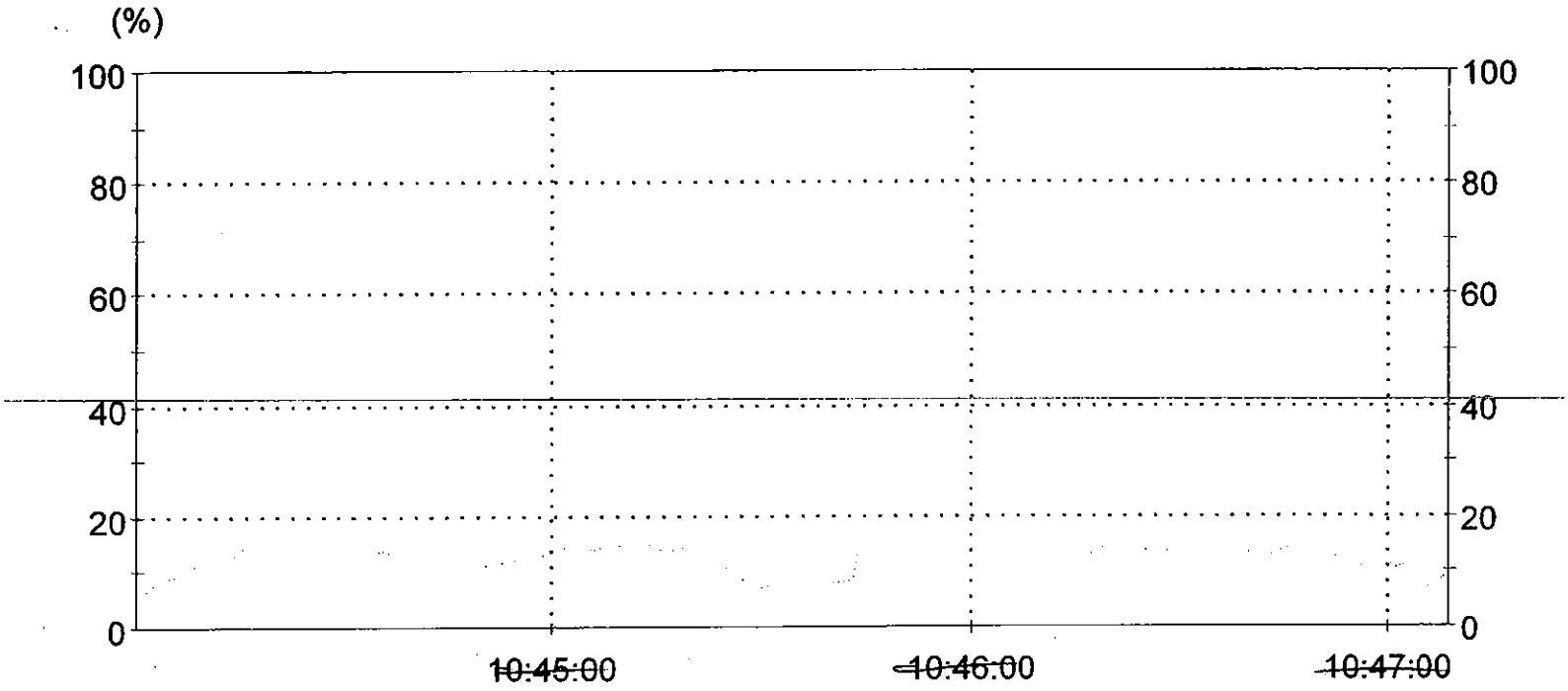
9:30 AM

[DustSensor]



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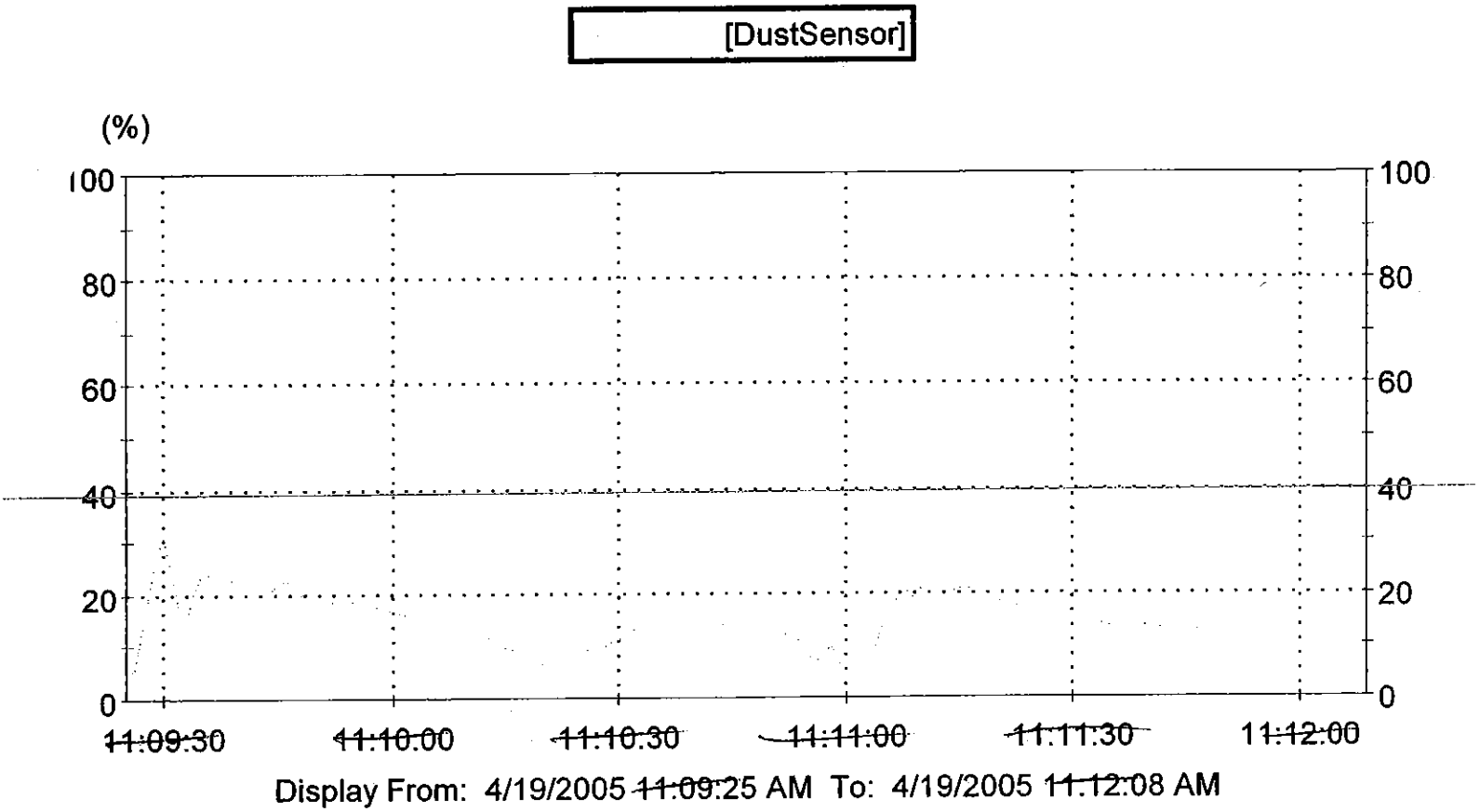
11:45 AM


[DustSensor]
(%)
100
80
60
40
20
0
11:09:30
11:10:00
11:10:30
11:11:00
11:11:30
11:12:00
Display From: 4/19/2005 11:09:25 AM To: 4/19/2005 11:12:08 AM

12:15 PM

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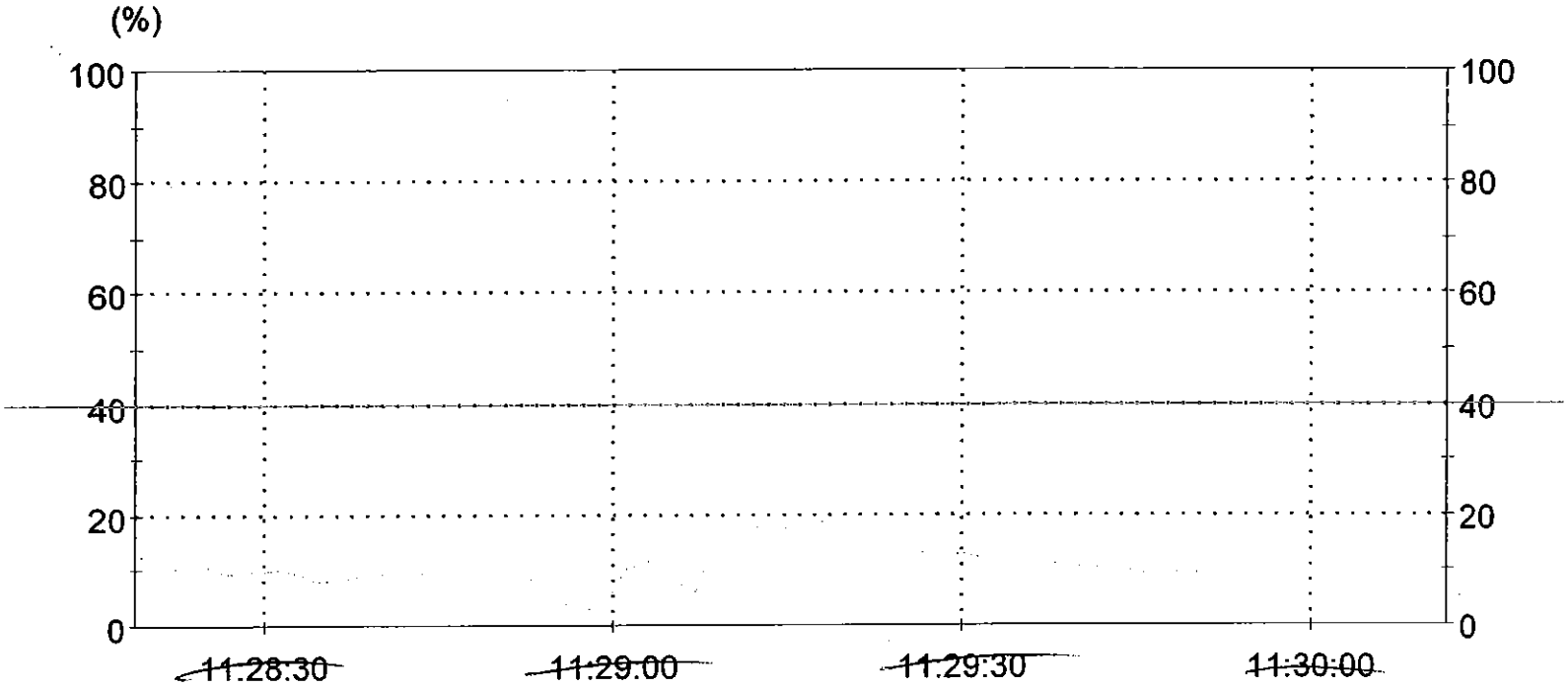

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12:30 PM

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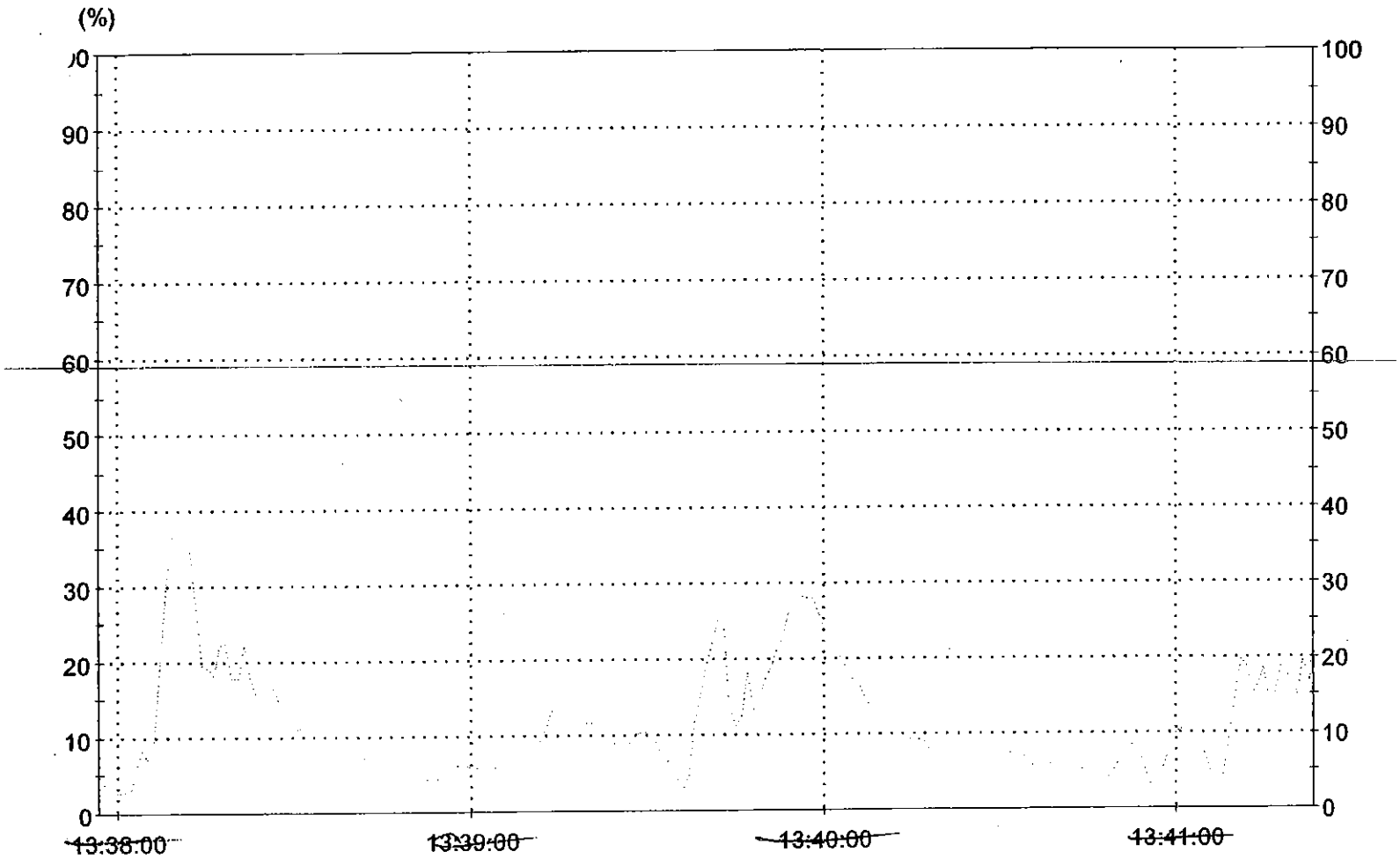

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12:40 PM

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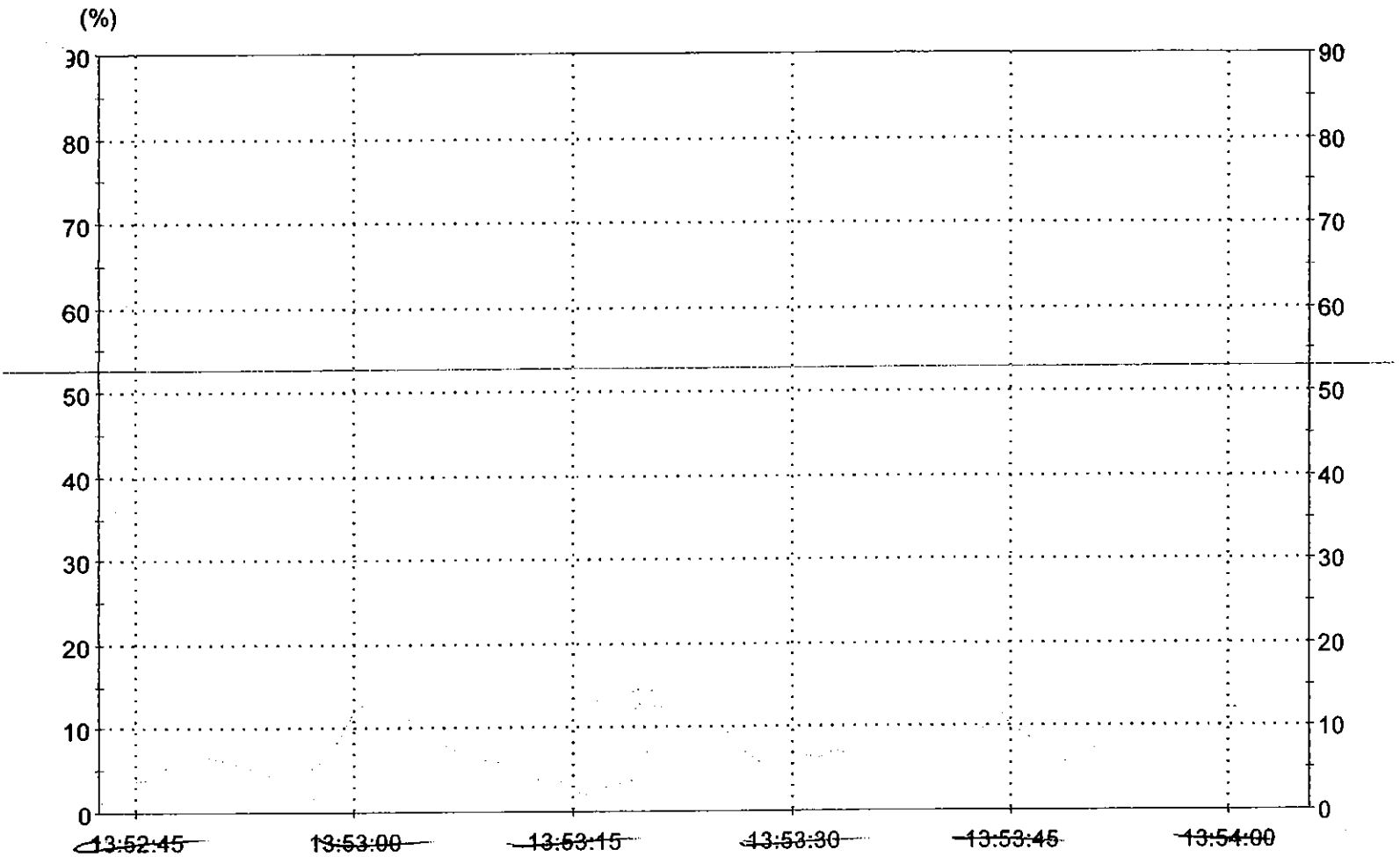

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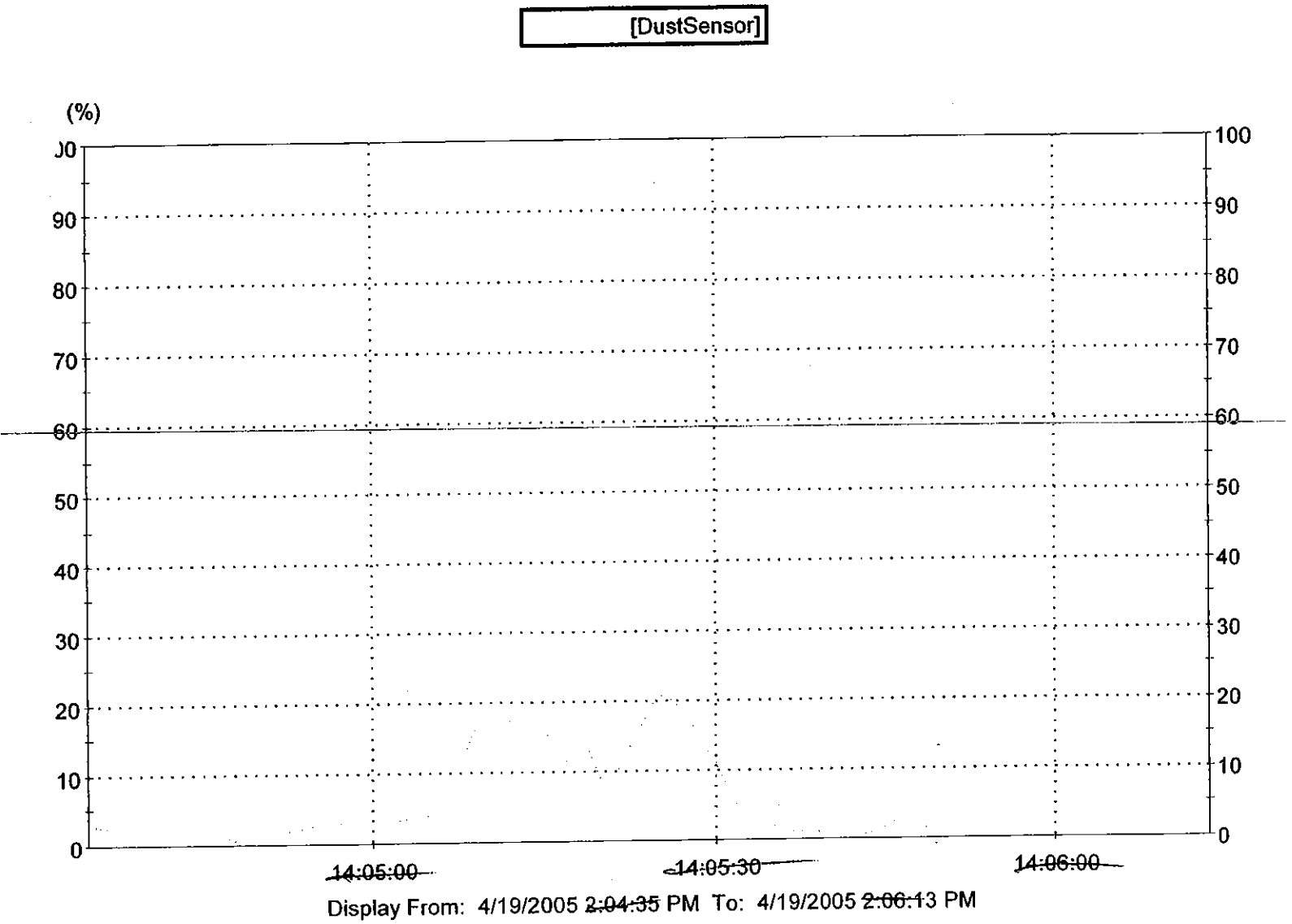
12:55 PM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(%)
100
90
80
70
60
50
40
30
20
10
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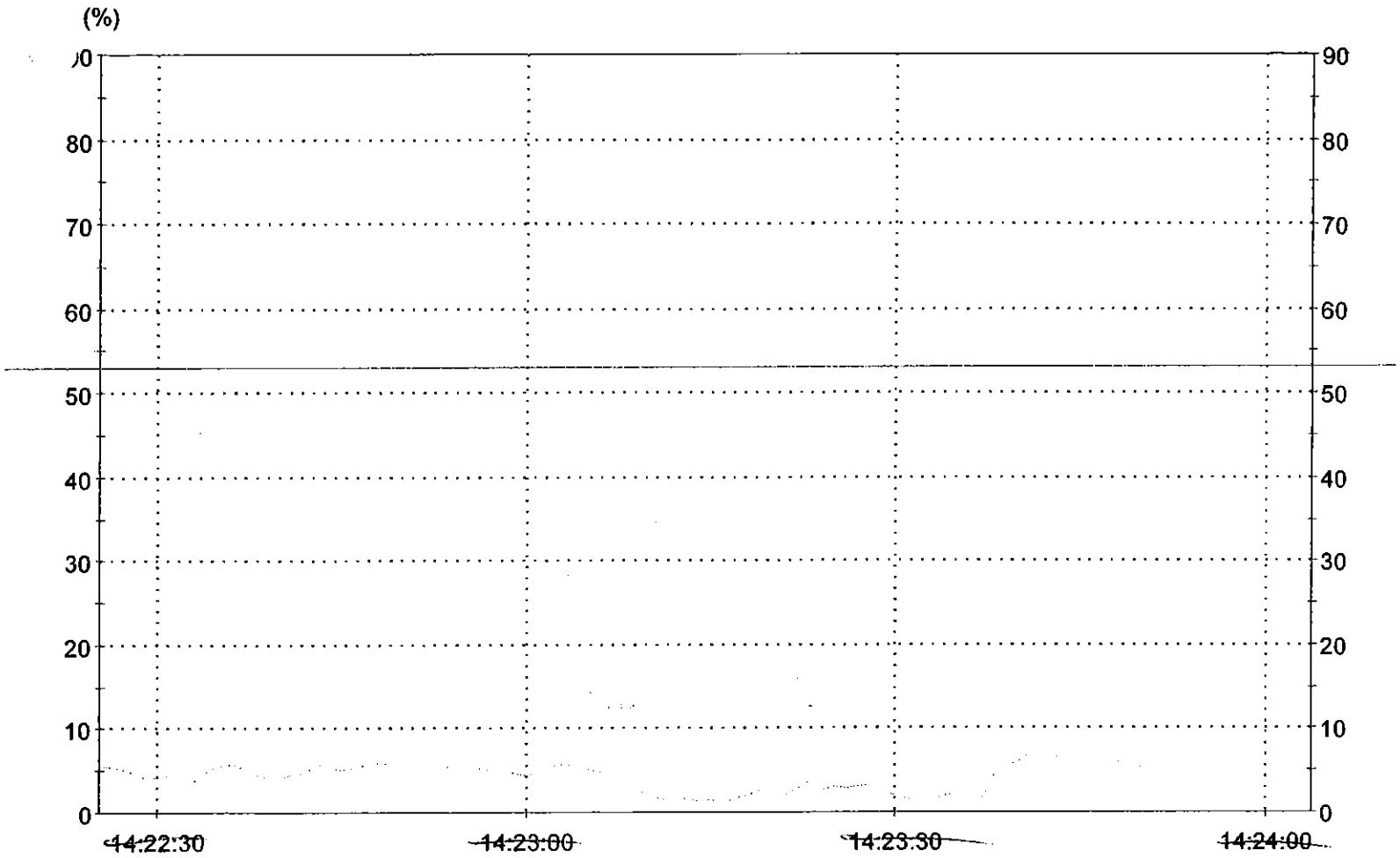
14:05:00
14:05:30
14:06:00
Display From: 4/19/2005 2:04:35 PM To: 4/19/2005 2:06:13 PM

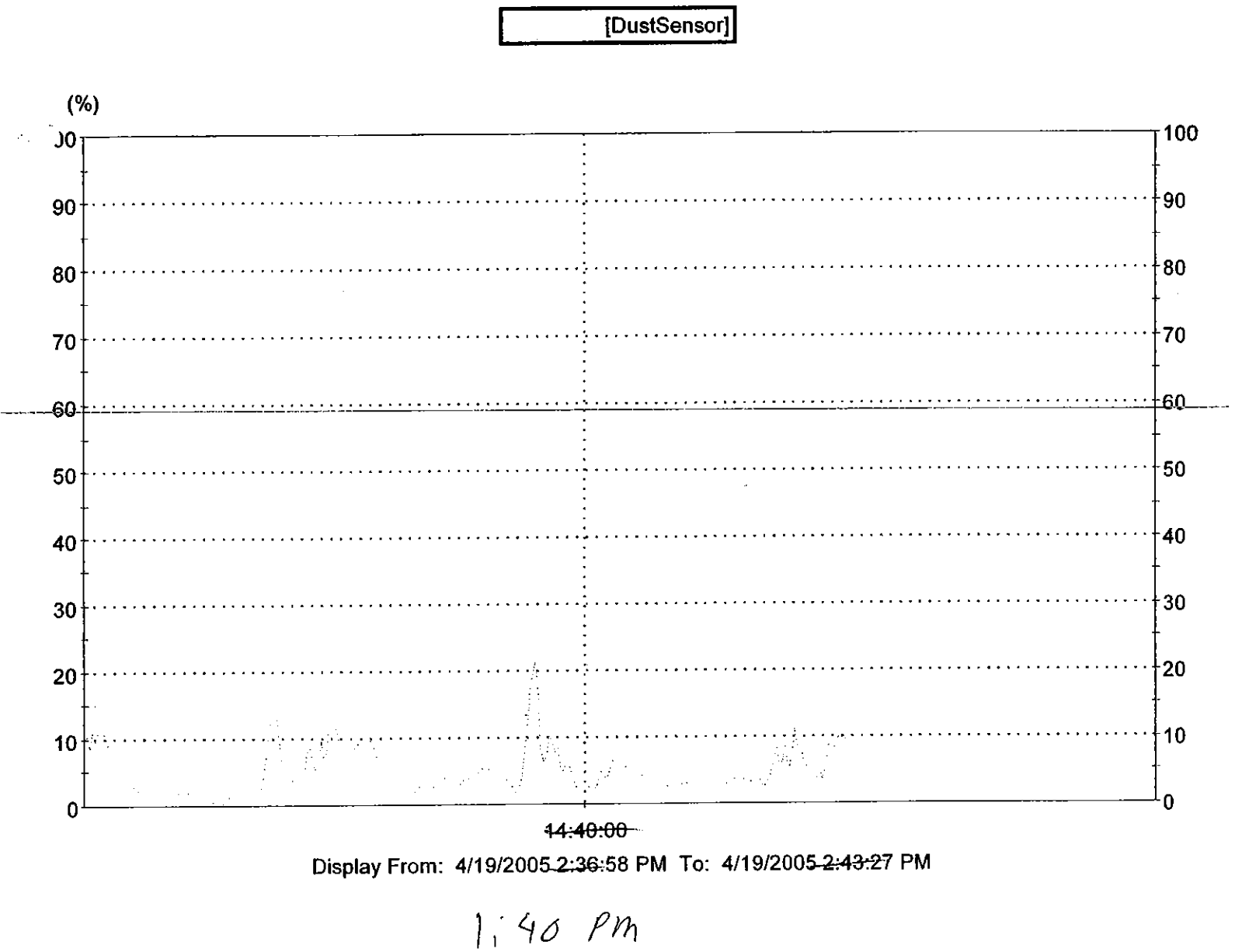
1:10 PM

[DustSensor]



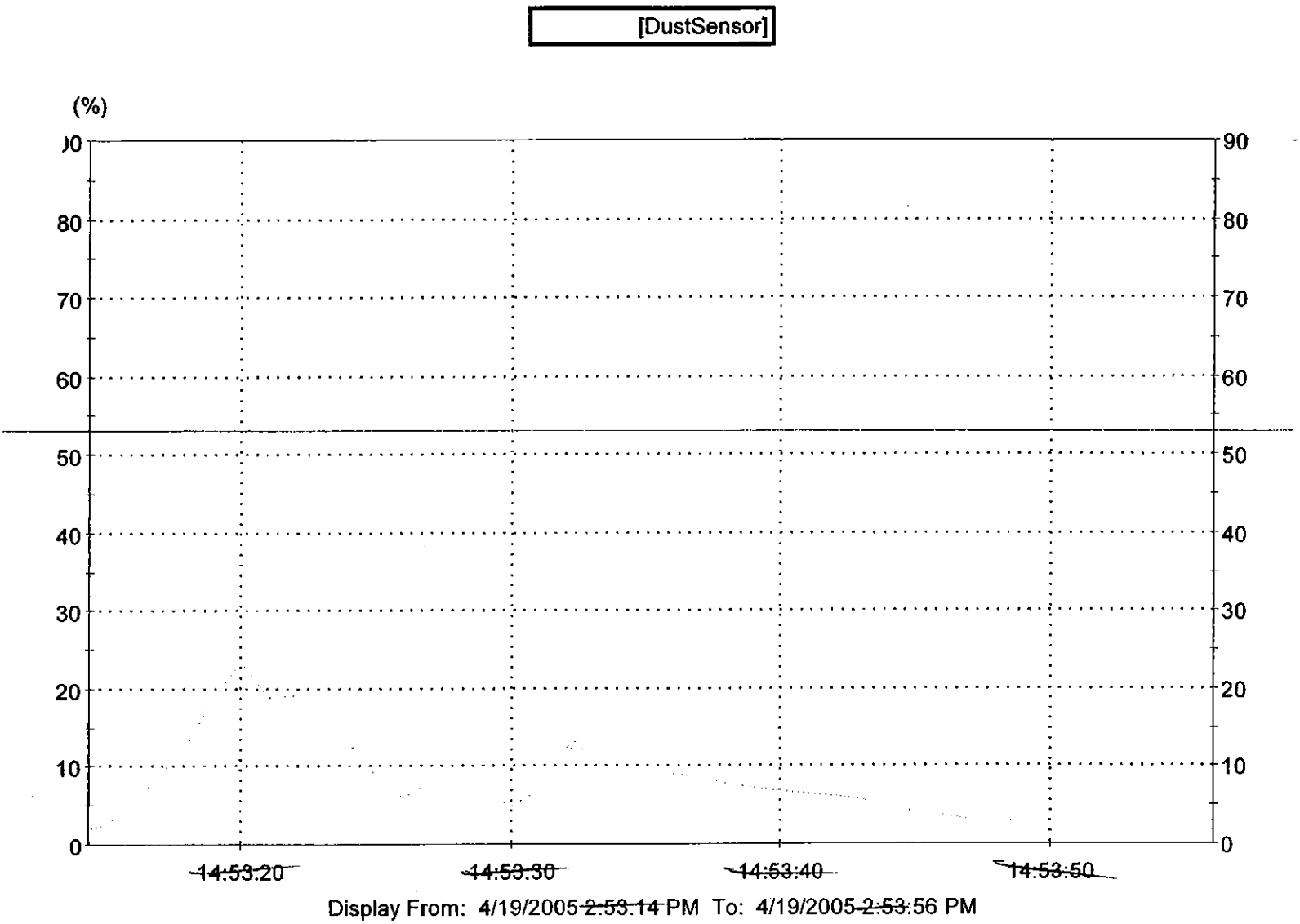
Display From: 4/19/2005 2:22:25 PM To: 4/19/2005 2:24:03 PM

1:25 PM



Display From: 4/19/2005 ~~2:36:~~58 PM To: 4/19/2005 ~~2:43:~~27 PM

1:40 PM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(%)
90
80
70
60
50
40
30
20
10
0
14:53:20
14:53:30
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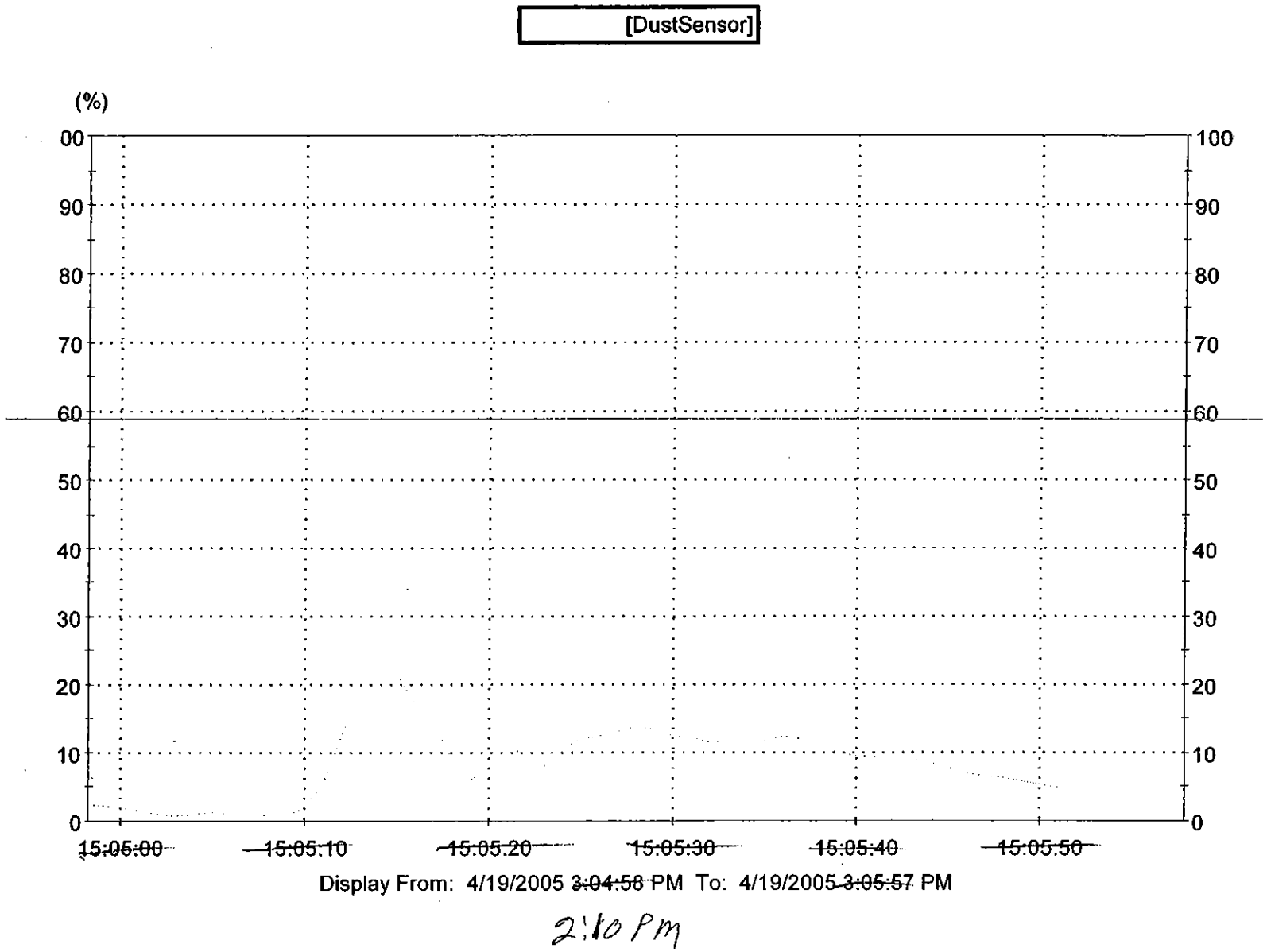
1:55 PM


[DustSensor]
(%)
00
90
80
70
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40
30
20
10
0
100
90
80
70
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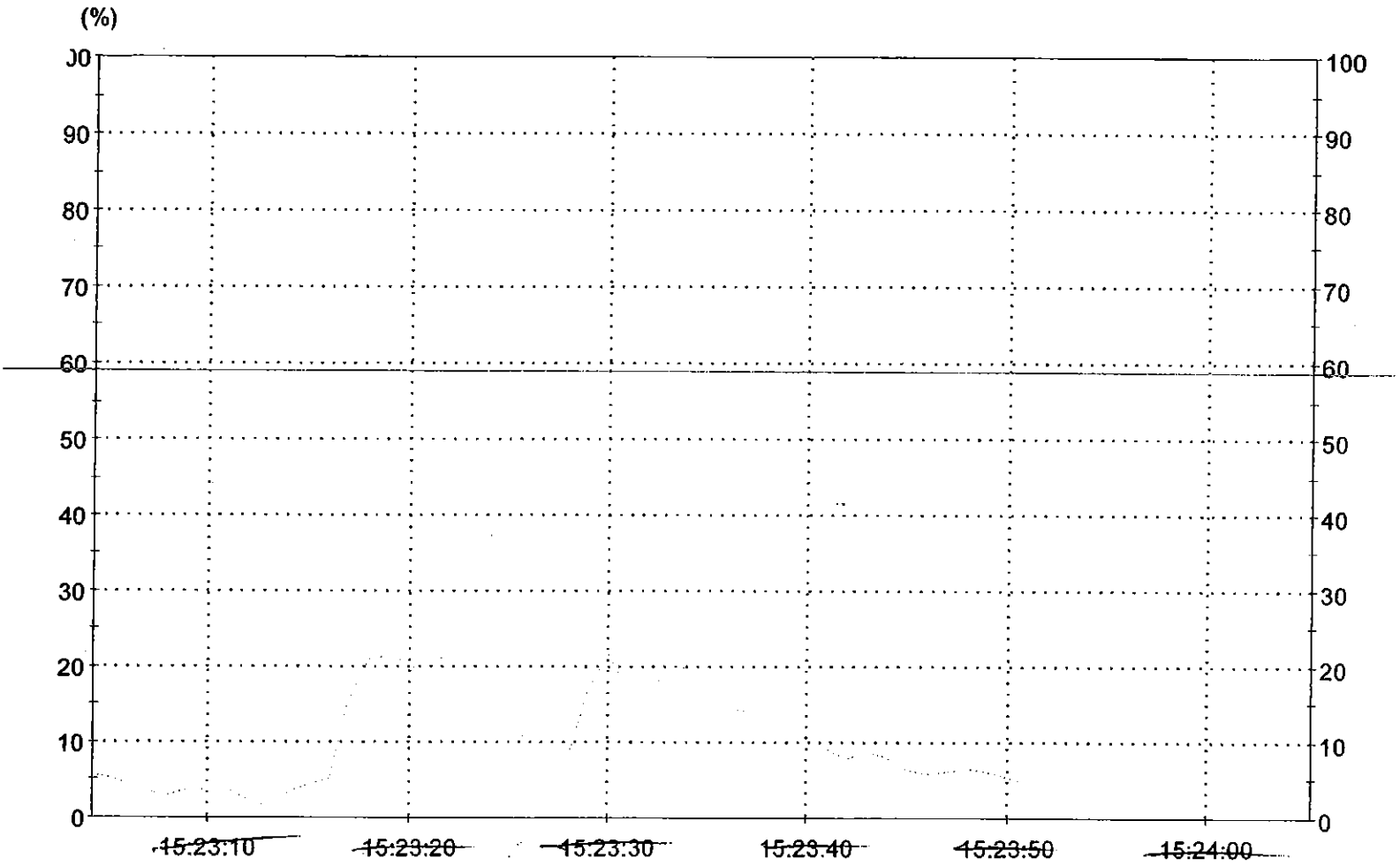
40
30
20
10
0
15:05:00
15:05:10
15:05:20
15:05:30
15:05:40
15:05:50
Display From: 4/19/2005 3:04:58 PM To: 4/19/2005 3:05:57 PM

2:10 PM

[DustSensor]



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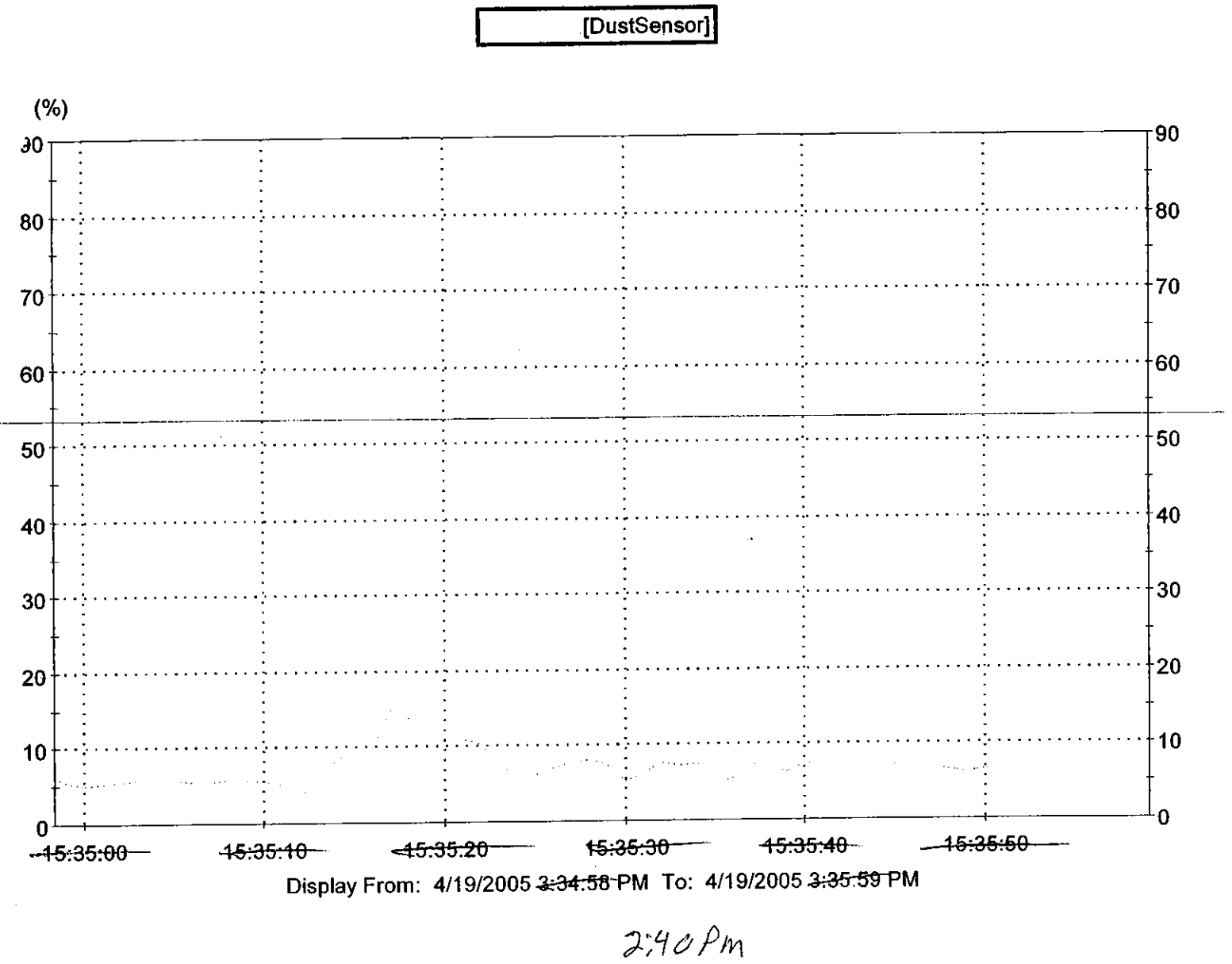
2:25 PM


[DustSensor]
(%)
90
80
70
60
50
40
30
20
10
0
15:35:00
15:35:10
15:35:20
15:35:30
15:35:40
15:35:50
Display From: 4/19/2005 3:34:58 PM To: 4/19/2005 3:35:59 PM

2:40 PM

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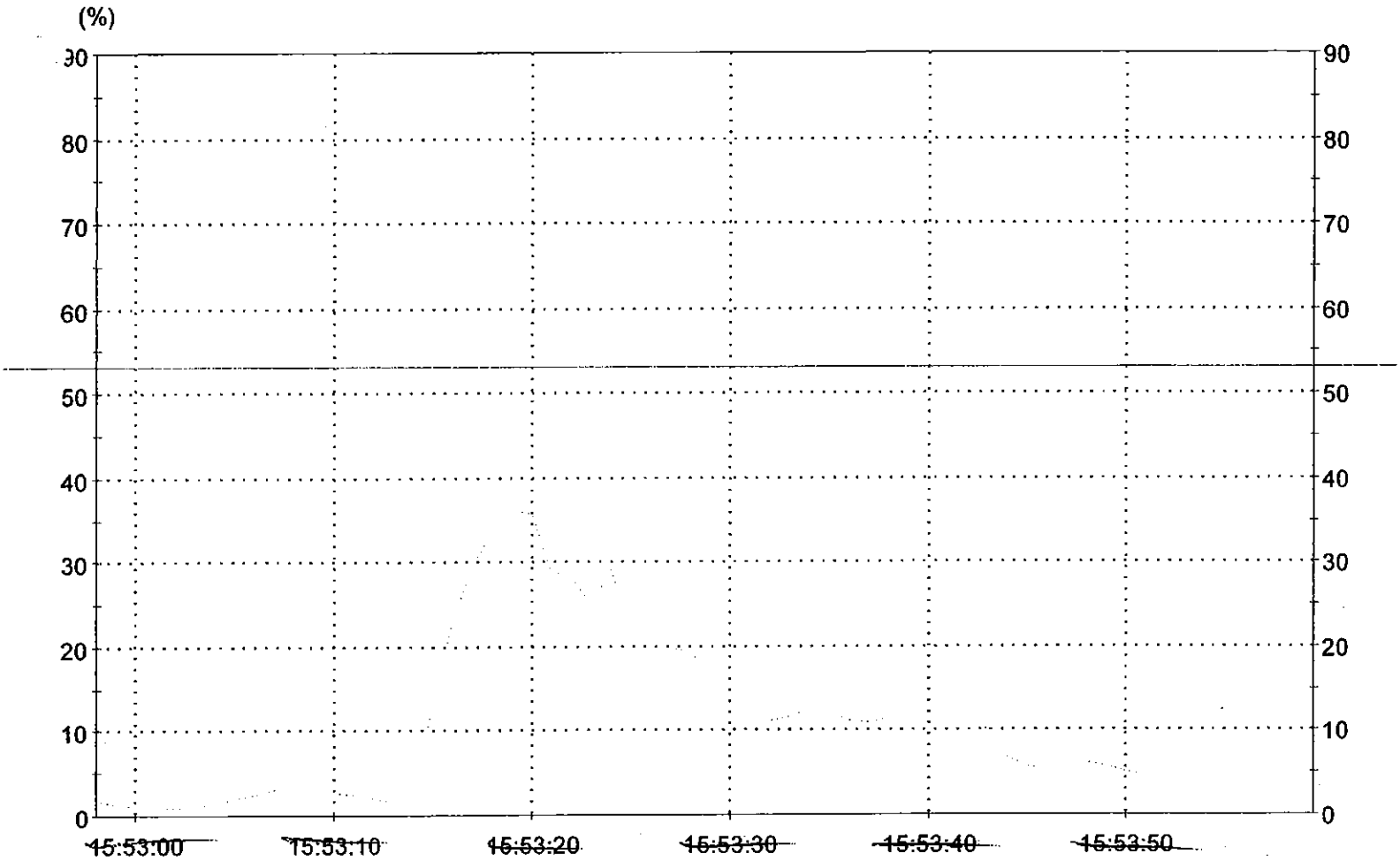

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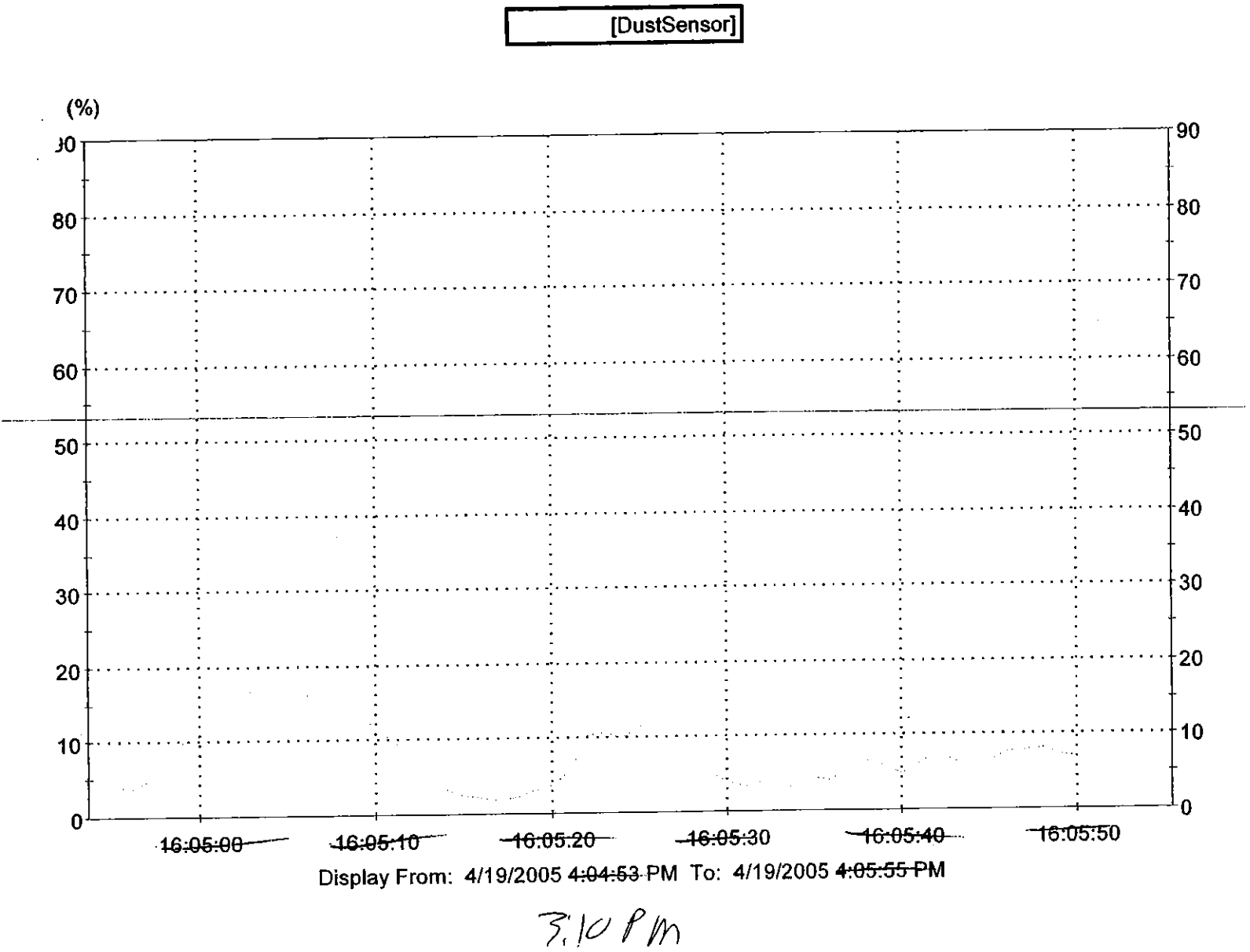
2:55 PM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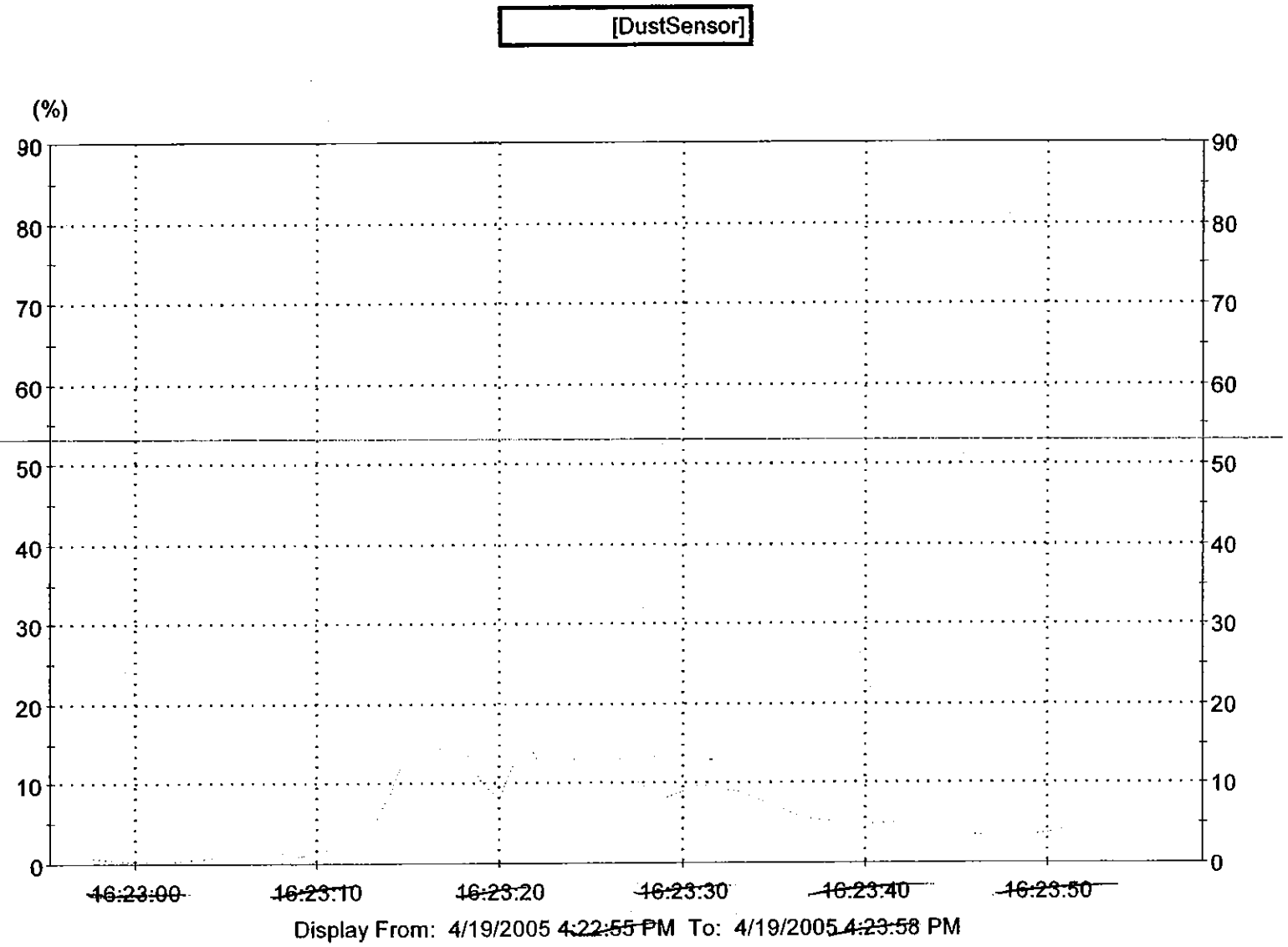
(%)
90
80
70
60
50
40
30
20
10
0
16:05:00
16:05:10
16:05:20
16:05:30
16:05:40
16:05:50
Display From: 4/19/2005 4:04:53 PM To: 4/19/2005 4:05:55 PM

3:10 PM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(%)
90
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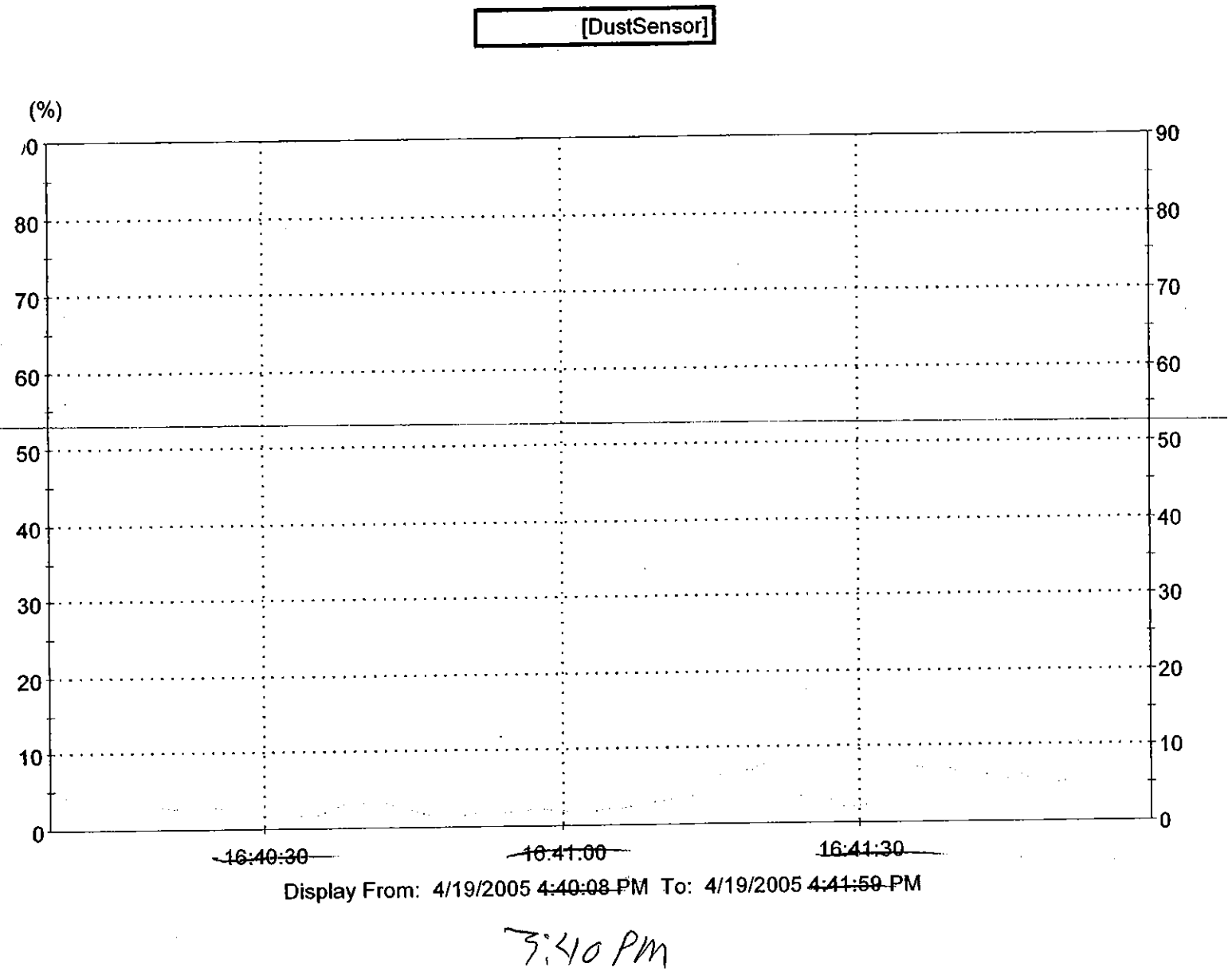
70
60
50
40
30
20
10
0
16:23:00
16:23:10
16:23:20
16:23:30
16:23:40
16:23:50
Display From: 4/19/2005 4:22:55 PM To: 4/19/2005 4:23:58 PM

3:25 PM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(%)
90
80
70
60
50
40
30
20
10
0
16:40:30
16:41:00
16:41:30
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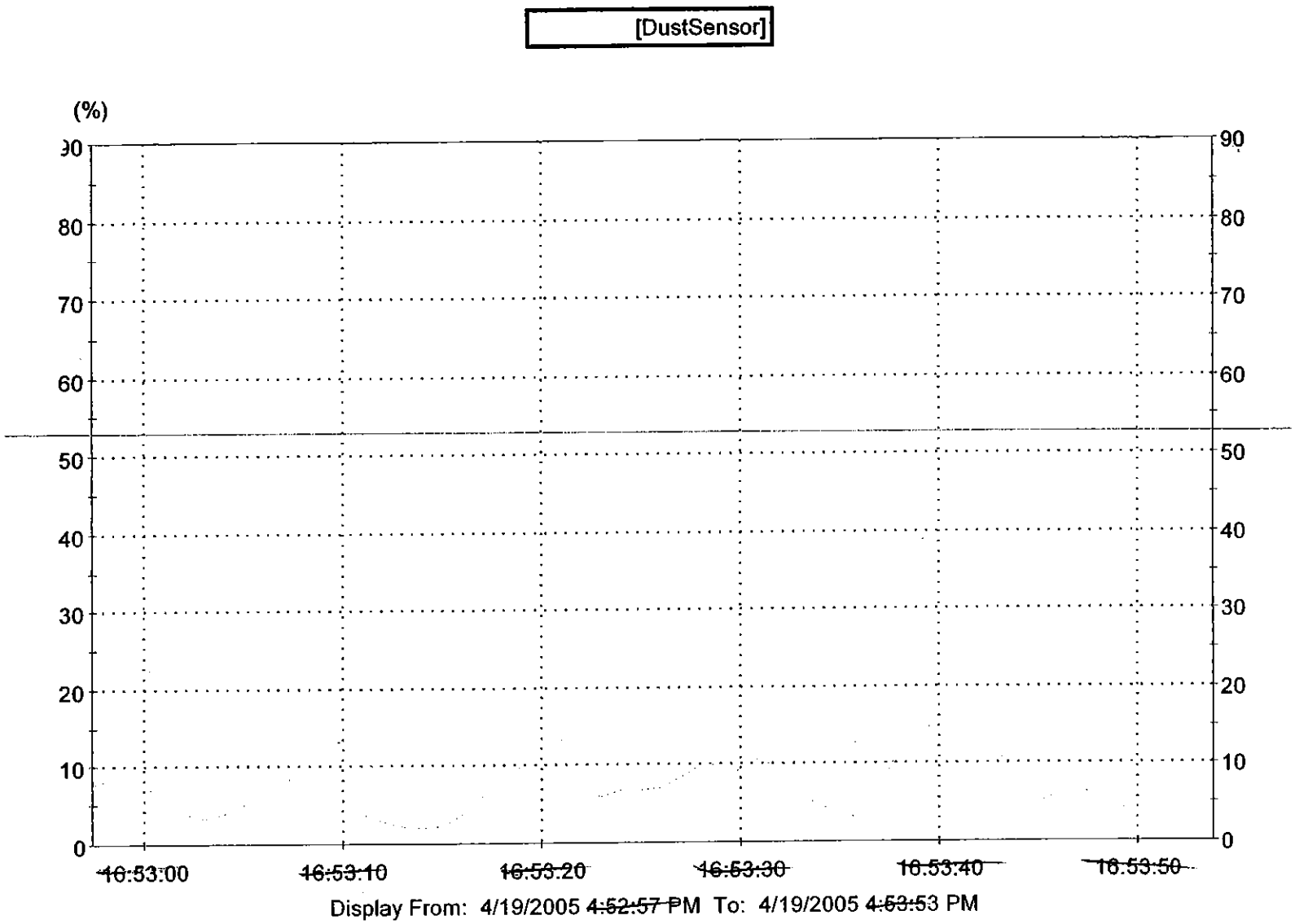
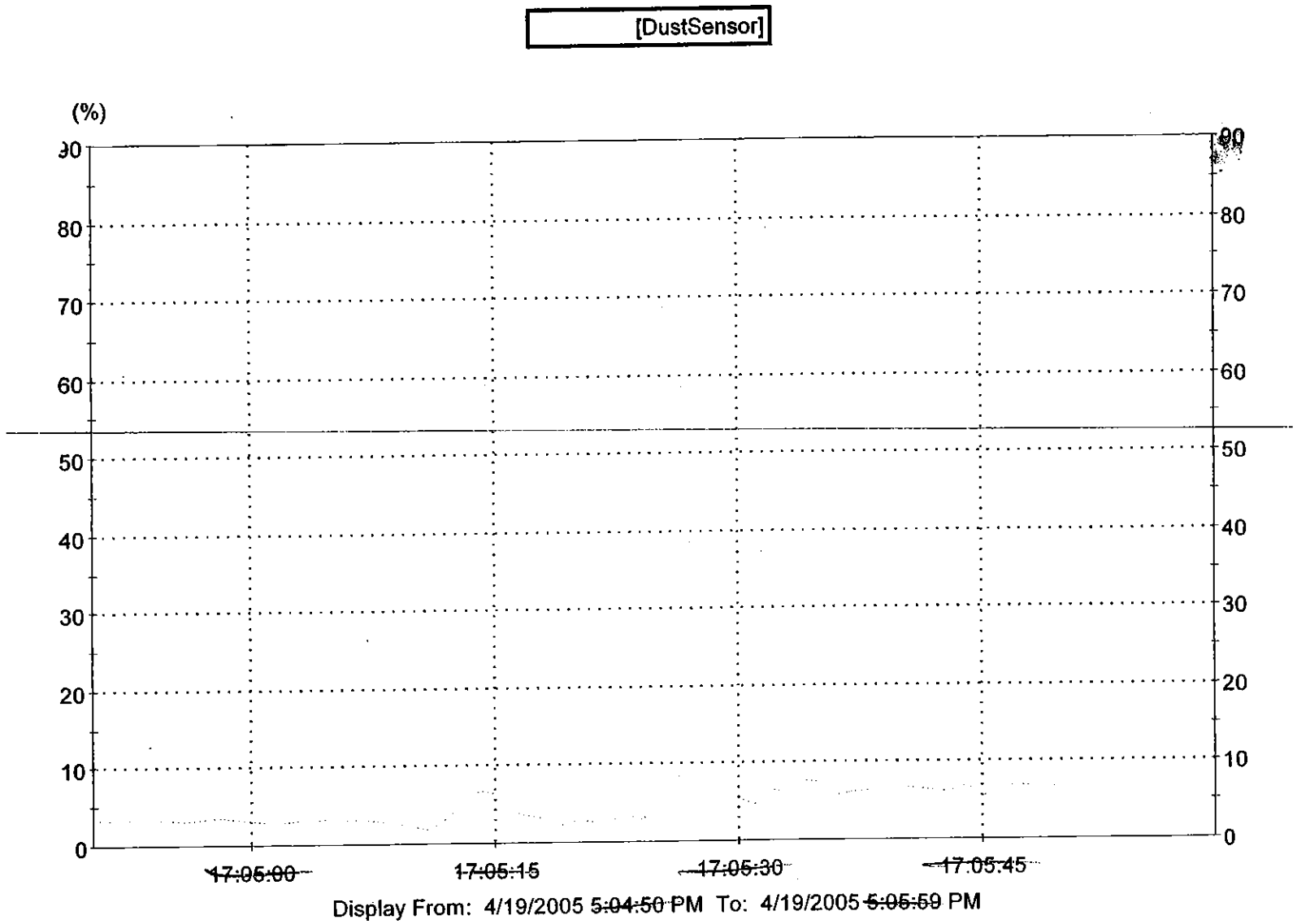
3:40 PM


[DustSensor]
(%)
90
80
70
60
50
40
30
20
10
0
16:53:00
16:53:10
16:53:20
16:53:30
16:53:40
16:53:50
Display From: 4/19/2005 4:52:57 PM To: 4/19/2005 4:53:53 PM

3:55 PM



4:07 PM

Baghouse #2

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 8:33:20 AM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	87Amps
Reverse Air Fan #3 Operating Current	80Amps
Main Fan #1 Inlet Damper Position	49.4%
Main Fan #2 Inlet Damper Position	56.8%
Main Fan #3 Inlet Damper Position	43.0%
Main Fan #4 Inlet Damper Position	42.9%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.5inWC
Baghouse Differential Duct Pressure	7.9inWC

Inlet Damper on fan #3 isn't reading but it's actually commanding. Found tripped breaker. Damper stuck on = 43%

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 8:49:51 AM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	154Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	85Amps
Reverse Air Fan #3 Operating Current	78Amps
Main Fan #1 Inlet Damper Position	52.9%
Main Fan #2 Inlet Damper Position	60.7%
Main Fan #3 Inlet Damper Position	0%
Main Fan #4 Inlet Damper Position	48.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	8.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 9:03:23 AM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	161Amps
Main Fan #3 Operating Current	156Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	86Amps
Reverse Air Fan #3 Operating Current	80Amps
Main Fan #1 Inlet Damper Position	51.3%
Main Fan #2 Inlet Damper Position	58.5%
Main Fan #3 Inlet Damper Position	100 ~~0%~~
Main Fan #4 Inlet Damper Position	46%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5.4inWC
Baghouse Differential Duct Pressure	8.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 9:18:10 AM
Main Fan #1 Operating Current	165Amps
Main Fan #2 Operating Current	165Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	164Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	84Amps
Reverse Air Fan #3 Operating Current	78Amps
Main Fan #1 Inlet Damper Position	53.2%
Main Fan #2 Inlet Damper Position	62.5%
Main Fan #3 Inlet Damper Position	13.8%
Main Fan #4 Inlet Damper Position	47.7%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5.5inWC
Baghouse Differential Duct Pressure	9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 9:33:15 AM
Main Fan #1 Operating Current	160Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	157Amps
Main Fan #4 Operating Current	156Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	86Amps
Reverse Air Fan #3 Operating Current	78Amps
Main Fan #1 Inlet Damper Position	53.7%
Main Fan #2 Inlet Damper Position	60.9%
Main Fan #3 Inlet Damper Position	50.7%
Main Fan #4 Inlet Damper Position	48.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	8.6inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 9:48:22 AM
Main Fan #1 Operating Current	156Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	160Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	84Amps
Reverse Air Fan #3 Operating Current	72Amps
Main Fan #1 Inlet Damper Position	56.8%
Main Fan #2 Inlet Damper Position	64.6%
Main Fan #3 Inlet Damper Position	51.9%
Main Fan #4 Inlet Damper Position	51%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.2%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	9.2inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 10:03:36 AM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	164Amps
Main Fan #4 Operating Current	165Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	81Amps
Reverse Air Fan #3 Operating Current	75Amps
Main Fan #1 Inlet Damper Position	54.8%
Main Fan #2 Inlet Damper Position	64.3%
Main Fan #3 Inlet Damper Position	49.4%
Main Fan #4 Inlet Damper Position	49.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.3%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	9.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 10:18:36 AM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	162Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	164Amps
Main Fan #5 Operating Current	0Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	82Amps
Reverse Air Fan #3 Operating Current	76Amps
Main Fan #1 Inlet Damper Position	48.4%
Main Fan #2 Inlet Damper Position	56.3%
Main Fan #3 Inlet Damper Position	44.6%
Main Fan #4 Inlet Damper Position	43.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.4inWC
Baghouse Differential Duct Pressure	9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 10:37:28 AM
Main Fan #1 Operating Current	162Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	61Amps
Reverse Air Fan #3 Operating Current	49Amps
Main Fan #1 Inlet Damper Position	51.8%
Main Fan #2 Inlet Damper Position	60.2%
Main Fan #3 Inlet Damper Position	47.6%
Main Fan #4 Inlet Damper Position	46.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 10:45:48 AM
Main Fan #1 Operating Current	158Amps
Main Fan #2 Operating Current	156Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	162Amps
Main Fan #5 Operating Current	0Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	61Amps
Reverse Air Fan #3 Operating Current	48Amps
Main Fan #1 Inlet Damper Position	59%
Main Fan #2 Inlet Damper Position	69.2%
Main Fan #3 Inlet Damper Position	54.2%
Main Fan #4 Inlet Damper Position	54.7%
Main Fan #5 Inlet Damper Position	0.1%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.3%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	9.6inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 11:30:18 AM
Main Fan #1 Operating Current	157Amps
Main Fan #2 Operating Current	155Amps
Main Fan #3 Operating Current	158Amps
Main Fan #4 Operating Current	155Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	86Amps
Reverse Air Fan #3 Operating Current	79Amps
Main Fan #1 Inlet Damper Position	50.9%
Main Fan #2 Inlet Damper Position	58.5%
Main Fan #3 Inlet Damper Position	46.9%
Main Fan #4 Inlet Damper Position	45.5%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	7.9inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 11:48:14 AM
Main Fan #1 Operating Current	157Amps
Main Fan #2 Operating Current	160Amps
Main Fan #3 Operating Current	161Amps
Main Fan #4 Operating Current	162Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	60Amps
Reverse Air Fan #3 Operating Current	49Amps
Main Fan #1 Inlet Damper Position	50.6%
Main Fan #2 Inlet Damper Position	58.2%
Main Fan #3 Inlet Damper Position	46.7%
Main Fan #4 Inlet Damper Position	45.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.1%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	8.2inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

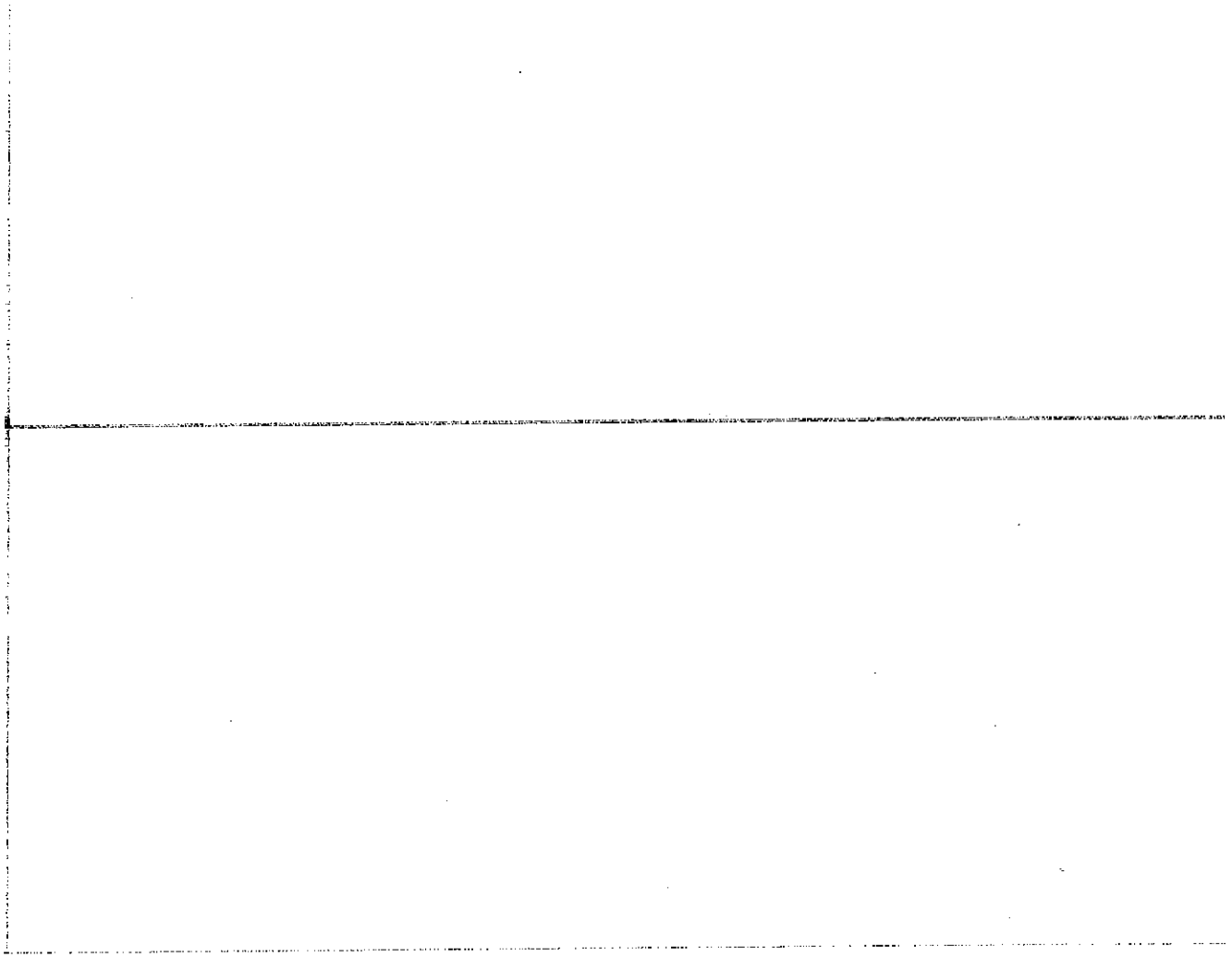
Report Date/Time	4/22/2005/ 12:00:44 PM
Main Fan #1 Operating Current	161Amps
Main Fan #2 Operating Current	159Amps
Main Fan #3 Operating Current	164Amps
Main Fan #4 Operating Current	160Amps
Main Fan #5 Operating Current	0Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	79Amps
Reverse Air Fan #3 Operating Current	77Amps
Main Fan #1 Inlet Damper Position	56.2%
Main Fan #2 Inlet Damper Position	65.9%
Main Fan #3 Inlet Damper Position	51.1%
Main Fan #4 Inlet Damper Position	51.6%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.2inWC
Baghouse Differential Duct Pressure	9.3inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 12:15:49 PM
Main Fan #1 Operating Current	166Amps
Main Fan #2 Operating Current	166Amps
Main Fan #3 Operating Current	165Amps
Main Fan #4 Operating Current	163Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	62Amps
Reverse Air Fan #3 Operating Current	50Amps
Main Fan #1 Inlet Damper Position	59.9%
Main Fan #2 Inlet Damper Position	70.2%
Main Fan #3 Inlet Damper Position	54.4%
Main Fan #4 Inlet Damper Position	54.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.2%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.5inWC
Baghouse Differential Duct Pressure	10.1inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 12:30:14 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	157Amps
Main Fan #3 Operating Current	159Amps
Main Fan #4 Operating Current	158Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	61Amps
Reverse Air Fan #3 Operating Current	49Amps
Main Fan #1 Inlet Damper Position	55.8%
Main Fan #2 Inlet Damper Position	64.2%
Main Fan #3 Inlet Damper Position	51%
Main Fan #4 Inlet Damper Position	50.4%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.3inWC
Baghouse Differential Duct Pressure	9inWC



rt

:31:12 PM	4/22/2005/ 1:45:19 PM
163Amps	163Amps
170Amps	162Amps
159Amps	158Amps
162Amps	160Amps
1Amps	1Amps
0Amps	0Amps
0Amps	0Amps
60Amps	60Amps
48Amps	50Amps
63.3%	66%
91.4%	92%
58.3%	58.8%
58.5%	60.2%
0%	0%
0.1%	0.1%
0.2%	0.2%
^0.2%	30.2%
⌄0.2%	30.2%
5.2inWC	5.2inWC
10.2inWC	10.1inWC

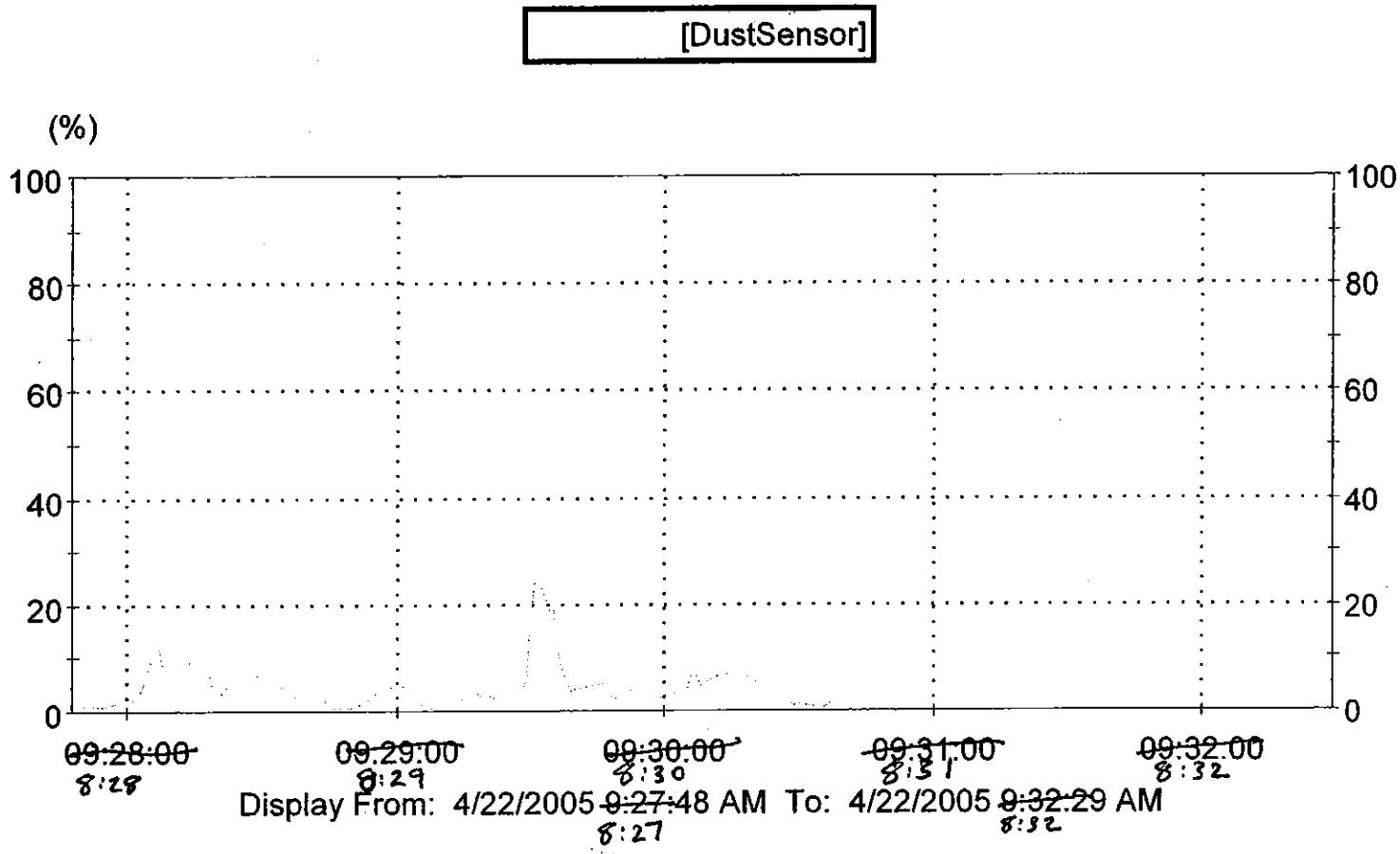
Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 2:00:50 PM
Main Fan #1 Operating Current	165Amps
Main Fan #2 Operating Current	158Amps
Main Fan #3 Operating Current	163Amps
Main Fan #4 Operating Current	161Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	0Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	80Amps
Reverse Air Fan #3 Operating Current	74Amps
Main Fan #1 Inlet Damper Position	58.9%
Main Fan #2 Inlet Damper Position	92.3%
Main Fan #3 Inlet Damper Position	53.8%
Main Fan #4 Inlet Damper Position	54%
Main Fan #5 Inlet Damper Position	0.1%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5.1inWC
Baghouse Differential Duct Pressure	9.8inWC

Nucor Steel, Crawfordsville
Baghouse #2 Operations Report

Report Date/Time	4/22/2005/ 2:13:58 PM
Main Fan #1 Operating Current	159Amps
Main Fan #2 Operating Current	163Amps
Main Fan #3 Operating Current	164Amps
Main Fan #4 Operating Current	159Amps
Main Fan #5 Operating Current	1Amps
Main Fan #6 Operating Current	1Amps
Reverse Air Fan #1 Operating Current	0Amps
Reverse Air Fan #2 Operating Current	78Amps
Reverse Air Fan #3 Operating Current	73Amps
Main Fan #1 Inlet Damper Position	61%
Main Fan #2 Inlet Damper Position	91.4%
Main Fan #3 Inlet Damper Position	55%
Main Fan #4 Inlet Damper Position	55.3%
Main Fan #5 Inlet Damper Position	0%
Main Fan #6 Inlet Damper Position	0.1%
Reverse Air Fan #1 Damper Position	0.2%
Reverse Air Fan #2 Damper Position	30.2%
Reverse Air Fan #3 Damper Position	30.2%
Fan Inlet Duct Pressure	5inWC
Baghouse Differential Duct Pressure	9.9inWC

4-22-05	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16
8:03	0.7	0.7	0.7	0.4	0.6	0.6	0.7	0.7
8:48	1.0	4.2	1.3	0.5	0.8	3.9	1.0	3.3
9:03	0.4	2.4	0.9	0.6	0.2	0.1	0.6	0.8
9:18	0.8	0.7	0.7	0.8	0.3	0.3	0.7	0.2
9:33	0.6	2.7	1.7	2.6	1.4	5.0	1.2	1.1
9:48	0.5	1.5	0.7	0.3	0.3	26.3	0.2	0.7
10:03	0.7	0.7	0.7	6.5	1.2	1.0	0.7	0.8
10:18	0.7	0.6	1.2	0.8	0.4	0.0	0.2	0.7
10:33	2.6	1.0	0.8	2.2	0.7	0.8	0.8	0.7
10:48	0.8	0.9	1.0	1.9	0.8	2.0	0.9	0.8
Restart Test		0.5	1.1	2.0	0.5	0.8	2.4	1.2
11:30	0.7	1.0	0.7	3.9	0.0	1.0	1.0	1.0
11:45	2.4	0.7	0.7	4.7	1.1	0.5	0.7	0.7
12:00	0.7	1.0	0.7	0.6	0.8	0.7	1.8	0.7
12:15	0.7	0.7	0.7	2.4	1.0	0.4	0.5	0.7
12:30	0.8	0.7	3.3	0.4	0.7	0.7	0.7	0.7
12:45	0.7	0.8	2.7	0.7	0.2	0.9	1.2	0.9
1:00	1.0	0.7	3.4	4.6	0.4	1.0	1.8	0.8
1:15	0.0	0.7	3.0	1.0	0.2	0.7	0.7	0.7
1:30	0.7	0.5	0.7	0.8	0.1	0.2	0.1	0.7
1:45	7.6	1.9	1.7	0.5	1.7	4.1	1.1	1.3
2:00	1.1	1.0	1.1	5.5	1.5	3.6	1.8	1.5
2:13	0.8							


[DustSensor]
(%)
100
80
60
40
20
0
09:28:00
8:28
09:29:00
8:29
09:30:00
8:30
09:31:00
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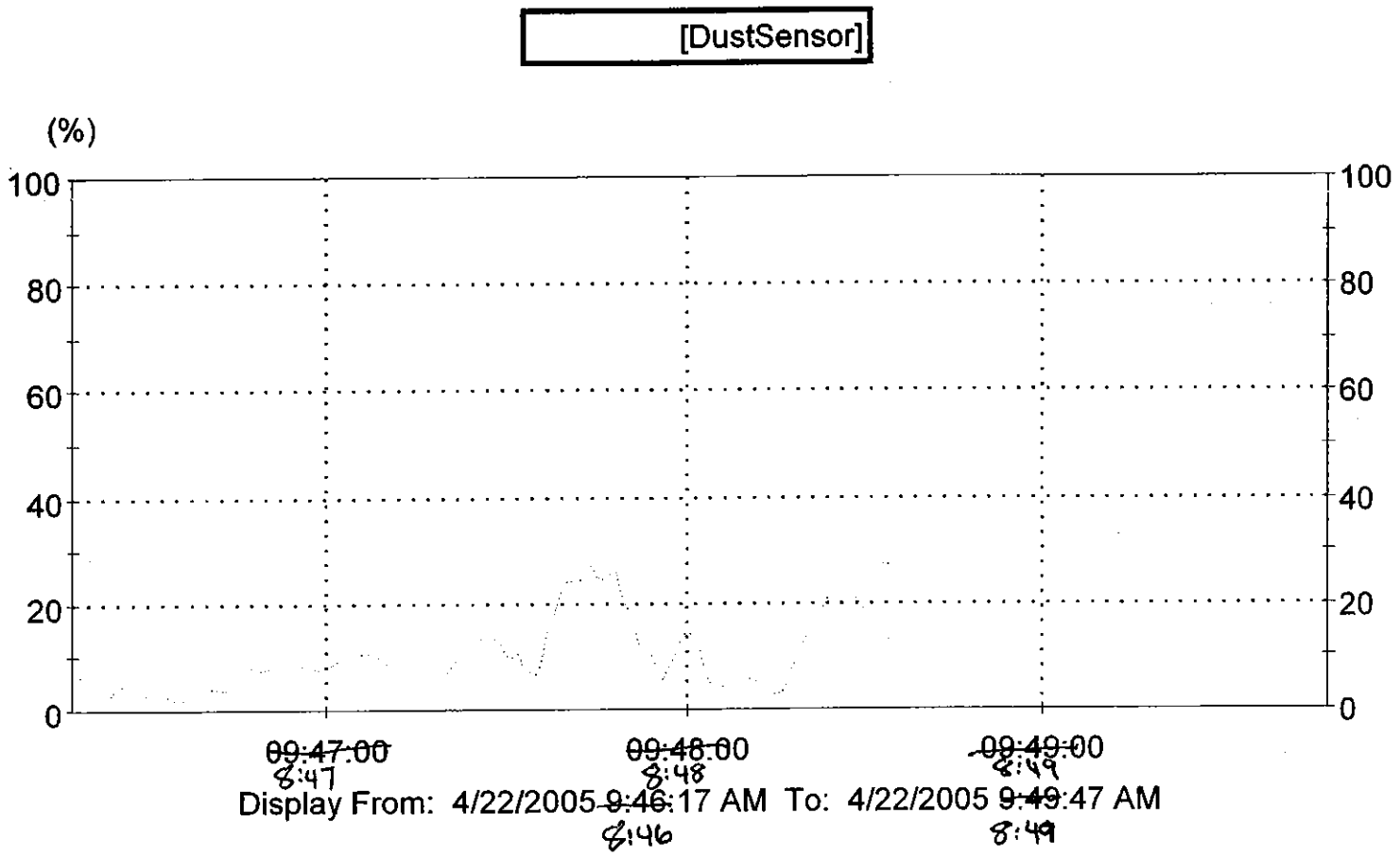
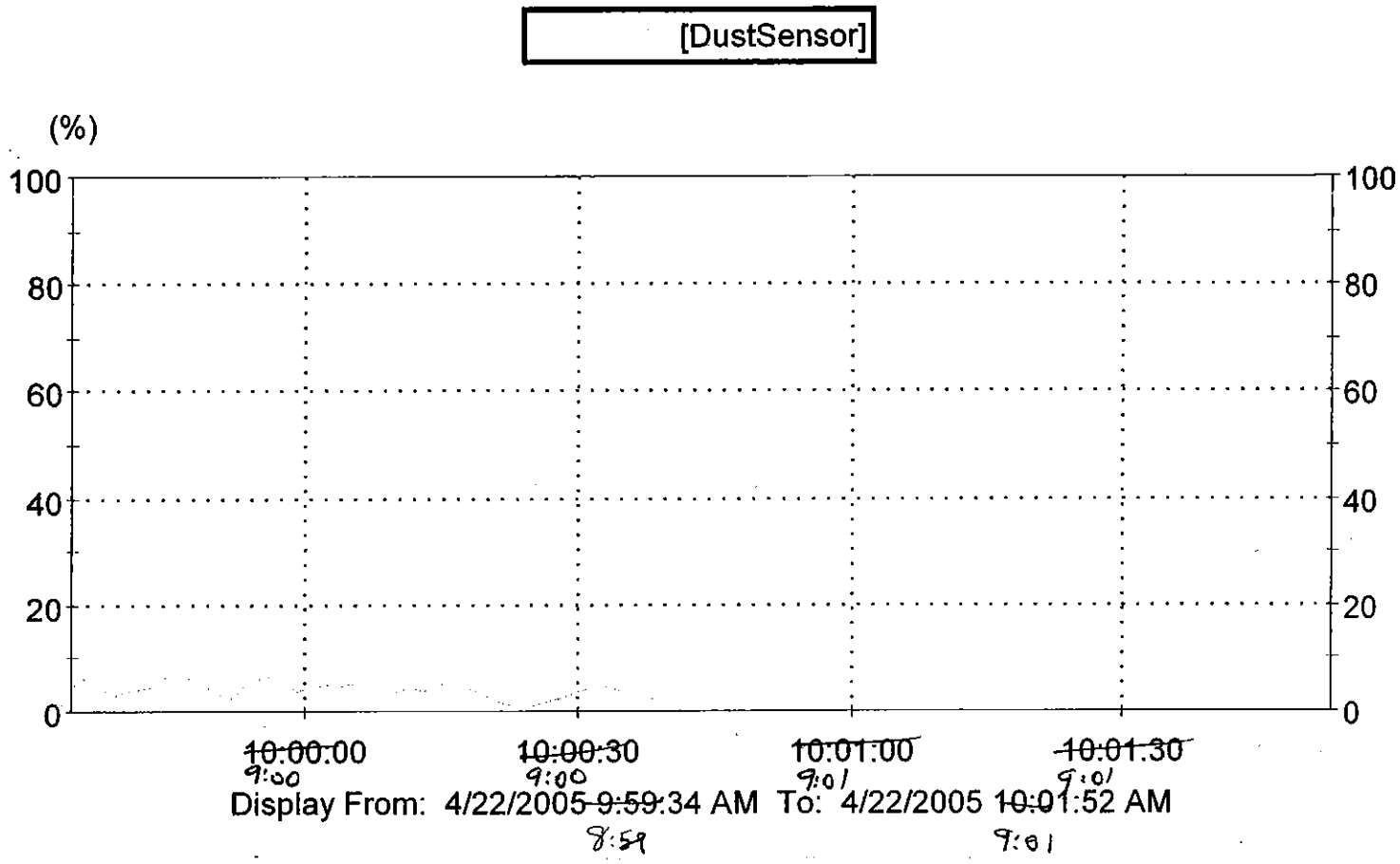
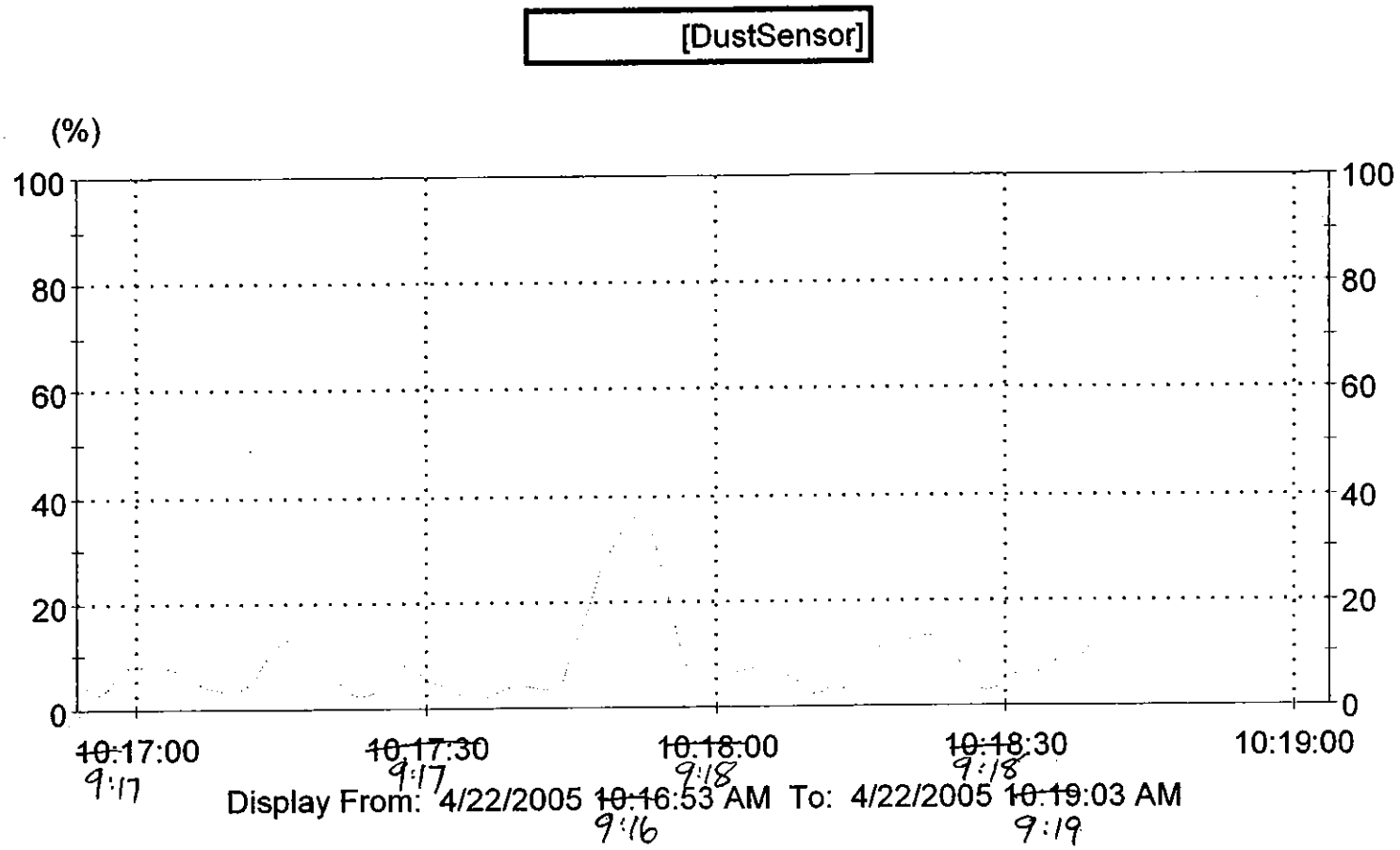
09:32:00
8:32
Display From: 4/22/2005 9:27:48 AM To: 4/22/2005 9:32:29 AM
8:27
8:32


[DustSensor]
(%)
100
80
60
40
20
0
09:47:00
8:47
09:48:00
8:48
09:49:00
8:49
Display From: 4/22/2005 9:46:17 AM To: 4/22/2005 9:49:47 AM
8:46
8:49


[DustSensor]
(%)
100
80
60
40
20
0
10:00:00
9:00
10:00:30
9:00
10:01:00
9:01
10:01:30
9:01
Display From: 4/22/2005 9:59:34 AM To: 4/22/2005 10:01:52 AM
8:59
9:01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(%)
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10:17:00
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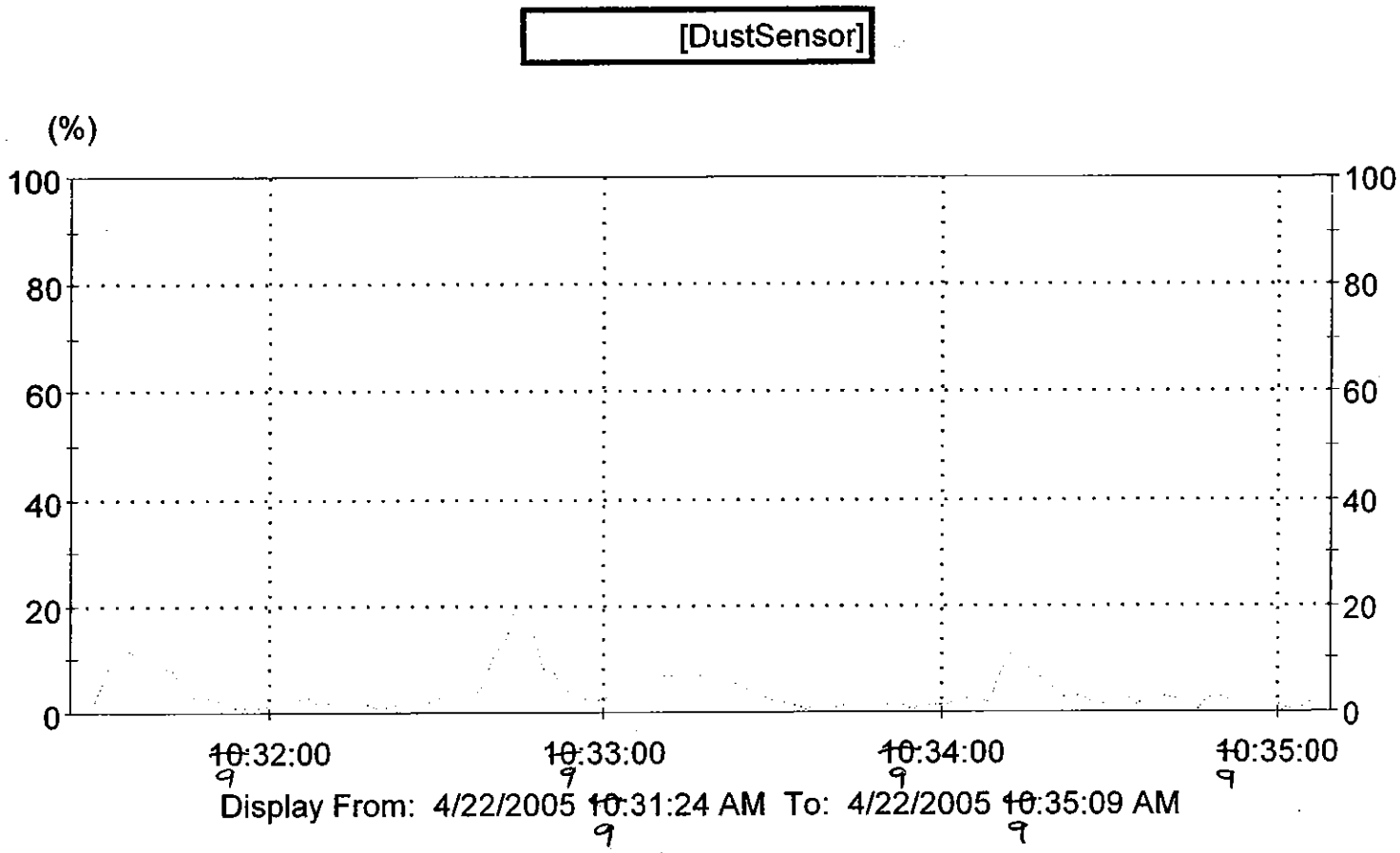
10:18:30
10:19:00
Display From: 4/22/2005 10:16:53 AM To: 4/22/2005 10:19:03 AM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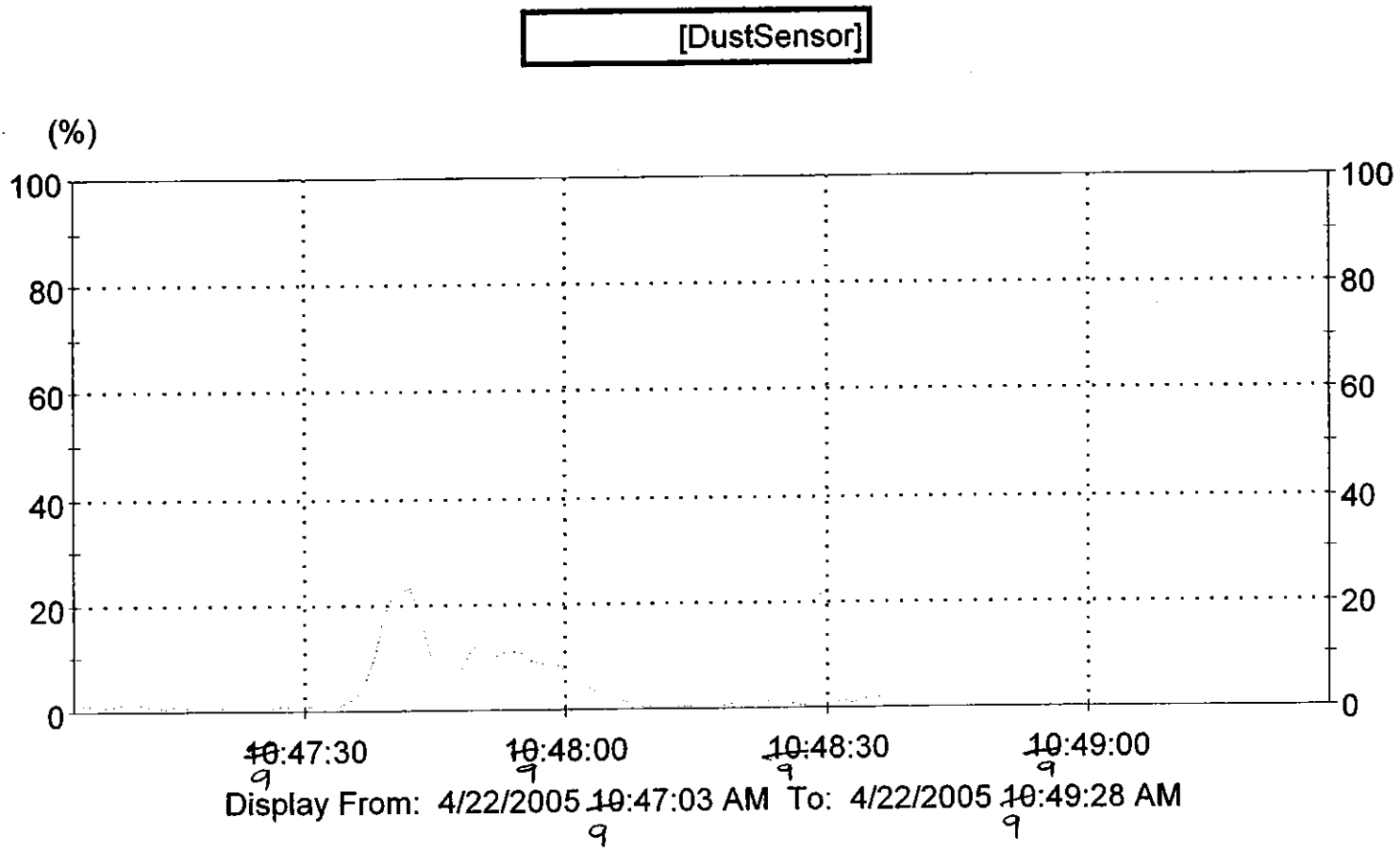
Display From: 4/22/2005 10:31:24 AM To: 4/22/2005 10:35:09 AM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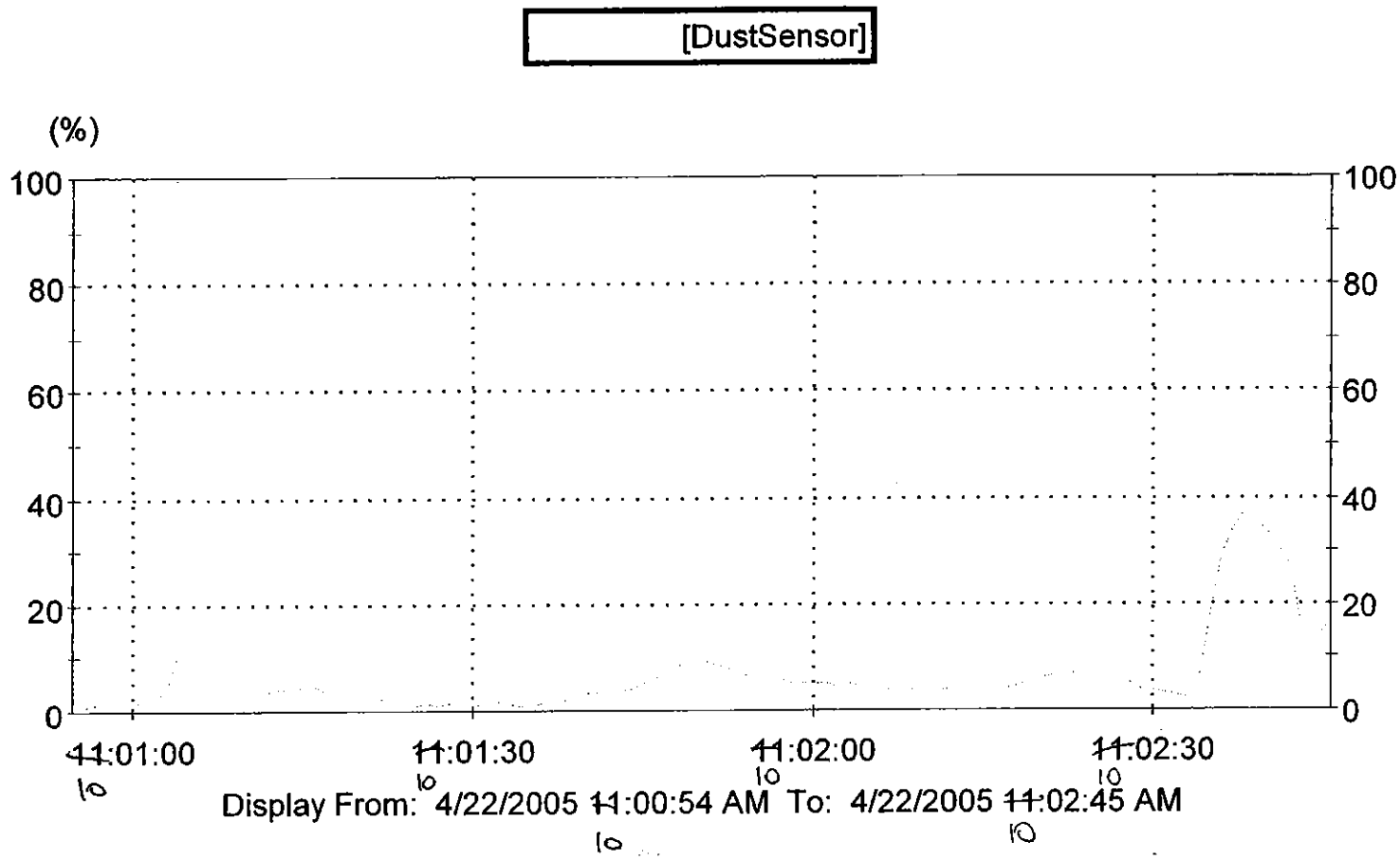
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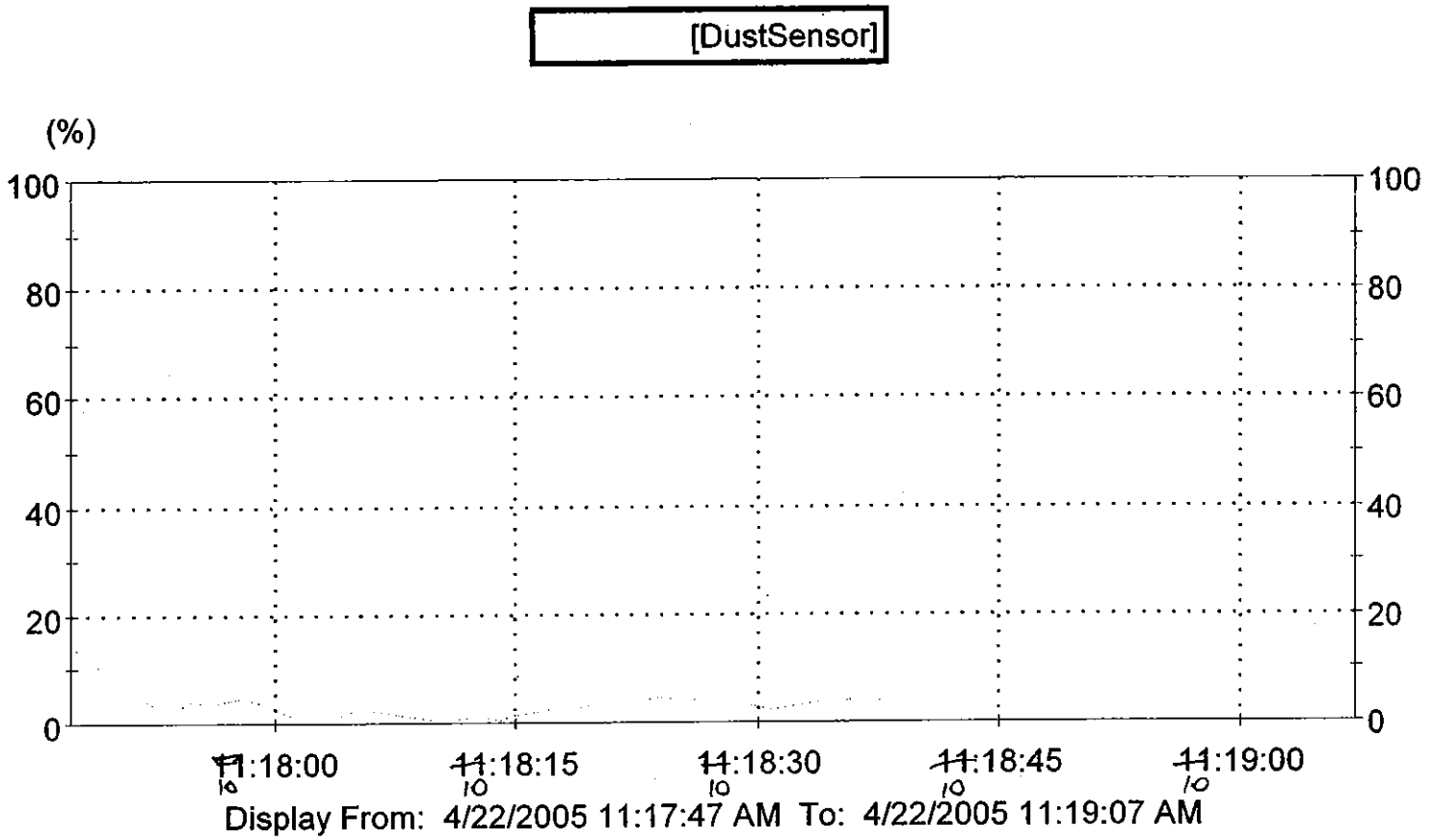
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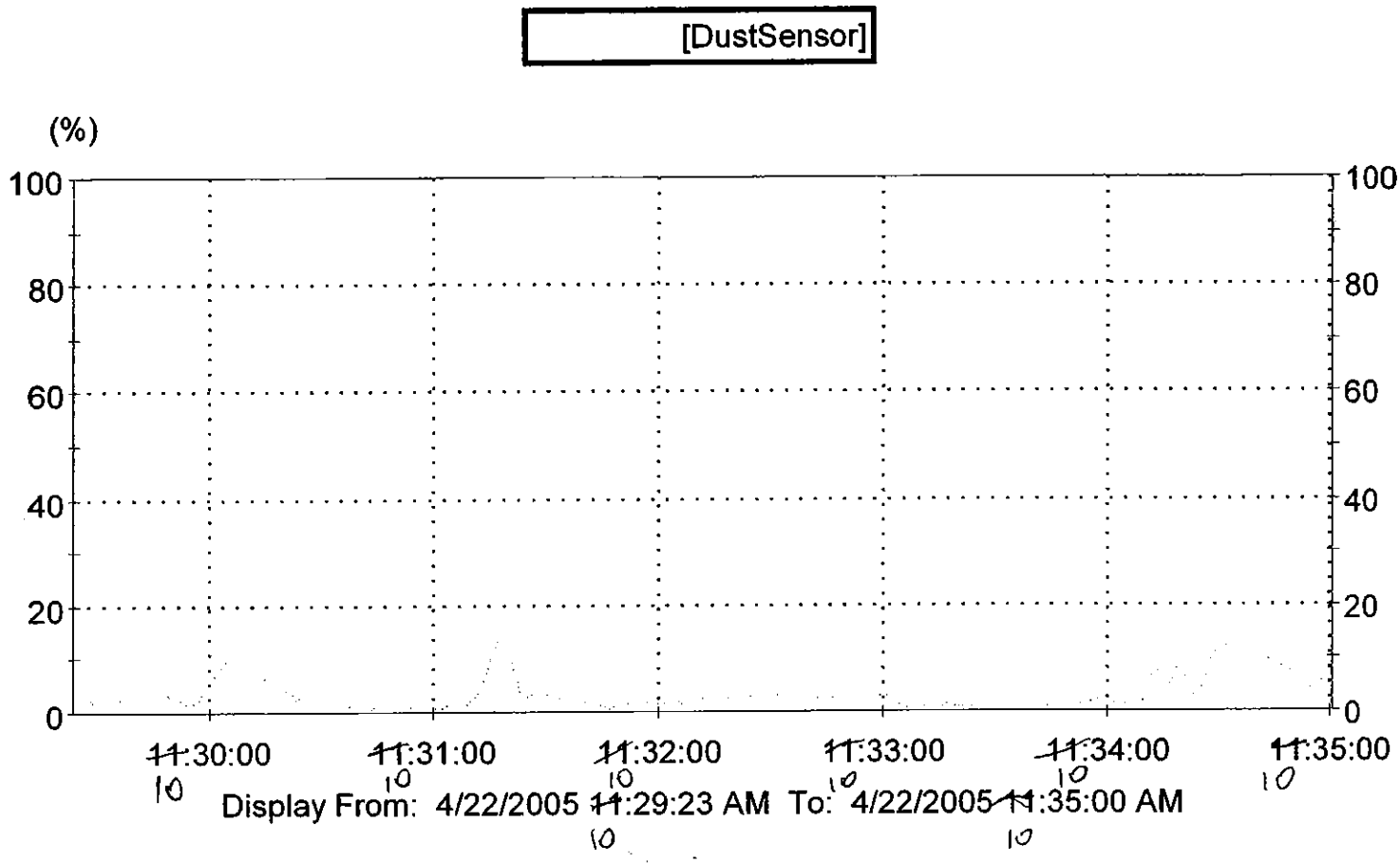
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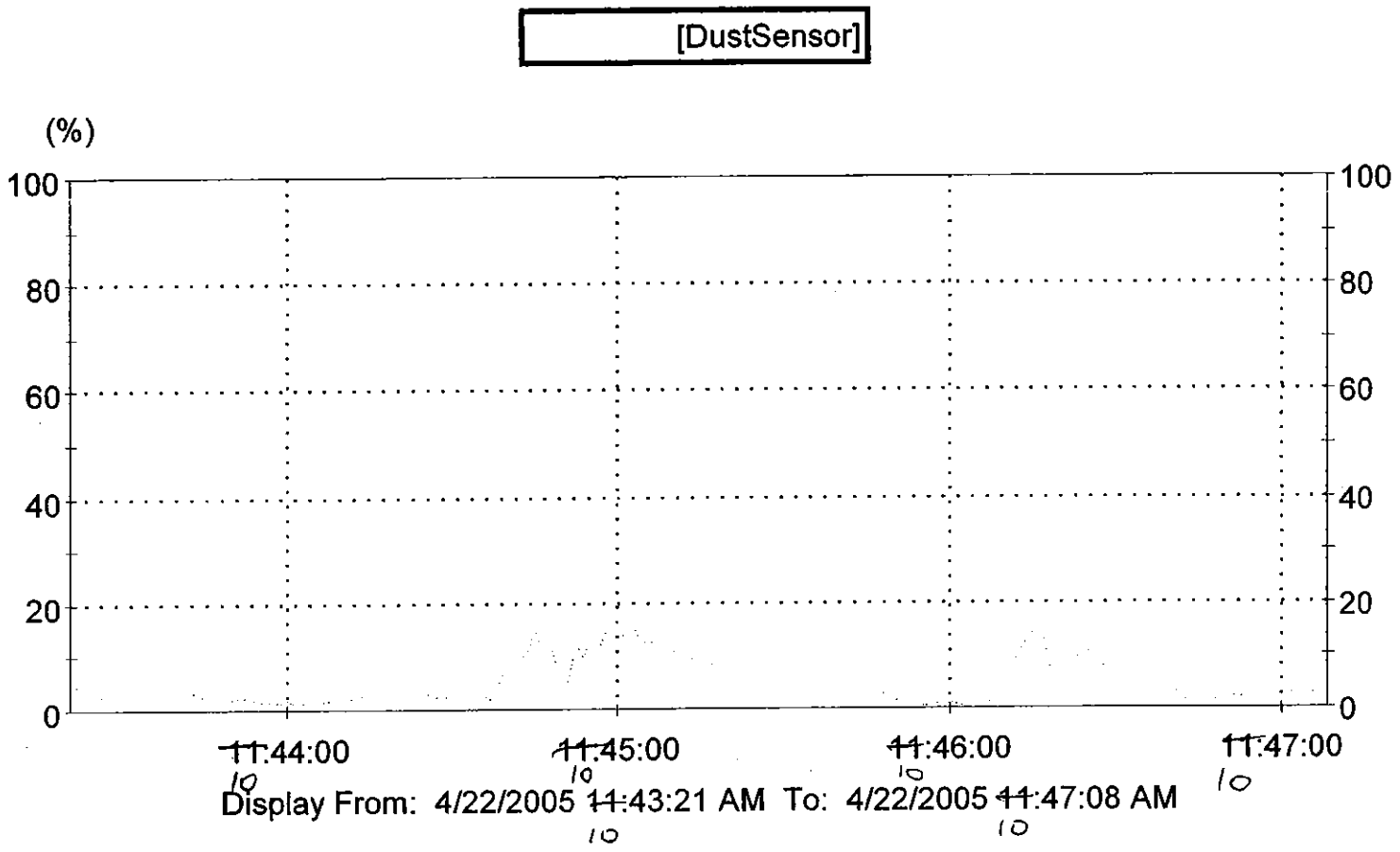
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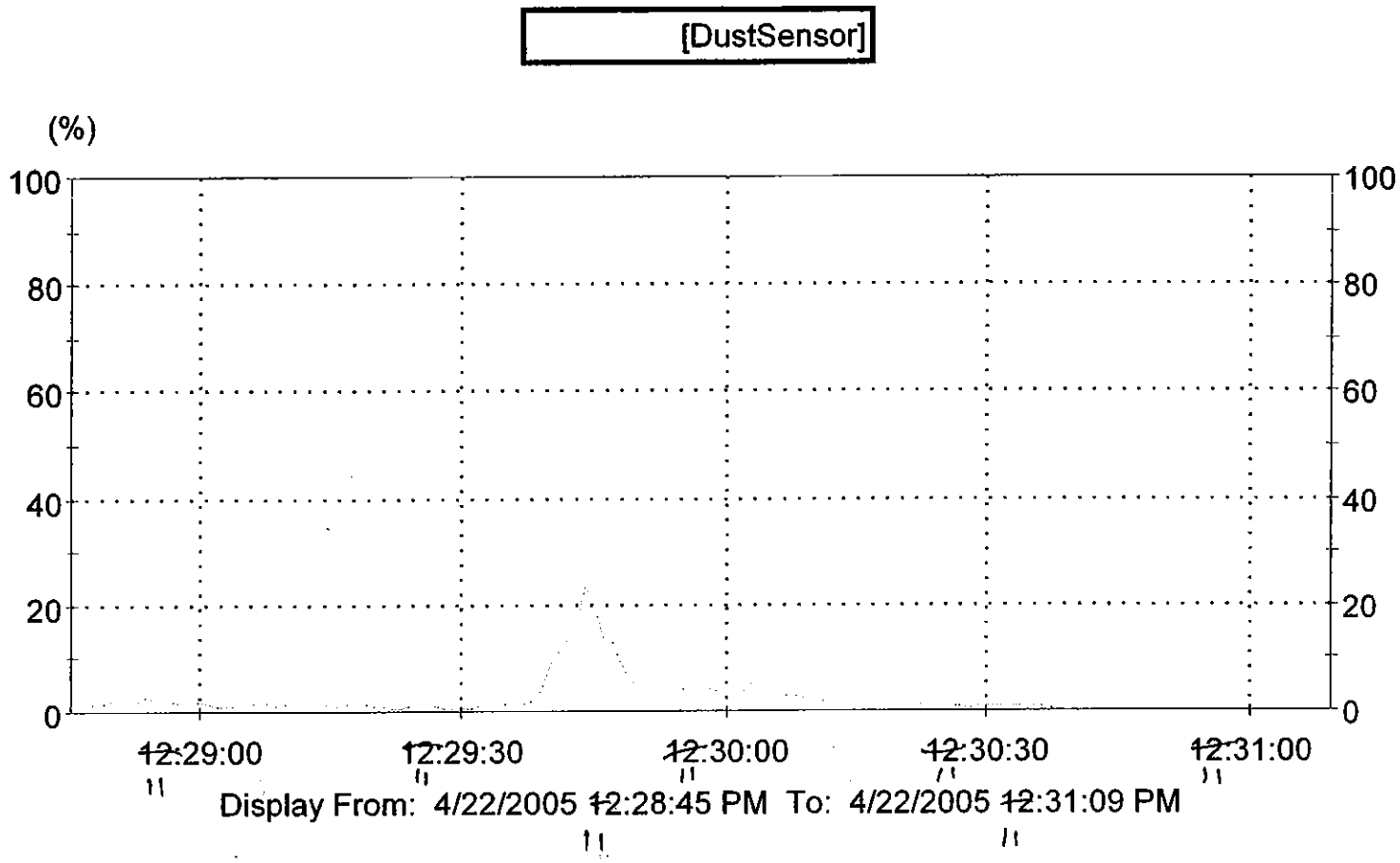
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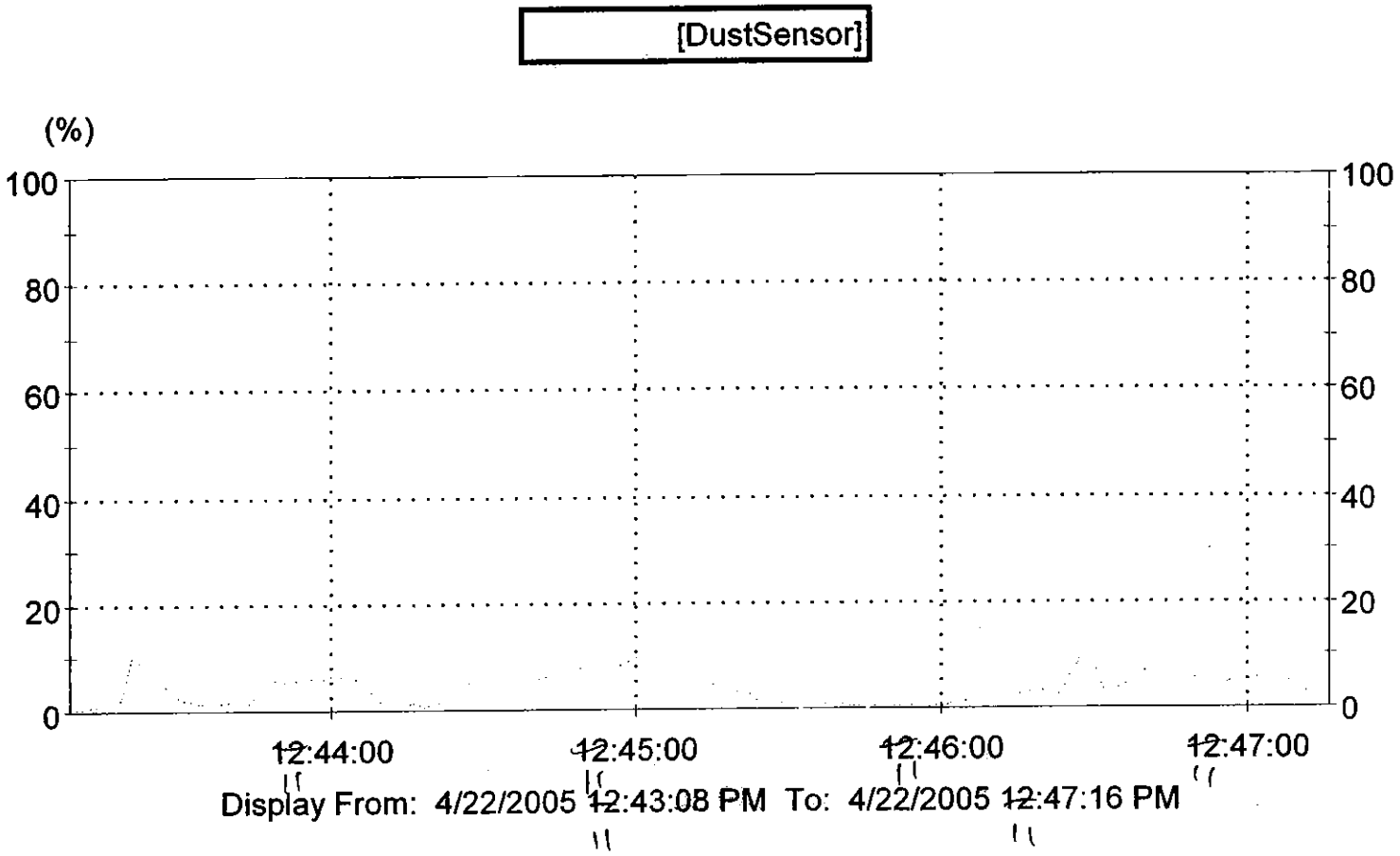
Display From: 4/22/2005 12:28:45 PM To: 4/22/2005 12:31:09 PM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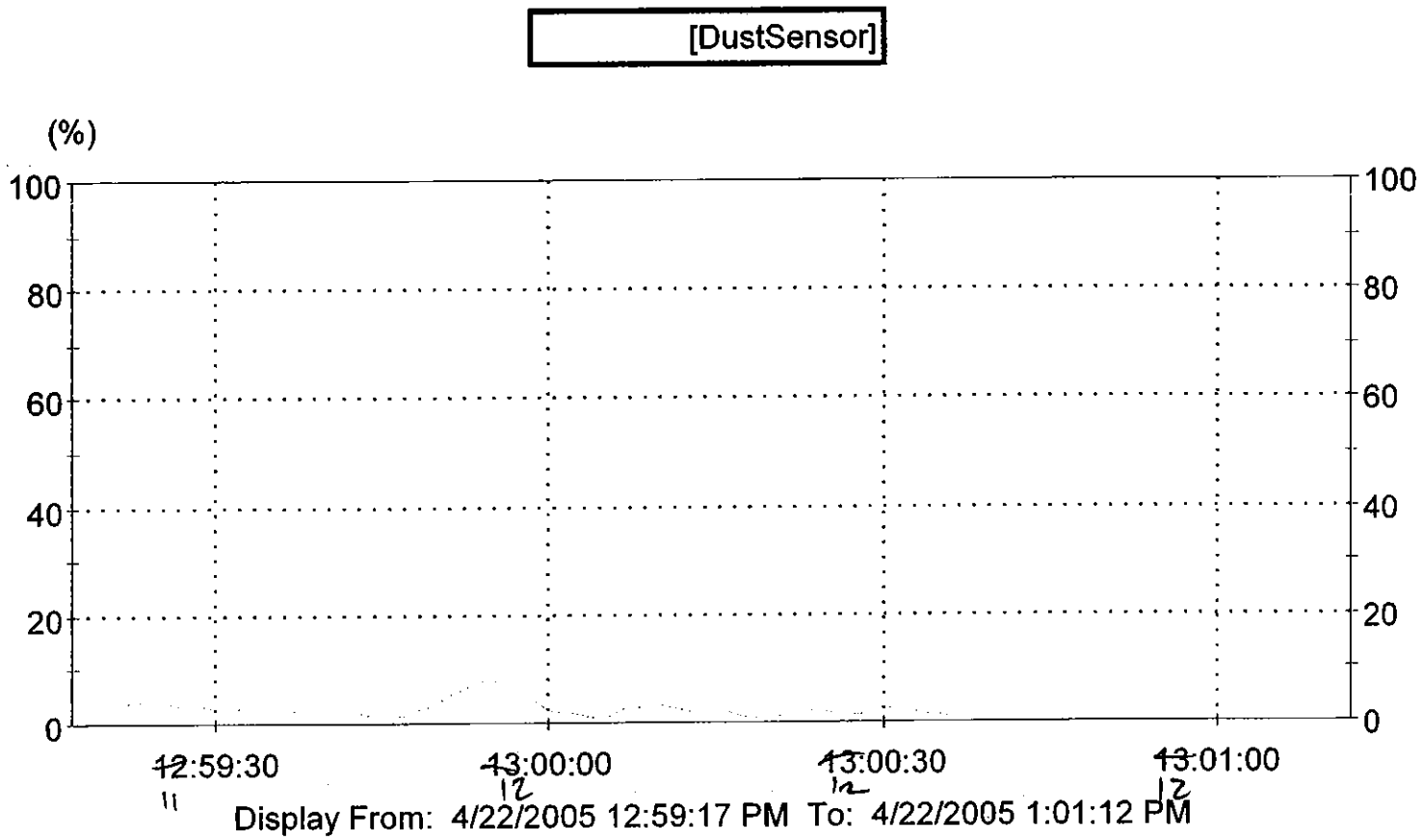
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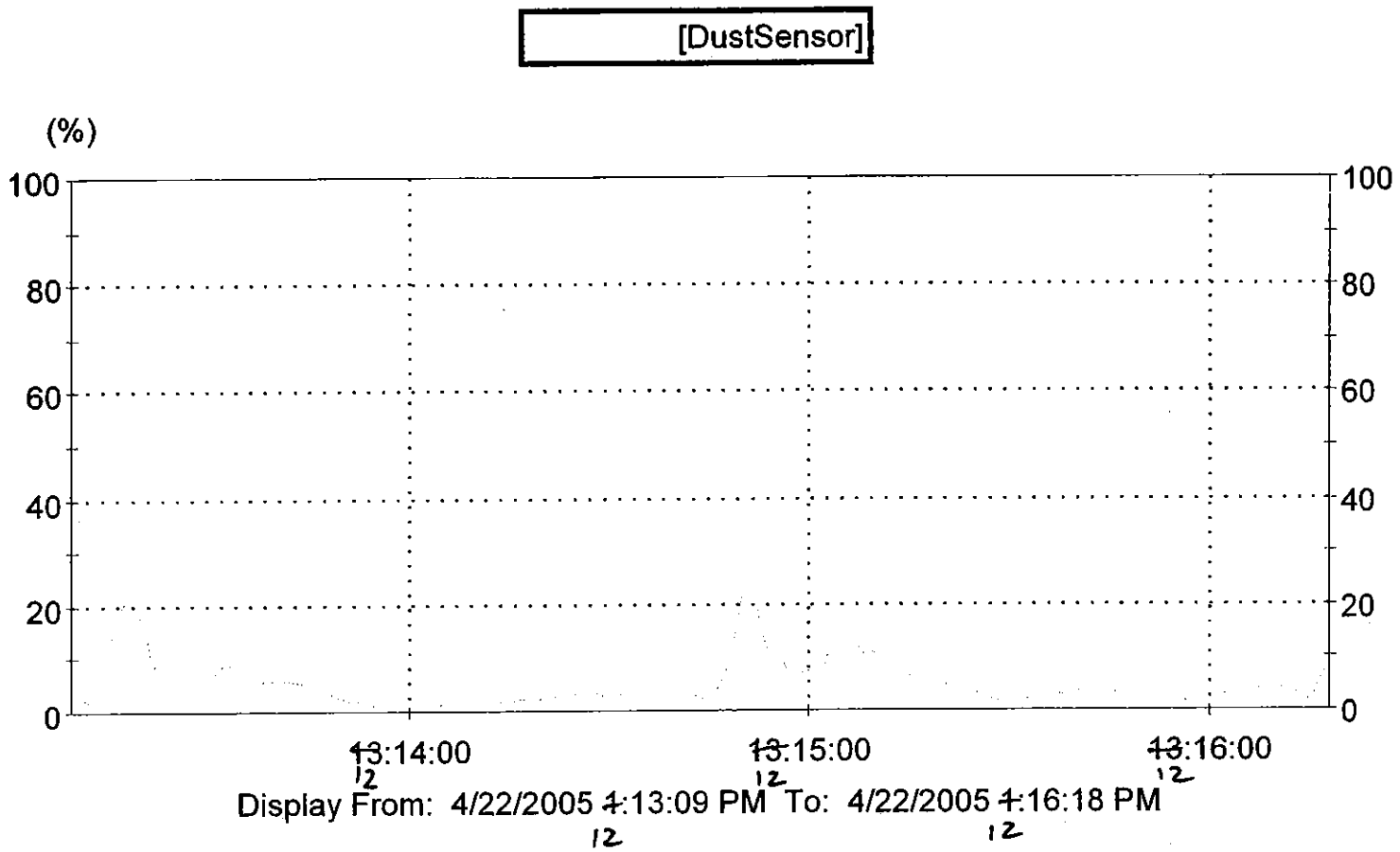
Display From: 4/22/2005 12:59:17 PM To: 4/22/2005 1:01:12 PM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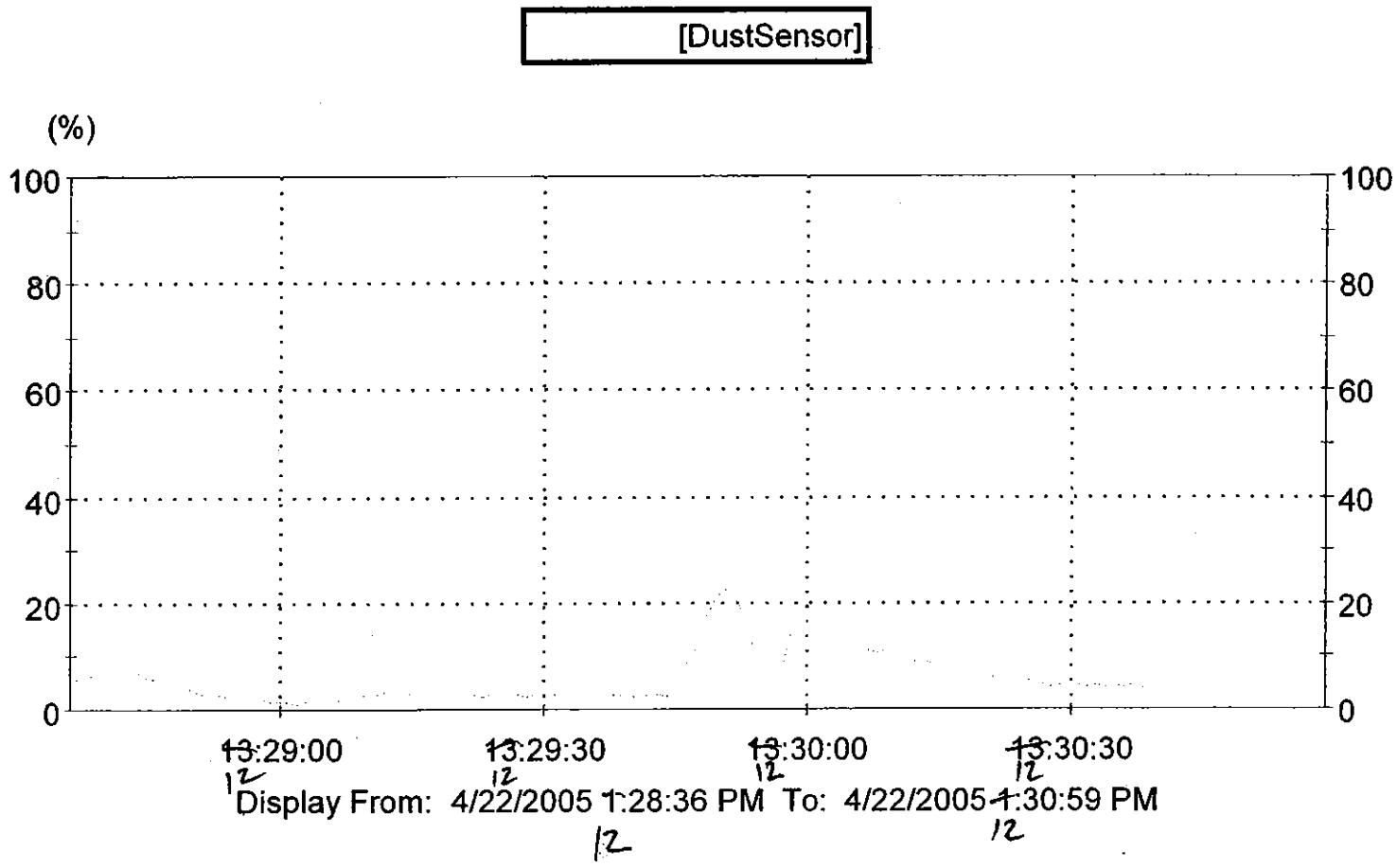
Display From: 4/22/2005 1:13:09 PM To: 4/22/2005 1:16:18 PM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13:30:00
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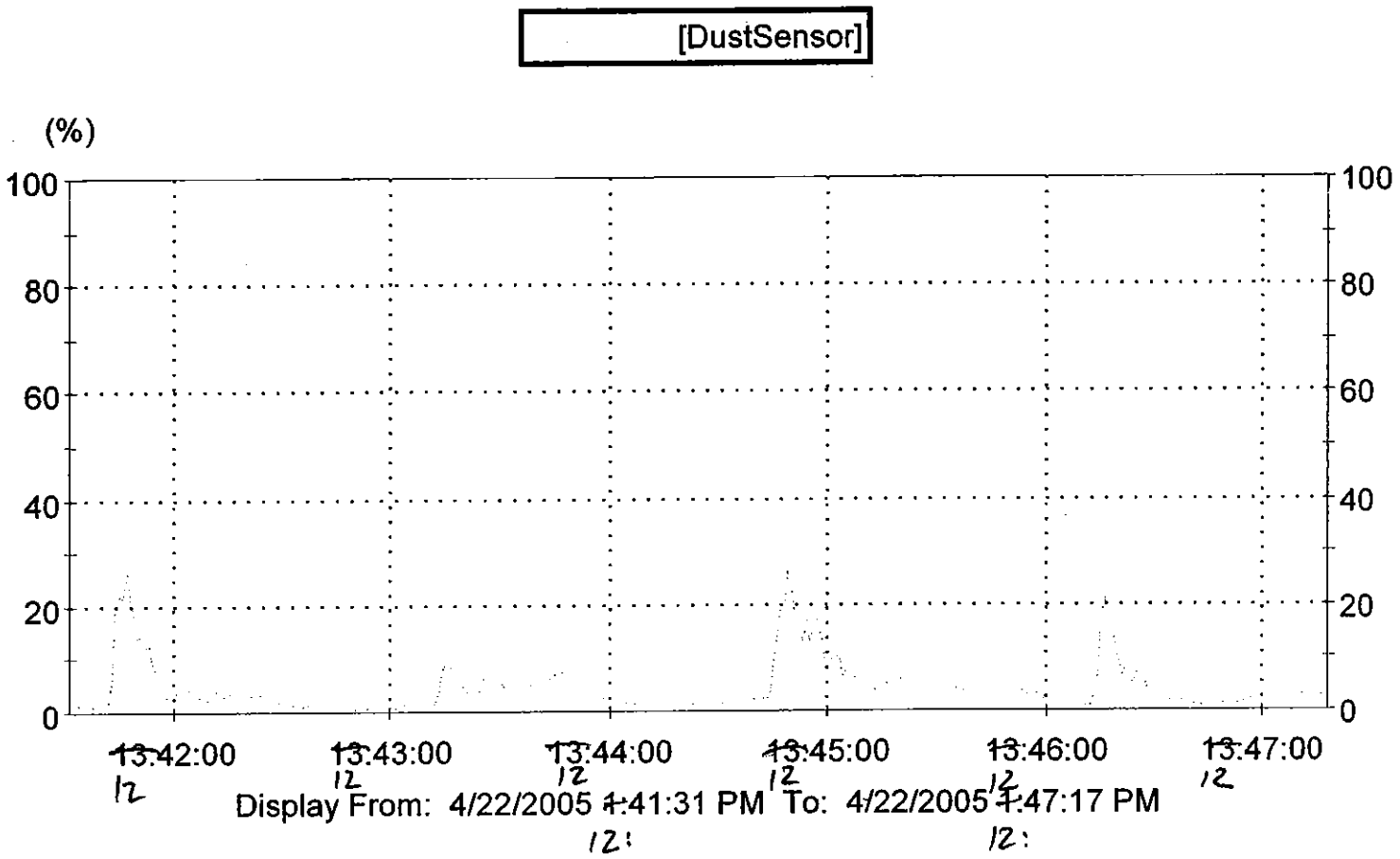
Display From: 4/22/2005 1:28:36 PM To: 4/22/2005 1:30:59 PM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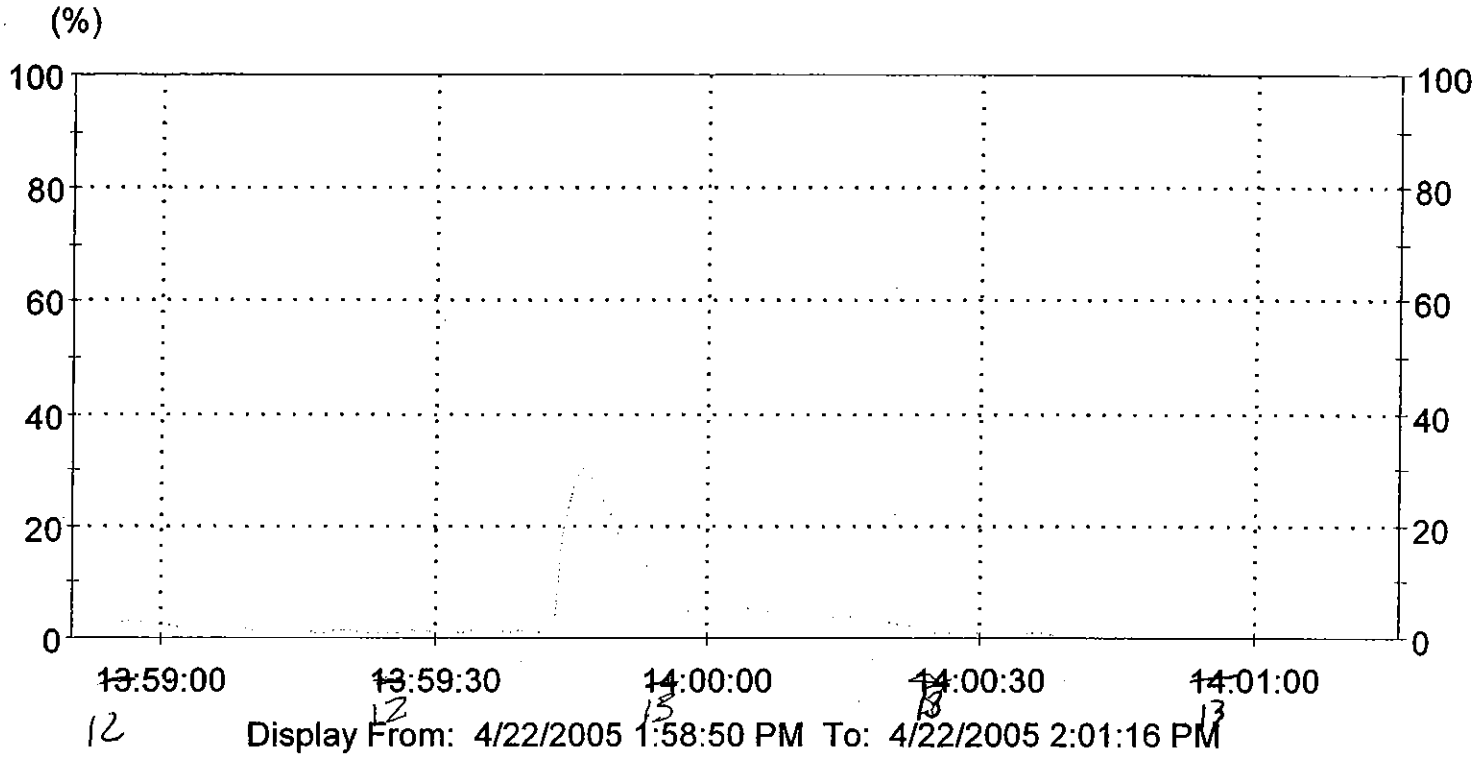
Display From: 4/22/2005 1:41:31 PM To: 4/22/2005 1:47:17 PM

[DustSensor]


(%)
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13:59:00
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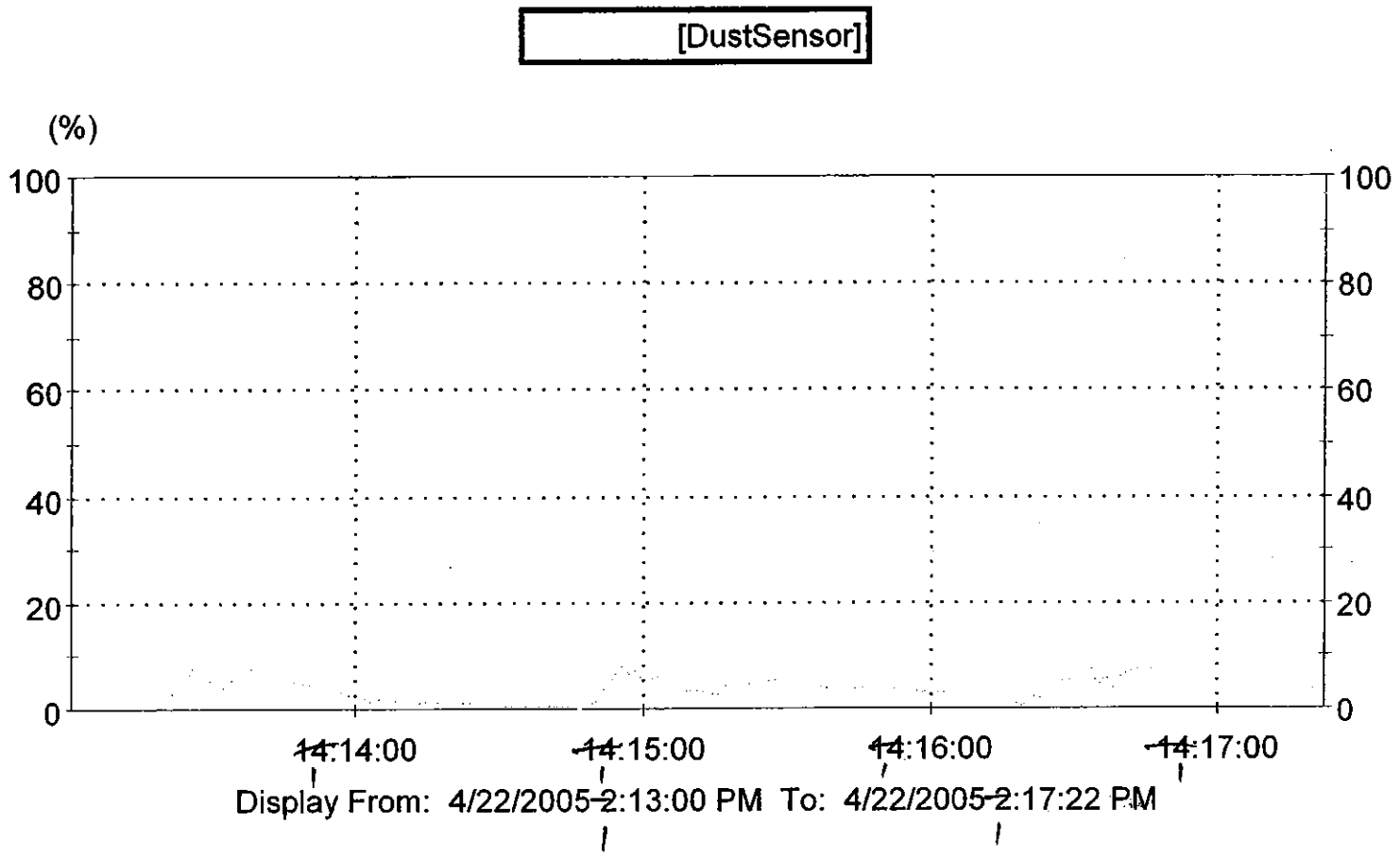
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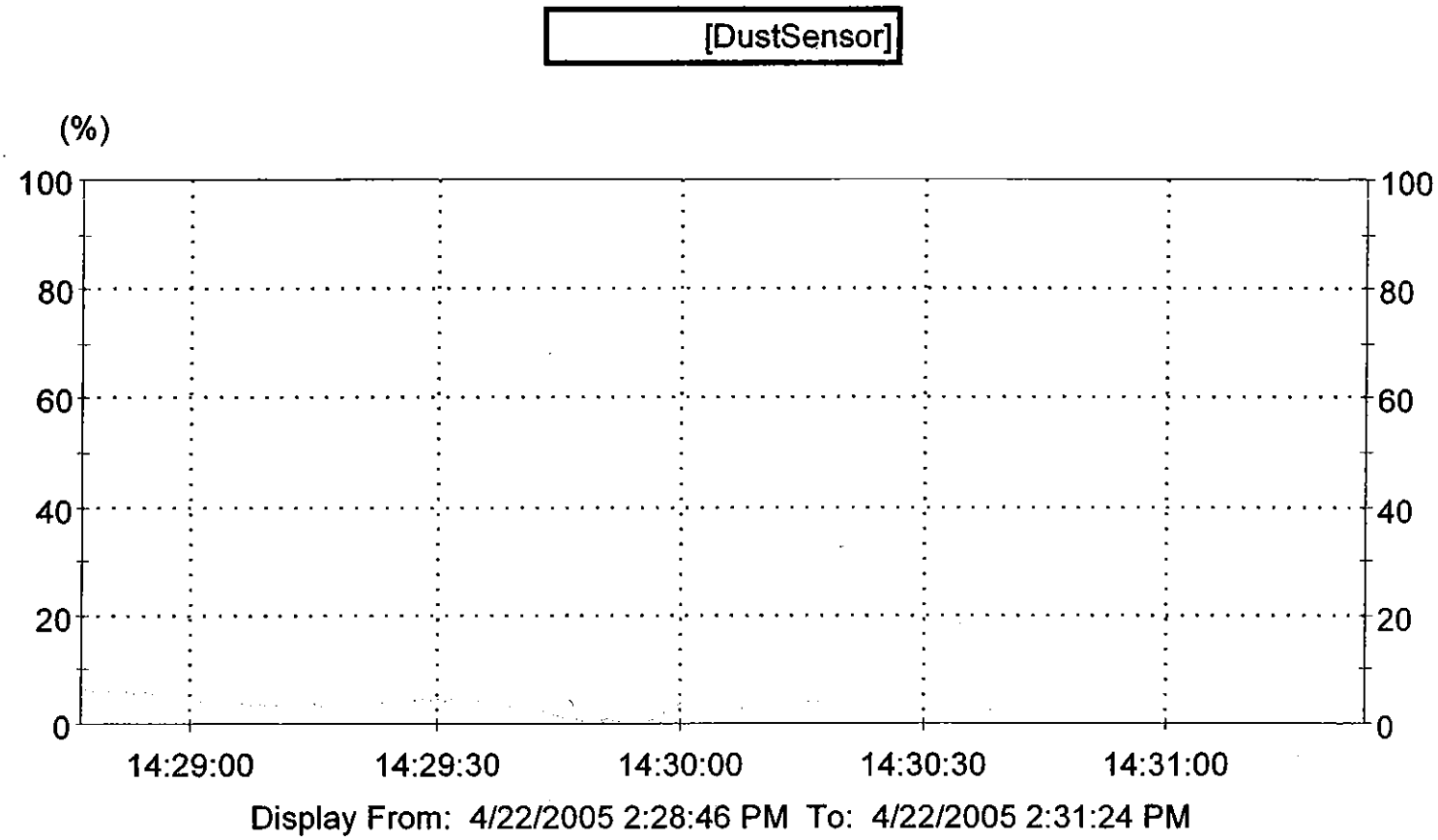
[DustSensor]
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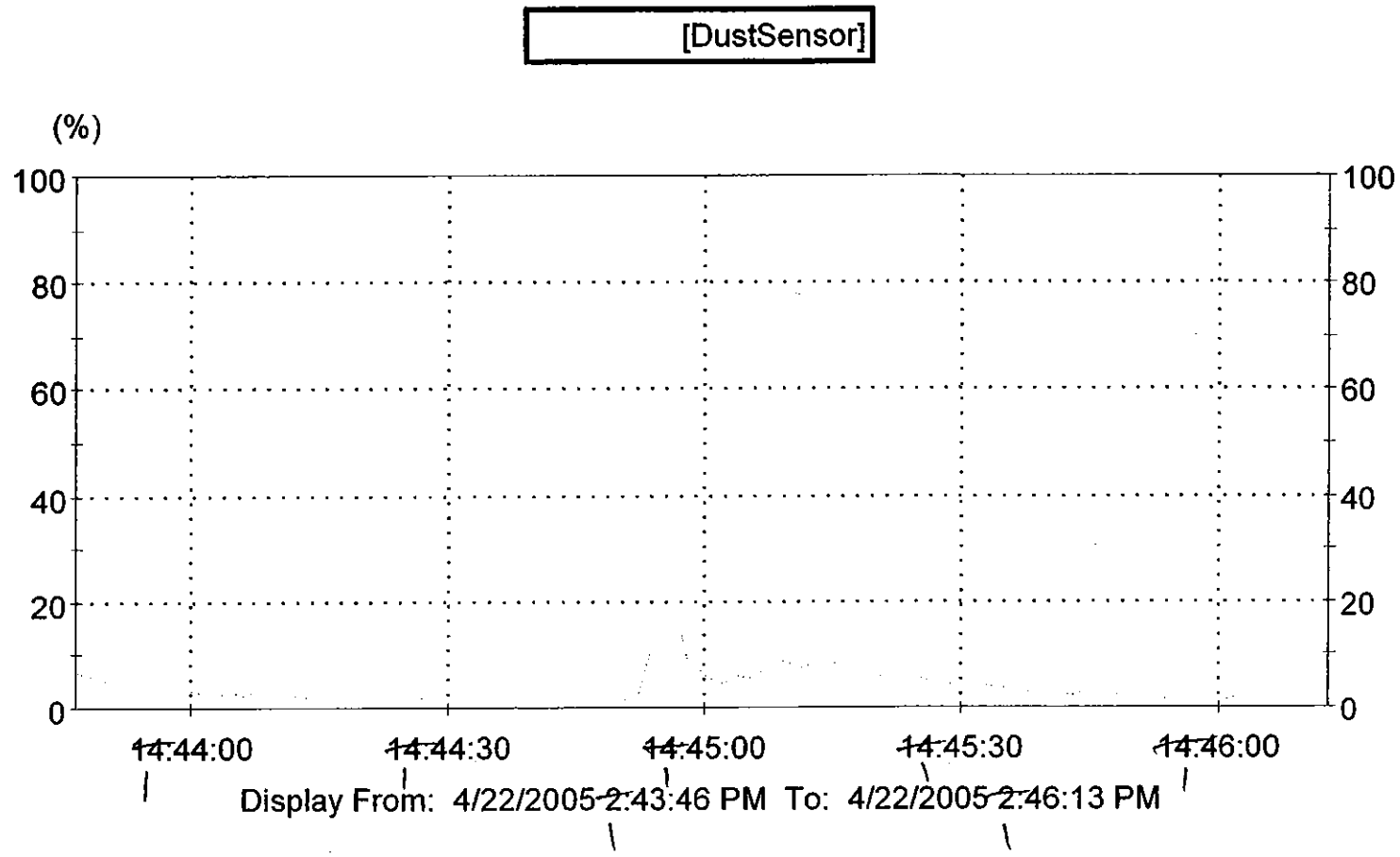
Display From: 4/22/2005 2:28:46 PM To: 4/22/2005 2:31:24 PM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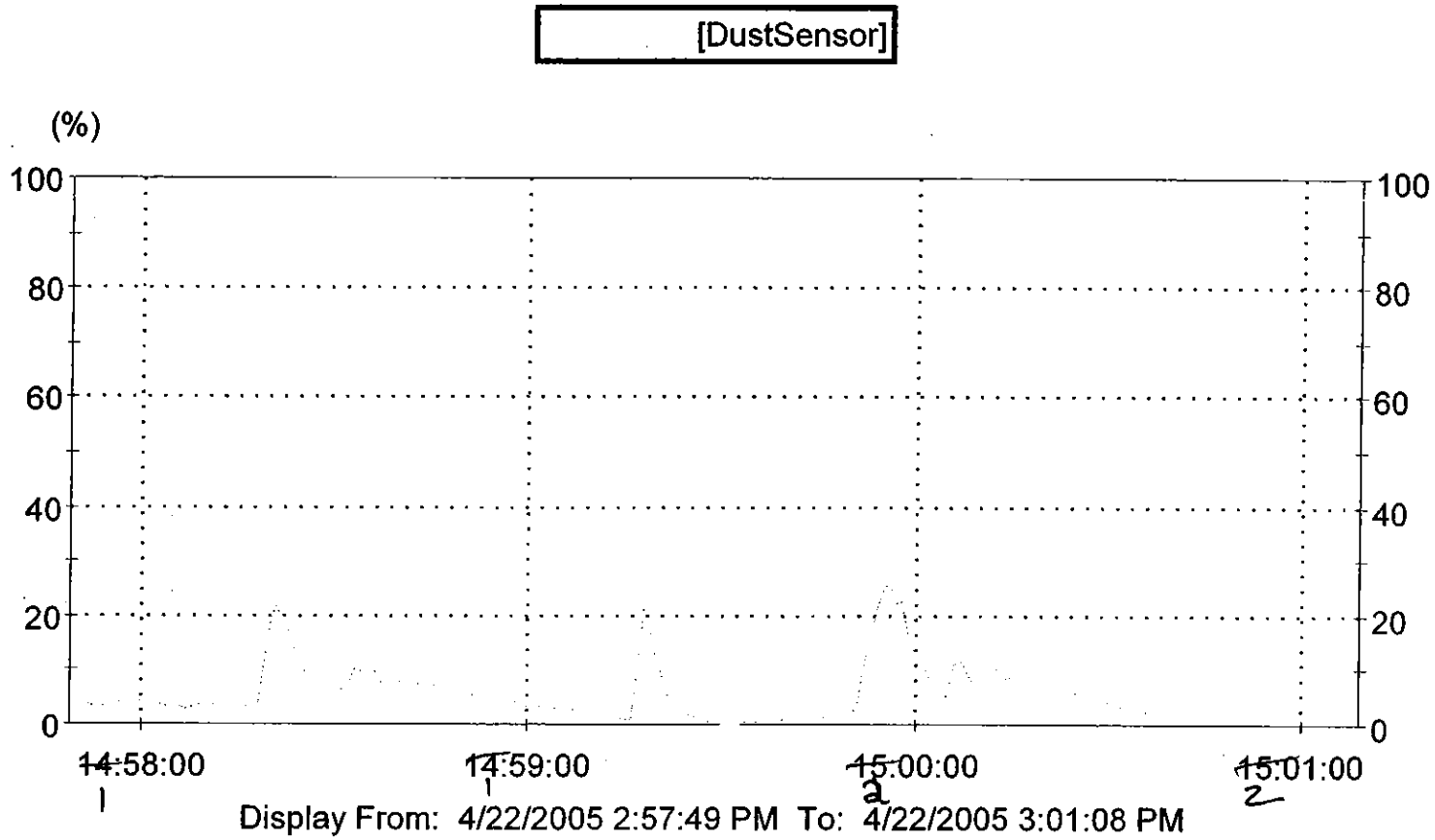
Display From: 4/22/2005 2:43:46 PM To: 4/22/2005 2:46:13 PM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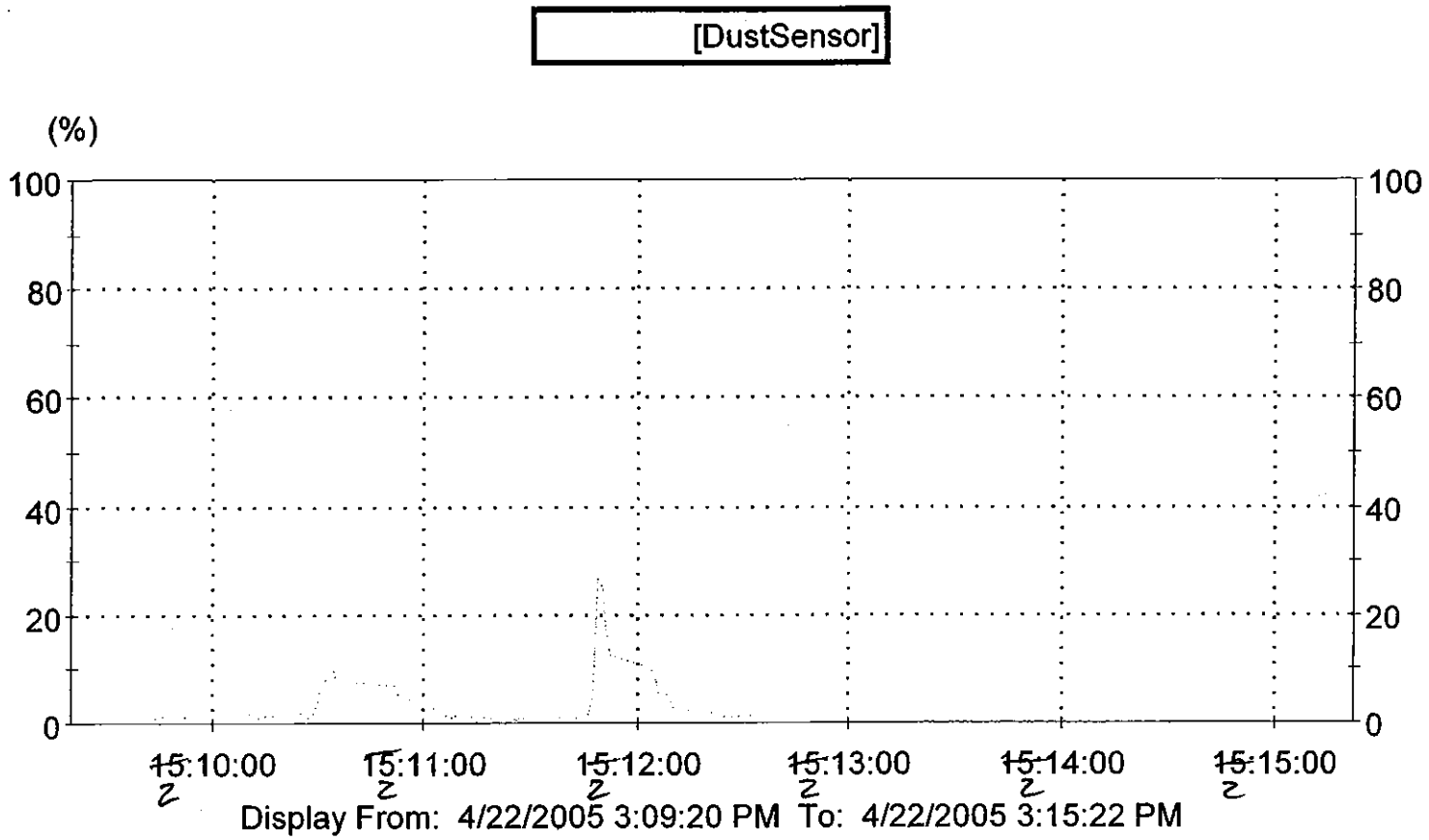
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(%)
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15:13:00
15:14:00
15:15:00
Display From: 4/22/2005 3:09:20 PM To: 4/22/2005 3:15:22 PM

Nucor Steel - Crawfordsville AOD Log

Heat # 254835 **Grade** 409S2 Operator ~~Operator~~ Miffinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 12:17

Lining ID Lining Minutes 17 Heats ~~125~~ 1 Min. Weight 220,000

AddsWiz Oxygen Estimate 72314 TapToCharge 305.7542

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.781	0.280	0.036	0.029	0.129	5.950	0.070	0.005	0.009
A1	0.010	0.220	0.034	0.029	0.009	9.030	0.080	0.005	0.002
A2	0.009	0.280	0.035	0.004	0.319	10.690	0.080	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.32	10.16	27.15	11.12	0.00	0.00	17,727.16

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:18	Chem T1					
12:19	Charge					
12:20	Decarb					
12:20	Sample		0.7806	11		2352
12:25	Sample		0.7806	11		11218
12:27	Temp	2877				
12:27	AddsWiz					
12:28	Decarb					
13:00	Sample		0.0148	91254		90999
13:01	Temp	3057				
13:02	Decarb					
13:06	Chem A1					
13:12	Reduce					
13:13	AddsWiz					
13:24	Sample		0.0068	94512		173165
13:29	Temp	2976				
13:40	Sample		0.0070	94512		180554
13:41	Tap					
Tap Heat	04/18/05 13:41		**TOTALS**	**94512**	**0**	**180644**
Charge Heat	04/18/05 12:19	Transfer Wt	241,993			
Charge - Tap	**82**	**Tap Wt**	**260,071**			

ADDITIONS	Recipe1	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al					670	537		**1,207**
Dolo				2,420			1,821	**4,241**
FeCrSi					1,000			**1,000**
FeSi					1,200	828		**2,028**
HCFeCr			19,700					**19,700**
LCCr	900							**900**
Lime		5,000					2,388	**7,388**
Total	**900**	**5,000**	**19,700**	**2,420**	**2,870**	**1,365**	**4,209**	**36,464**

Nucor Steel - Crawfordsville AOD Log

Heat # 254836 **Grade** 409S1 Operator mhinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 13:43

Lining ID Lining Minutes 99 Heats ~~126~~ 2 Min. Weight 220,000

AddsWiz Oxygen Estimate 73199 TapToCharge 2.708333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.677	0.280	0.035	0.039	0.174	5.630	0.090	0.005	0.009
A1	0.008	0.180	0.031	0.039	0.008	9.460	0.120	0.005	0.002
A2	0.008	0.280	0.031	0.004	0.311	10.770	0.110	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.80	10.13	26.93	10.90	0.00	0.00	18,080.40

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
13:44	Charge					
13:44	Chem T1					
13:48	Sample		0.6771			7995
13:50	Temp	2864				
13:50	AddsWiz					
13:50	Decarb					
14:22	Sample		0.0148	90184		85166
14:24	Temp	3066				
14:25	Decarb					
14:29	Chem A1					
14:31	AddsWiz					
14:33	Reduce					
14:43	Sample		0.0068	92839		152970
14:46	Temp	3018				
14:51	Tap					
Tap Heat	04/18/05 14:51		**TOTALS**	**92839**	**0**	**153076**
Charge Heat	04/18/05 13:44	Transfer Wt	244,000			
Charge - Tap	**68**	**Tap Wt**	**262,930**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				707	692		**1,399**
Dolo			2,574			1,741	**4,315**
FeCrSi				1,000			**1,000**
FeSi				760	1,199		**1,959**
HCFeCr		21,205					**21,205**
Lime	5,000					2,511	**7,511**
Total	**5,000**	**21,205**	**2,574**	**2,467**	**1,891**	**4,252**	**37,389**

Heat # **254837** **Grade** **409S1** Operator mhinz

Practice CRSS LCLN HiT1 Slag ANY SS GRADE Heat Created 04/18/05 14:54

Lining ID Lining Minutes 167 Heats 127 Min. Weight 220,000

AddsWiz Oxygen Estimate 67958 TapToCharge 2.8665

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	1.007	0.290	0.032	0.039	0.194	6.930	0.090	0.006	0.009
T1	1.013	0.290	0.031	0.038	0.193	6.950	0.090	0.006	0.009
A1	0.055	0.250	0.027	0.029	0.009	9.760	0.110	0.005	0.002
A2	0.006	0.290	0.028	0.003	0.333	10.480	0.110	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
50.65	10.98	27.11	11.00	0.00	0.00	16,666.75

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
14:54	Charge					
14:55	Chem T1					
14:58	Sample		1.0130			6198
14:59	Temp	2835				
15:00	AddsWiz					
15:00	Decarb					
15:29	Sample		0.0197	81013		83097
15:31	Temp	3020				
15:32	Decarb					
15:39	Chem A1					
15:54	AddsWiz					
15:56	Reduce					
16:04	Sample		0.0060	92599		223361
16:10	Temp	2993				
16:15	Tap					
Tap Heat	04/18/05 16:15		**TOTALS**	**92599**	**0**	**223468**
Charge Heat	04/18/05 14:54	Transfer Wt	238,000			
Charge - Tap	**81**	**Tap Wt**	**248,738**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	**Total**
Al				602	833		**1,435**
Dolo			2,153			2,396	**4,549**
FeCrSi				1,000			**1,000**
FeSi				295	1,321		**1,616**
HCFeCr		13,393					**13,393**
Lime	5,000					1,924	**6,924**
Total	**5,000**	**13,393**	**2,153**	**1,897**	**2,154**	**4,320**	**28,917**

Heat # 254838 **Grade** 409S1 Operator mhinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 16:17

Lining ID Lining Minutes 247 Heats 128 Min. Weight 220,000

AddsWiz Oxygen Estimate 71696 TapToCharge 3.083333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.940	0.280	0.034	0.040	0.172	6.610	0.080	0.006	0.009
A1	0.041	0.230	0.029	0.030	0.009	9.450	0.110	0.005	0.002
A2	0.005	0.280	0.027	0.003	0.341	10.460	0.110	0.006	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
50.78	11.34	26.34	11.30	0.00	0.00	18,345.12

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
16:18	Charge					
16:18	Chem T1					
16:22	Sample		0.9402			6641
16:24	Temp	2829				
16:24	AddsWiz					
16:25	Decarb					
16:55	Sample		0.0148	85624		83547
16:58	Temp	3028				
16:58	Decarb					
17:02	Chem A1					
17:16	AddsWiz					
17:19	Reduce					
17:28	Sample		0.0070	96033		197680
17:32	Temp	3016				
17:37	Reduce					
17:39	Sample		0.0070	96033		203824
17:40	Tap					
Tap Heat	04/18/05 17:40		**TOTALS**	**96033**	**0**	**203914**
Charge Heat	04/18/05 16:18	Transfer Wt	244,000			
Charge - Tap	**82**	**Tap Wt**	**256,572**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				668	802		**1,470**
Dolo			2,881			2,047	**4,928**
FeCrSi				1,000			**1,000**
FeSi				626	1,304		**1,930**
HCFeCr		15,180					**15,180**
Lime	5,000					2,480	**7,480**
Total	**5,000**	**15,180**	**2,881**	**2,294**	**2,106**	**4,527**	**31,988**

Heat # **254839** **Grade** **409S1** Operator mhinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 17:43

Lining ID Lining Minutes 329 Heats 129 Min. Weight 220,000

AddsWiz Oxygen Estimate 67253 TapToCharge 3.145833

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.024	0.270	0.033	0.044	0.204	7.660	0.110	0.006	0.010
A1	0.029	0.220	0.028	0.040	0.009	9.900	0.130	0.005	0.002
A2	0.009	0.270	0.027	0.002	0.397	10.630	0.120	0.007	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.51	12.11	24.95	11.16	0.00	0.00	17,856.01

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
17:43	Charge					
17:43	Chem T1					
17:48	Sample		1.0241			8502
17:49	Temp	2782				
17:49	AddsWiz					
17:50	Decarb					
18:18	Sample		0.0197	80276		79520
18:20	Temp	3032				
18:21	Decarb					
18:25	Chem A1					
18:27	Chem A1					
18:39	AddsWiz					
18:44	Reduce					
18:51	Sample		0.0060	90204		194349
18:54	Temp	3000				
19:00	Reduce					
19:02	Sample		0.0060	90204		200036
19:02	Tap					
Tap Heat	04/18/05 19:02		**TOTALS**	**90204**	**0**	**200151**
Charge Heat	04/18/05 17:43	Transfer Wt	238,000			
Charge - Tap	**80**	**Tap Wt**	**246,717**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				766	735		**1,501**
Dolo			2,979			2,227	**5,206**
FeCrSi				1,000			**1,000**
FeSi				358	1,227		**1,585**
HCFeCr		10,582					**10,582**
LCCr				400			**400**
Lime	5,000					1,955	**6,955**
Total	**5,000**	**10,582**	**2,979**	**2,524**	**1,962**	**4,182**	**27,229**

Nucor Steel - Crawfordsville AOD Log

Heat # 254840 **Grade** 409S1 Operator mhinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 19:04

Lining ID Lining Minutes 408 Heats 130 Min. Weight 220,000

AddsWiz Oxygen Estimate 53017 TapToCharge 2:920833

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.064	0.310	0.038	0.045	0.145	9.720	0.120	0.006	0.008
A1	0.070	0.280	0.030	0.033	0.009	10.300	0.130	0.004	0.003
A2	0.007	0.310	0.031	0.002	0.329	10.970	0.130	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
50.13	12.46	24.25	12.84	0.00	0.00	13,520.38

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
19:05	Chem T1					
19:05	Charge					
19:09	Sample		1.0644			5942
19:12	Temp	2844				
19:12	AddsWiz					
19:12	Decarb					
19:38	Sample		0.0197	59151		77620
19:39	Temp	3003				
19:40	Decarb					
19:46	Chem A1					
20:03	AddsWiz					
20:06	Reduce					
20:11	Sample		0.0044	72294		197409
20:14	Temp	3025				
20:21	Reduce					
20:22	Sample		0.0044	72294		202532
20:23	Tap					
Tap Heat	04/18/05 20:23		**TOTALS**	**72294**	**0**	**202625**
Charge Heat	04/18/05 19:05	Transfer Wt	234,000			
Charge - Tap	**78**	**Tap Wt**	**234,913**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				665	582		**1,247**
Dolo			2,620			1,374	**3,994**
FeCrSi				1,000			**1,000**
FeSi				127	1,071		**1,198**
HCFeCr		2,379					**2,379**
LCCr				400			**400**
Lime	5,000					392	**5,392**
Total	**5,000**	**2,379**	**2,620**	**2,192**	**1,653**	**1,766**	**15,610**

Heat # 254841 **Grade** 409S1 Operator mhinz

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 04/18/05 20:25

Lining ID Lining Minutes 486 Heats 131 Min. Weight 220,000

AddsWiz Oxygen Estimate 62164 TapToCharge 2.404167

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.083	0.270	0.037	0.042	0.241	8.710	0.140	0.007	0.014
A1	0.040	0.240	0.032	0.031	0.008	10.130	0.140	0.005	0.002
A2	0.009	0.260	0.030	0.002	0.344	10.840	0.140	0.007	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
50.83	12.22	25.02	11.50	0.00	0.00	14,522.42

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
20:25	Charge					
20:26	Chem T1					
20:30	Sample		1.0833			7746
20:31	Temp	2820				
20:31	AddsWiz					
20:32	Decarb					
21:00	Sample		0.0197	68656		83866
21:02	Temp	3015				
21:03	Decarb					
21:09	Chem A1					
21:20	AddsWiz					
21:24	Reduce					
21:29	Sample		0.0047	79624		184424
21:34	Temp	3029				
21:40	Reduce					
21:41	Sample		0.0047	79624		189856
21:42	Tap					
Tap Heat	04/18/05 21:42		**TOTALS**	**79624**	**0**	**189950**
Charge Heat	04/18/05 20:25	Transfer Wt	234,000			
Charge - Tap	**77**	**Tap Wt**	**238,026**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				744	476		**1,220**
Dolo			2,880			1,345	**4,225**
FeCrSi				1,000			**1,000**
FeSi				135	969		**1,104**
HCFeCr		6,261					**6,261**
LCCr				400			**400**
Lime	5,000					690	**5,690**
Total	**5,000**	**6,261**	**2,880**	**2,279**	**1,445**	**2,035**	**19,900**

Heat # 254849 **Grade** 409S1 Operator bfay

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 08:22

Lining ID Lining Minutes 1011 Heats 139 Min. Weight 220,000

AddsWiz Oxygen Estimate 65775 TapToCharge 3.016667

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.883	0.270	0.027	0.042	0.218	7.390	0.120	0.010	0.009
A1	0.012	0.180	0.023	0.039	0.008	9.150	0.140	0.004	0.002
A2	0.008	0.290	0.023	0.007	0.289	10.590	0.130	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
52.07	12.02	26.81	8.83	0.01	0.00	17,345.66

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
8:23	Chem T1					
8:23	Charge					
8:29	Sample		0.8826			10675
8:30	Temp	2732				
8:30	AddsWiz					
8:31	Decarb					
8:53	AddsWiz					
8:57	Sample		0.0246	82689		70953
8:59	Temp	3096				
9:00	Decarb					
9:04	Chem A1					
9:04	Reduce					
9:04	AddsWiz					
9:13	Sample		0.0076	84943		121865
9:17	Temp	3061				
9:24	Tap					
Tap Heat	04/19/05 9:24		**TOTALS**	**84943**	**0**	**121964**
Charge Heat	04/19/05 8:23	Transfer Wt	240,000			
Charge - Tap	**61**	**Tap Wt**	**249,452**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	**Total**
Al				786	547		**1,333**
Dolo			3,128			1,835	**4,963**
FeCrSi				1,000			**1,000**
FeSi				488	1,051		**1,539**
HCFeCr		11,810					**11,810**
Lime	5,000					1,642	**6,642**
Total	**5,000**	**11,810**	**3,128**	**2,274**	**1,598**	**3,477**	**27,287**

ADDITIONS	Recipe1	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al					739	401		**1,140**
Dolo				2,921			1,183	**4,104**
FeCrSi					1,000			**1,000**
FeSi					416	902		**1,318**
HCFeCr			9,549					**9,549**
LC FeSi	250							**250**
LCCr					400			**400**
Lime		5,000					533	**5,533**
Total	**250**	**5,000**	**9,549**	**2,921**	**2,555**	**1,303**	**1,716**	**23,294**

Heat # 254850 **Grade** 409S1 Operator bfay

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 09:26

Lining ID Lining Minutes 1072 Heats 140 Min. Weight 220,000

AddsWiz Oxygen Estimate 47734 TapToCharge 2.454167

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.758	0.300	0.030	0.041	0.091	8.560	0.100	0.005	0.005
A1	0.022	0.270	0.026	0.024	0.010	9.480	0.110	0.004	0.002
A2	0.005	0.310	0.027	0.005	0.269	10.710	0.110	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.56	12.06	23.31	12.86	0.00	0.00	13,797.00

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
9:26	Charge					
9:26	Chem T1					
9:30	Sample		0.7585			7544
9:32	Temp	2884				
9:32	AddsWiz					
9:32	Decarb					
9:58	Sample		0.0148	63152		78914
10:00	Temp	3069				
10:01	Decarb					
10:05	Chem A1					
10:14	AddsWiz					
10:16	Reduce					
10:22	Sample		0.0041	68449		159431
10:27	Temp	3074				
10:30	Reduce					
10:32	Sample		0.0041	68449		164560
10:33	Tap					
Tap Heat	04/19/05 10:33		**TOTALS**	**68449**	**0**	**164672**
Charge Heat	04/19/05 9:26	Transfer Wt	248,000			
Charge - Tap	**66**	**Tap Wt**	**254,352**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				634	635		**1,269**
Dolo			2,503			1,470	**3,973**
FeCrSi				1,000			**1,000**
FeSi				170	1,153		**1,323**
HCFeCr		7,502					**7,502**
LCCr				400			**400**
Lime	5,000					364	**5,364**
Total	**5,000**	**7,502**	**2,503**	**2,204**	**1,788**	**1,834**	**20,831**

Nucor Steel - Crawfordsville AOD Log

Heat # 254851 **Grade** 409S1 Operator ~~bfay~~ MHinz

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 11:19

Lining ID Lining Minutes 1138 Heats 141 Min. Weight 220,000

AddsWiz Oxygen Estimate 53526 TapToCharge 47.2125

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.809	0.260	0.025	0.037	0.175	8.610	0.110	0.006	0.008
A1	0.008	0.160	0.023	0.038	0.009	9.380	0.120	0.004	0.002
A2	0.006	0.280	0.022	0.003	0.256	10.770	0.120	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.64	12.10	24.18	11.83	0.00	0.00	16,208.39

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
11:20	Charge					
11:20	Chem T1					
11:26	Sample		0.8091		341	11209
11:28	Temp	2776				
11:28	Decarb					
11:29	AddsWiz					
11:57	Sample		0.0148	71568	341	89136
12:00	Temp	3063				
12:00	Decarb					
12:06	Chem A1					
12:07	AddsWiz					
12:11	Reduce					
12:17	Sample		0.0049	74583	341	152087
12:23	Temp	3017				
12:31	Reduce					
12:32	Sample		0.0049	74583	341	157258
12:33	Tap					
Tap Heat	04/19/05 12:33		**TOTALS**	**74583**	**341**	**157368**
Charge Heat	04/19/05 11:20	Transfer Wt	244,000			
Charge - Tap	**73**	**Tap Wt**	**249,633**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				716	645		**1,361**
Dolo			2,834			1,827	**4,661**
FeCrSi				1,000			**1,000**
FeSi				283	1,154		**1,437**
HCFeCr		7,114					**7,114**
LCCr				400			**400**
Lime	5,000					1,252	**6,252**
Total	**5,000**	**7,114**	**2,834**	**2,399**	**1,799**	**3,079**	**22,225**

Heat # 254852 **Grade** 409S1 Operator mhinz

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 12:49

Lining ID Lining Minutes 1211 Heats 142 Min. Weight 220,000

AddsWiz Oxygen Estimate 60551 TapToCharge 20.83317

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.854	0.260	0.029	0.042	0.204	7.810	0.120	0.005	0.007
A1	0.008	0.190	0.024	0.038	0.009	8.910	0.140	0.004	0.002
A2	0.008	0.330	0.023	0.012	0.071	11.290	0.130	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.84	12.02	25.64	10.30	0.00	0.00	17,819.13

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:54	Charge					
12:57	Chem T1					
12:58	Sample		0.8542			8094
13:00	Temp	2706				
13:00	Decarb					
13:01	AddsWiz					
13:29	Sample		0.0148	77812		84429
13:31	Temp	3066				
13:32	Decarb					
13:38	Chem A1					
13:39	AddsWiz					
13:42	Reduce					
13:51	Sample		0.0058	80878		155322
13:55	Temp	3011				
14:04	Sample		0.0059	80878		164342
14:05	Tap					
Tap Heat	04/19/05 14:05		**TOTALS**	**80878**	**0**	**164460**
Charge Heat	04/19/05 12:54	Transfer Wt	229,000			
Charge - Tap	71	**Tap Wt**	**237,326**			

ADDITIONS	Recipe1	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	**Total**
Al					801	617		**1,418**
Dolo				3,128			2,007	**5,135**
FeCrSi					1,000			**1,000**
FeSi	500				535	1,094		**2,129**
HCFeCr			9,661					**9,661**
LCCr					400			**400**
Lime		5,000					1,864	**6,864**
Total	**500**	**5,000**	**9,661**	**3,128**	**2,736**	**1,711**	**3,871**	**26,607**

Heat # 254853 **Grade** 409S1 Operator mhinz

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 14:07

Lining ID Lining Minutes 1282 Heats 143 Min. Weight 220,000

AddsWiz Oxygen Estimate 48425 TapToCharge 3.083333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.858	0.280	0.028	0.039	0.150	9.280	0.100	0.005	0.012
A1	0.063	0.260	0.024	0.021	0.009	9.840	0.120	0.005	0.002
A2	0.007	0.310	0.023	0.003	0.282	10.940	0.110	0.004	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
50.12	12.34	23.04	14.16	0.00	0.00	16,271.80

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
14:08	Charge					
14:09	Chem T1					
14:13	Sample		0.8583			10383
14:17	Temp	2845				
14:18	Decarb					
14:18	AddsWiz					
14:44	Sample		0.0148	60116		86917
14:46	Temp	3015				
14:47	Decarb					
14:53	Chem A1					
15:07	AddsWiz					
15:12	Reduce					
15:19	Sample		0.0054	73326		207844
15:24	Temp	3050				
15:29	Reduce					
15:33	Sample		0.0059	73326		220676
15:43	Tap					
Tap Heat	04/19/05 15:43		**TOTALS**	**73326**	**0**	**220781**
Charge Heat	04/19/05 14:08	Transfer Wt	238,000			
Charge - Tap	**95**	**Tap Wt**	**244,277**			

ADDITIONS	Recipe1	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
1006	3,500							**3,500**
Al					667	844		**1,511**
Dolo				2,643			2,184	**4,827**
FeCrSi					1,000			**1,000**
FeSi					141	1,332		**1,473**
HCFeCr			4,256					**4,256**
LCCr					300			**300**
Lime		5,000					1,466	**6,466**
Total	**3,500**	**5,000**	**4,256**	**2,643**	**2,108**	**2,176**	**3,650**	**23,333**

Heat # **254854** **Grade** **409S1** Operator mhinz

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 15:45

Lining ID Lining Minutes 1377 Heats 144 Min. Weight 220,000

AddsWiz Oxygen Estimate 65414 TapToCharge 3.012667

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.955	0.290	0.025	0.038	0.387	7.950	0.150	0.006	0.013
A1	0.020	0.210	0.022	0.031	0.009	9.290	0.160	0.004	0.002
A2	0.007	0.290	0.021	0.002	0.323	10.640	0.160	0.004	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.47	12.05	24.86	11.31	0.00	0.00	18,591.38

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
15:46	Charge					
15:46	Chem F1					
15:49	Sample		0.9549			6522
15:51	Sample		0.9549			6614
15:53	Temp	2653				
15:54	AddsWiz					
15:54	Decarb					
16:23	Sample		0.0197	81380		79482
16:25	Temp	3052				
16:26	Decarb					
16:29	Chem A1					
16:37	AddsWiz					
16:41	Reduce					
16:49	Sample		0.0073	85803		166021
16:52	Temp	2994				
16:57	Reduce					
16:59	Sample		0.0073	85803		170499
17:00	Tap					
Tap Heat	04/19/05 17:00		**TOTALS**	**85803**	**0**	**170602**
Charge Heat	04/19/05 15:46	Transfer Wt	230,000			
Charge - Tap	**74**	**Tap Wt**	**236,626**			

ADDITIONS	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				821	614		**1,435**
Dolo			3,249			2,119	**5,368**
FeCrSi				1,000			**1,000**
FeSi				131	1,093		**1,224**
HCFeCr		9,038					**9,038**
LCCr				300			**300**
Lime	5,000					2,163	**7,163**
Total	**5,000**	**9,038**	**3,249**	**2,252**	**1,707**	**4,282**	**25,528**

Heat # 254855 **Grade** 409S1 Operator mhinz

Practice CR SS LCLN Slag ANY SS GRADE Heat Created 04/19/05 17:02

Lining ID Lining Minutes 1451 Heats 145 Min. Weight 220,000

AddsWiz Oxygen Estimate 72237 TapToCharge 2.2875

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.007				0.170	10.600			
Max	0.030	0.400		0.150	0.400	10.800			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.918	0.290	0.028	0.040	0.333	6.940	0.110	0.006	0.012
A1	0.013	0.170	0.024	0.039	0.010	9.370	0.130	0.005	0.002
A2	0.006	0.290	0.023	0.004	0.341	10.460	0.120	0.007	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.37	12.10	25.92	10.31	0.00	0.00	18,530.94

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
17:03	Chem T1					
17:07	Sample		0.9178			8061
17:08	Temp	2678				
17:08	AddsWiz					
17:09	Decarb					
17:39	Sample		0.0197	87393		83301
17:41	Temp	3035				
17:42	Decarb					
17:45	Chem A1					
17:50	AddsWiz					
17:54	Reduce					
18:02	Sample		0.0071	91004		158794
18:05	Temp	2990				
18:10	Reduce					
18:12	Sample		0.0071	91004		164053
18:12	Tap					
Tap Heat	04/19/05 18:12		**TOTALS**	**91004**	**0**	**164145**

Charge Heat Transfer Wt 0

Charge - Tap 1 **Tap Wt** 248,755

ADDITIONS	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al			862	517		**1,379**
Dolo		3,368			1,999	**5,367**
FeCrSi			1,000			**1,000**
FeSi			410	1,018		**1,428**
HCFeCr	13,422					**13,422**
LCCr			300			**300**
Lime					2,163	**2,163**
Total	**13,422**	**3,368**	**2,572**	**1,535**	**4,162**	**25,059**

Heat #	**254856**	**Grade**	**1005S1**	Operator	mhinz
Practice	Castrip	Slag	LCLNCarbon	Heat Created	04/19/05 18:40
Lining ID		Lining Minutes	1521	Heats 146	Min. Weight 220,000

AddsWiz Oxygen Estimate — TapToCharge 28.775

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.500			0.250				
Max	0.040	0.600			0.350				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.044	0.080	0.011	0.024	0.001	0.480	0.032	0.008	0.002
A1	0.006	0.560	0.012		0.389	0.519	0.033	0.005	0.005

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
58.40	8.94	15.22	16.95	0.00	0.00	5,868.98

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
18:41	Charge					
18:42	Chem F1					
18:42	Chem F1					
18:46	Sample		0.0440			9208
18:51	Decarb					
18:55	Reduce					
19:01	Sample		0.0344	7690		34687
19:04	Temp	2958				
19:12	Chem A1					
19:13	Fuel %Si					
19:16	Reduce					
19:18	Sample		0.0060	11290		49616
19:19	Tap					
Tap Heat	04/19/05 19:19		**TOTALS**	**11290**	**0**	**49723**
Charge Heat	04/19/05 18:41	Transfer Wt	244,000			
Charge - Tap	**38**	**Tap Wt**	**245,730**			

ADDITIONS	Castrip	Total
Al	1,200	**1,200**
Dolo	1,200	**1,200**
FeSi	575	**575**
LC SiMn	1,900	**1,900**
Lime	3,000	**3,000**
Total	**7,875**	**7,875**

CASTREP

Heat # 254857 **Grade** 1005P1 Operator mhinz

Practice LCLNCarbon Slag LCLNCarbon Heat Created 04/19/05 19:22

Lining ID Lining Minutes 1559 Heats 147 Min. Weight 220,000

AddsWiz Oxygen Estimate TapToCharge 3.721

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.005				0.200				
Max	0.030				0.250				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.060	0.080	0.008	0.022		0.193	0.025	0.006	0.002
A1	0.002	0.050	0.001	0.019		0.206	0.025	0.006	0.001

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
70.44	10.40	7.06	3.78	8.19	0.00	6,354.10

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
19:22	Charge					
19:27	Sample					8931
19:29	Chem F1					
19:33	Decarb					
19:37	Reduce					
19:40	Sample		0.0418	6179		29157
19:42	Temp	2913				
19:51	Reduce					
19:54	Sample		0.0417	6179		38200
19:54	Tap					
Tap Heat	04/19/05 19:54		**TOTALS**	**6179**	**0**	**38310**
Charge Heat	04/19/05 19:22	Transfer Wt	244,000			
Charge - Tap	**32**	**Tap Wt**	**243,814**			

ADDITIONS	Recipe1	Recipe2	Total
Al		200	**200**
Dolo	1,500		**1,500**
FeSi		200	**200**
Lime	4,000		**4,000**
Total	**5,500**	**400**	**5,900**

Nucor Steel - Crawfordsville AOD Log

Heat #	**254858**	**Grade**	**1005P1**	Operator	mhinz
Practice	LCLNCarbon	Slag	LCLNCarbon	Heat Created	04/19/05 19:59
Lining ID		Lining Minutes	1591	Heats 148	Min. Weight 220,000

AddsWiz Oxygen Estimate — TapToCharge 4.729

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.005				0.200				
Max	0.030				0.250				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.054	0.100	0.010	0.020		0.152	0.025	0.006	0.001
A1	0.011	0.090	0.010	0.017		0.175	0.026	0.006	0.001

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
83.00	11.55	2.17	3.19	0.00	0.00	4,648.45

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
19:59	Charge					
20:01	Chem F1					
20:03	Chem F1					
20:04	Sample		0.0540			8798
20:09	Decarb					
20:11	Reduce					
20:13	Sample		0.0534	842		23710
20:16	Temp	2936				
20:21	Reduce					
20:25	Sample		0.0534	842		34008
20:26	Tap					
Tap Heat	04/19/05 20:26		**TOTALS**	**842**	**0**	**34141**
Charge Heat	04/19/05 19:59	Transfer Wt	245,000			
Charge - Tap	**27**	**Tap Wt**	**245,755**			

ADDITIONS	Recipe1	Recipe2	Total
Al		300	**300**
Dolo	1,200		**1,200**
FeSi		250	**250**
Lime	3,500		**3,500**
Total	**4,700**	**550**	**5,250**

Heat #	**254859**	**Grade**	**1005S1**	Operator	mhinz
Practice	~~Castrip~~	Slag	LCLNCarbon	Heat Created	04/19/05 22:08
Lining ID		Lining Minutes	1618	Heats 150	Min. Weight 220,000

AddsWiz Oxygen Estimate — TapToCharge 101.9833

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.500			0.250				
Max	0.040	0.600			0.350				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.087	0.080	0.006	0.020	0.003	0.072	0.023	0.005	0.002
A1	0.002	0.060	0.005	0.018		0.084	0.023	0.006	0.001
A2	0.001	0.080	0.008		0.087	0.091	0.022	0.006	0.002

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
65.84	8.88	1.72	23.36	0.00	0.00	4,108.09

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
22:08	Charge					
22:09	Chem F1					
22:13	Decarb					
22:14	Sample		0.0870	514		12623
22:16	Decarb					
22:18	Reduce					
22:25	Sample		0.0890	5321		35894
22:28	Temp	2896				
22:37	Reduce					
22:40	Sample		0.0902	5321		47157
22:46	Temp	2869				
23:07	Tap					
Tap Heat	04/19/05 23:07		**TOTALS**	**5321**	**0**	**47252**
Charge Heat	04/19/05 22:08	Transfer Wt	246,000			
Charge - Tap	**59**	**Tap Wt**	**246,671**			

ADDITIONS	Castrip	Recipe1	**Total**
Al		200	**200**
Dolo	900		**900**
FeSi	200	200	**400**
LC SiMn			
Lime	1,500	900	**2,400**
Total	**2,600**	**1,300**	**3,900**

Heat # 254908 **Grade** 1001S5 Operator bfay

Practice New Motor Lam Slag LCLNCarbon Heat Created 04/22/05 07:43

Lining ID Lining Minutes 1686 Heats 154 Min. Weight 220,000

AddsWiz Oxygen Estimate TapToCharge 92.51266

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.030	0.060	0.010	0.033		0.038	0.028	0.009	0.002
A1	0.003	0.380	0.009	0.010	1.150	0.058	0.028	0.013	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.88	11.86	31.15	2.00	0.00	0.00	7,234.59

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
7:47	Chem F1					
8:16	Charge					
8:20	Sample		0.0300			7134
8:24	Temp	2850				
8:25	Decarb					
8:34	Reduce					
8:35	Reduce					
8:40	Sample		0.0050	15584		45096
8:43	Temp	2995				
8:46	AddsWiz					
8:51	Chem A1					
8:53	Reduce					
8:56	Sample		0.0031	15584		55481
8:57	Tap					
Tap Heat	04/22/05 8:57		**TOTALS**	**15584**	**0**	**55583**

Charge Heat 04/22/05 8:16 Transfer Wt 250,000

Charge - Tap 41 **Tap Wt 255,810**

ADDITIONS	Recipe1	Recipe3	Recipe4	Total	
Dolo 1200	800			**800**	2000
LC FeSi 5,000		500	100	**600**	5600
LC SiMn 1250		300		**300**	1550
Lime 2800	200			**200**	3000
Total	**1,000**	**800**	**100**	**1,900**	

Heat #	**254910**	**Grade**	**1001S5**	Operator	jday
Practice	New Motor Lam	Slag	LCLNCarbon	Heat Created	04/22/05 09:21
Lining ID		Lining Minutes	1727	Heats	155
				Min. Weight	220,000

AddsWiz Oxygen Estimate — TapToCharge 35.4335

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.027	0.060	0.008	0.026		0.039	0.029	0.009	0.002
A1	0.003	0.450	0.010	0.004	1.321	0.055	0.030	0.009	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.55	11.97	30.85	2.51	0.00	0.00	7,123.27

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
9:30	Chem F1					
9:33	Charge					
9:36	Sample		0.0270			6024
9:38	Temp	2922				
9:39	Decarb					
9:48	Reduce					
9:53	Sample		0.0048	15317		42041
9:59	Temp	3060				
10:00	AddsWiz					
10:05	Reduce					
10:06	Chem A1					
10:08	Sample		0.0030	15317		51252
10:09	Tap					
Tap Heat	04/22/05 10:09		**TOTALS**	**15317**	**0**	**51364**
Charge Heat	04/22/05 9:33	Transfer Wt	248,597			
Charge - Tap	**36**	**Tap Wt**	**254,186**			

ADDITIONS	Motor Lam	Recipe2	Total
Al	700		**700**
Dolo	2,000		**2,000**
FeSi	5,000	150	**5,150**
LC SiMn	1,450		**1,450**
Lime	3,000		**3,000**
Total	**12,150**	**150**	**12,300**

Heat # 254911 **Grade** 1001S5 Operator jday

Practice New Motor Lam Slag LCLNCarbon Heat Created 04/22/05 10:16

Lining ID Lining Minutes 1763 Heats 156 Min. Weight 220,000

AddsWiz Oxygen Estimate 12060 TapToCharge 18.179

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.023	0.050	0.007	0.023		0.035	0.036	0.008	0.003
A1	0.002	0.440	0.010	0.003	1.306	0.049	0.035	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
53.56	10.74	33.52	2.01	0.00	0.00	7,020.69

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
10:25	Chem F1					
10:27	Charge					
10:30	Sample		0.0230			5858
10:32	Temp	2880				
10:32	AddsWiz					
10:33	Decarb					
10:34	AddsWiz					
10:43	Reduce					
10:47	AddsWiz					
10:50	Sample		0.0039	16066		49279
10:56	Temp	3043				
10:59	Reduce					
11:01	Sample		0.0040	16066		55415
11:05	Tap					
Tap Heat	04/22/05 11:05		**TOTALS**	**16066**	**0**	**55521**
Charge Heat	04/22/05 10:27	Transfer Wt	249,999			
Charge - Tap	**38**	**Tap Wt**	**255,681**			

ADDITIONS	Motor Lam	Recipe1	Recipe2	Total
Al	700			**700**
Dolo		1,800		**1,800**
FeSi	5,000		150	**5,150**
LC SiMn	1,450			**1,450**
Lime		3,000		**3,000**
Total	**7,150**	**4,800**	**150**	**12,100**

Heat #	**254912**	**Grade**	**1001S5**	Operator	jnichols
Practice	New Motor Lam	Slag	LCLNCarbon	Heat Created	04/22/05 11:16
Lining ID		Lining Minutes	1801	Heats	157
				Min. Weight	220,000

AddsWiz Oxygen Estimate — TapToCharge 12.69167

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.033	0.040	0.006	0.025		0.024	0.029	0.007	0.002
T1	0.033	0.040	0.006	0.025		0.024	0.029	0.007	0.002
A1	0.001	0.420	0.008	0.005	1.272	0.036	0.030	0.007	0.003
A1	0.001	0.420	0.008	0.005	1.272	0.036	0.030	0.007	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
53.94	10.55	33.80	1.59	0.00	0.00	6,881.82

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
11:17	Charge					
11:18	Chem T1					
11:21	Sample		0.0330			6604
11:24	Temp	2849				
11:26	Decarb					
11:26	AddsWiz					
11:35	Reduce					
11:41	Sample		0.0048	16085		42832
11:54	Chem A1					
11:58	Reduce					
12:00	Sample		0.0010	16085		49496
12:02	Tap					
12:07	Temp	2967				
Tap Heat	04/22/05 12:02		**TOTALS**	**16085**	**0**	**50171**
Charge Heat	04/22/05 11:17	Transfer Wt	252,000			
Charge - Tap	**45**	**Tap Wt**	**257,592**			

ADDITIONS	Recipe1	Recipe2	Recipe4	Total
Dolo	1,800			**1,800**
Empty		700		**700**
FeSi		5,000		**5,000**
LC FeSi			250	**250**
LC SiMn		1,450		**1,450**
Lime	3,000			**3,000**
Total	**4,800**	**7,150**	**250**	**12,200**

Heat #	**254913**	**Grade**	**1001S5**	Operator	jnichols
Practice	New Motor Lam	Slag	LCLNCarbon	Heat Created	04/22/05 12:09
Lining ID		Lining Minutes	1846	Heats 158	Min. Weight 220,000

AddsWiz Oxygen Estimate 14309 TapToCharge 11.60833

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.052	0.040	0.017	0.033		0.027	0.024	0.007	0.002
A1	0.001	0.420	0.018	0.002	1.360	0.035	0.025	0.007	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.32	10.65	33.37	1.54	0.00	0.00	6,857.51

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:14	Charge					
12:15	Chem T1					
12:20	Sample		0.0520			11600
12:24	Temp	2780				
12:25	Decarb					
12:26	AddsWiz					
12:27	AddsWiz					
12:34	Reduce					
12:39	Sample		0.0064	16520		46250
12:50	Tap					
12:54	Temp	2945				
Tap Heat	04/22/05 12:50		**TOTALS**	**16520**	**0**	**47123**
Charge Heat	04/22/05 12:14	Transfer Wt	252,000			
Charge - Tap	**35**	**Tap Wt**	**257,385**			

ADDITIONS	Recipe1	Recipe2	Total
Al		700	**700**
Dolo	1,800		**1,800**
FeSi	~~3,000~~	5,000	**8,000**
LC SiMn		1,450	**1,450**
Total	**4,800**	**7,150**	**11,950**

5,000
~~5,350~~

Lime 3000
Dolo 1800
FeSi 5000
LCSiMn 1450
AL 700

254910 →

Heat #	**254914**	**Grade**	**1001S5**	Operator	jnichols
Practice	New Motor Lam	Slag	LCLNCarbon	Heat Created	04/22/05 12:57
Lining ID		Lining Minutes	1846	Heats	159
				Min. Weight	220,000

AddsWiz Oxygen Estimate 7867 TapToCharge 18.3

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.037	0.040	0.014	0.033		0.025	0.027	0.007	0.002
A1	0.002	0.420	0.016	0.005	1.224	0.048	0.028	0.007	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
52.96	10.68	21.72	14.52	0.00	0.00	7,094.95

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:58	Chem T1					
13:08	Charge					
13:12	Sample		0.0370			7189
13:16	Temp	2848				
13:16	Decarb					
13:17	AddsWiz					
13:27	Reduce					
13:34	Sample		0.0051	16380		52201
13:41	Chem A1					
13:44	Reduce					
13:46	Sample		0.0021	16380		59202
13:49	Tap					
13:51	Temp	2976				
Tap Heat	04/22/05 13:49		**TOTALS**	**16380**	**0**	**59382**

Charge Heat 04/22/05 13:08 Transfer Wt 254,000

Charge - Tap 41 **Tap Wt 259,748**

ADDITIONS	Recipe1	Recipe2	Recipe3	Total
Al		700		**700**
Dolo	1,800			**1,800**
FeSi		5,000	450	**5,450**
LC SiMn		1,450		**1,450**
Lime	3,000			**3,000**
Total	**4,800**	**7,150**	**450**	**12,400**

Heat # 254915 **Grade** 1001S5 Operator jnichols

Practice New Motor Lam Slag LCLNCarbon Heat Created 04/22/05 13:53

Lining ID Lining Minutes 1887 Heats 160 Min. Weight 220,000

AddsWiz Oxygen Estimate TapToCharge 4.741667

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.003				0.650				
Max	0.005			0.006	0.700				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.030	0.040	0.017	0.028		0.029	0.036	0.007	0.002
T1	0.030	0.050	0.016	0.028	0.007	0.029	0.036	0.007	0.004
A1	0.002	0.430	0.019	0.005	1.233	0.043	0.036	0.008	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.10	9.75	33.83	2.08	0.00	0.00	7,061.65

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
13:53	Chem T1					
13:54	Charge					
13:57	Sample		0.0300			5737
14:00	Temp	2882				
14:04	Decarb					
14:14	Reduce					
14:19	Sample		0.0046	16647		43048
14:30	Chem A1					
14:34	Reduce					
14:39	Sample		0.0021	16647		57292
14:44	Tap					
14:48	Temp	3005				
Tap Heat	04/22/05 14:44		**TOTALS**	**16647**	**0**	**57391**
Charge Heat	04/22/05 13:54	Transfer Wt	254,000			
Charge - Tap	**50**	**Tap Wt**	**259,855**			

ADDITIONS	Motor Lam	Recipe1	Total
Al	700		**700**
Dolo	1,600		**1,600**
FeSi	5,000	450	**5,450**
LC SiMn	1,450		**1,450**
Lime	3,200		**3,200**
Total	**11,950**	**450**	**12,400**

4/22
15.2

ATP – Air Test Professionals, Inc.

1201 North Graham Avenue, Indianapolis, Indiana 46219

(317) 345-1720 FAX (317) 351-0411

REPORT on PARTICULATE AND METALS TESTING

Performed for:
Nucor Steel
Crawfordsville, Indiana
PPFF Baghouse
on May 19, 21, 2004

To the best of our knowledge, the data presented in this report is accurate and complete.

Respectfully Submitted by:

Carlos Brown, Project Manager

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1-1 PROJECT OVERVIEW

Air Test Professionals, Inc. was contracted by Nucor Steel to perform air emissions sampling of their Positive Pressure Fabric Filter (PPFF) Baghouse and Melt Shop, located in Crawfordsville, Indiana on May 19, 21, 2004. The objective of the testing was to determine compliance with 40CFR60, Subpart AAa for particulate matter emissions and to determine Metals emissions. Testing was also performed in accordance with paragraph 48 of the Consent Decree to establish operating baselines as required by NSPS at the Electric Arc Furnace. The following personnel were involved with the testing program:

ATP	Carlos Brown
ATP	Andrew Young
ATP	Terry Kauffman
Nucor	Mark Washer
Nucor	Rex Kelsey
IDEM	Jarrod Fisher

The testing program included flow and gas analysis (US EPA Methods 1-4), particulate (US EPA Method 5D), condensible particulate matter (US EPA Method 202), metals emissions (US EPA Method 29), and visible emissions (US EPA Method 9). Listed below is a summary of the results.

Test Summary
Table 1-1

Pollutant	**Location**	**Emissions Rate** (Avgs.) (lbs/hr)	**Permitted Limits** (lbs/hr)
Lead Mercury	PPFF Baghouse	0.0126 (Pb) 0.0198 (Hg)	0.134 (Pb) 0.023 (Hg)

Pollutant	**Location**	**PM** (TSP) Filterable	**PM/PM10** Filterable & Condensible
Particulate Matter	PPFF Baghouse	0.0010 (gr/dscf)	0.0032 (gr/dscf)
Permitted PM Limits		0.0018 (gr/dscf)	0.0052 (gr/dscf)

1-2 PROJECT OVERVIEW

Test Program
Table 1-2

Parameter	Methods	Location	Unit
Gas Velocity / Vol. Flow Rate	EPA RM 1-3	Inlet	EAF Baghouse
Particulate	EPA RM 4-5D	Compartment	EAF Baghouse
PM10	EPA RM 202	Compartment	EAF Baghouse
Metals	EPA RM 29	Compartment	EAF Baghouse
Opacity	EPA RM 9	Roof Monitors	EAF Baghouse / Melt Shop
Opacity	EPA RM 9	Silo Exhausts	Old & New Bin Vents

The schedule of activities is summarized below:

Schedule of Activities

Date	Run No.	Time
PM & Metals Tests		
05/19/2004	1	15:57-21:29
05/21/2004	2	07:17-12:14
05/21/2004	3	13:07-12:14

1-2 PROJECT OVERVIEW

EAF (PPFF) Baghouse Diagram

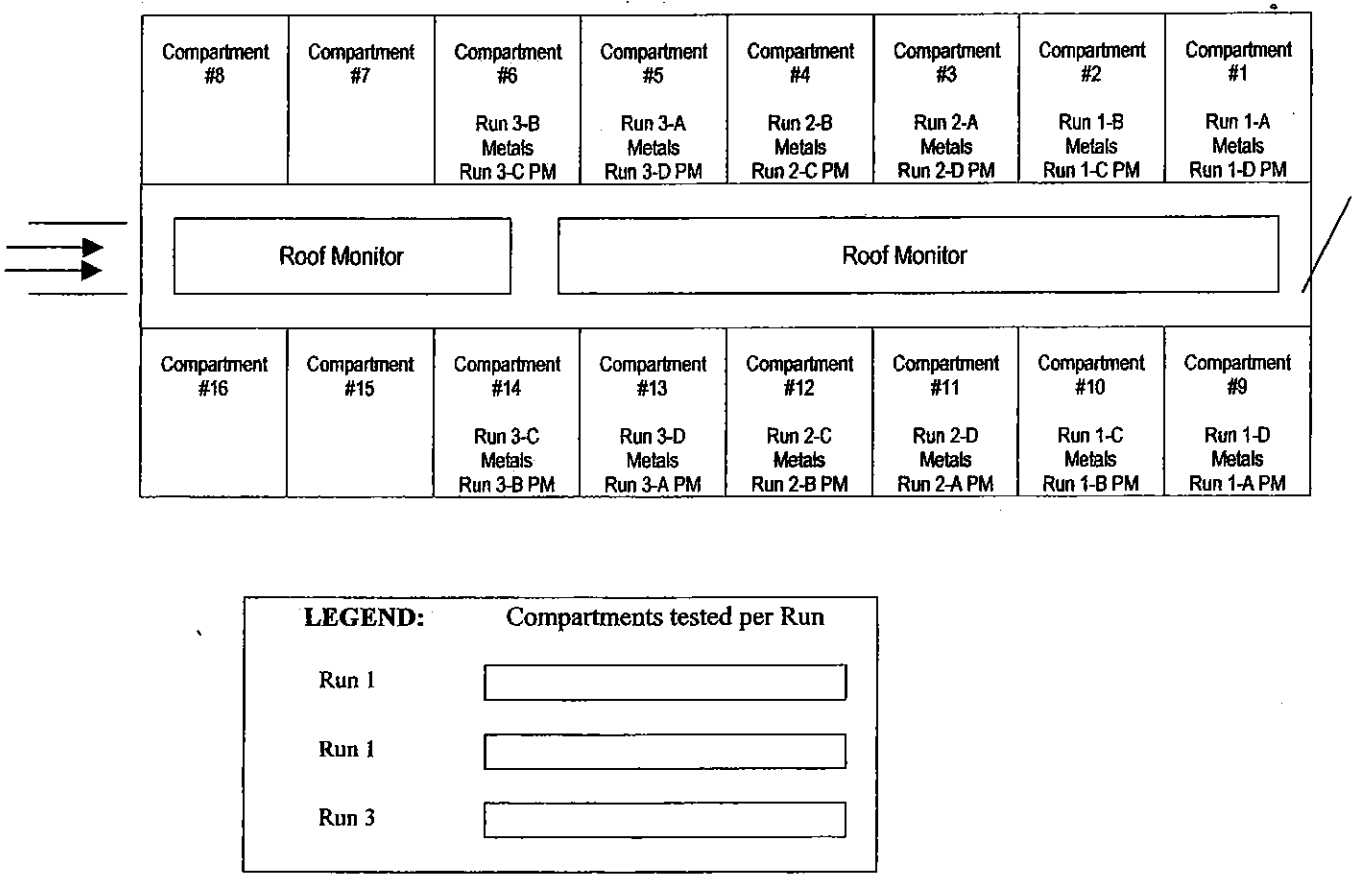
1.) Nucor Steel PPFF baghouse consists of 16 compartment housings with an area of 366"d x 260"w per compartment.

2.) Testing was conducted at 12 of the 16 compartment housings (see Table: 1-3).

3.) Three (3) sample runs were conducted at four compartments (per sample run) resulting in a test area of 366"d x 1040"w.

4.) The four (4) compartment-per run volumetric flow rates reflect approximately 25% of the total measured inlet flow rate (see 2-1 / 2-2 RESULTS for compartment and Inlet flow rates).

Table: 1-3



2-1 RESULTS

FILTERABLE AND CONDENSIBLE PM
PPFF Baghouse

Table 2-1

Gas Conditions		1	2	3	Averages
Ts	Stack Temperature	208.0	209.75	204.5	207.4
Bwo	Moisture (volume %)	2.01	2.08	2.04	2.04
O2	Oxygen (dry volume %)	19.0	19.0	19.0	19.0
CO2	Carbon Dioxide (dry volume %)	0.0	0.0	0.0	0.0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	340,672	341,167	339,799	340,546
Qstd	Standard Conditions (dscfm)	265,284	264,771	265,912	265,322
Emissions Results					
C_{TSP}	Concentration, filterable (gr/dscf)	0.0012	0.0010	0.0009	**0.0010**
E_{TSP}	Emission Rate, filterable (lbs/hr)	2.6305	2.3339	2.1419	2.3687
C	Filterable & Condensible (gr/dscf)	0.0033	0.0033	0.0031	0.0032
E	Emission Rate, condensible (lbs/hr)	7.6065	7.3942	7.0158	7.3388
Fan Amps / Damper Positions					
	Average Fan Amps	133.9	125.6	122.9	**127.5**
	Average Damper Position	100%	100%	100%	**100%**

NOTE: Velocity head settings for Method 5D compartment test runs were derived from Inlet volumetric flow rates. Flow rate calculations were corrected for compartment conditions; temperature, moisture and gas analysis. A minimum of 160 dscf was sampled during each test period.

2-2 RESULTS

METALS EMISSIONS
EAF (PPFF) Baghouse

Table 2-2

Gas Conditions		1	2	3	Averages
Ts	Stack Temperature	208.0	206.75	207.75	207.50
Bwo	Moisture (volume %)	3.89	3.51	3.83	3.74
O2	Oxygen (dry volume %)	19.0	19.0	19.0	19.0
CO2	Carbon Dioxide (dry volume %)	0.0	0.0	0.0	0.0
Volumetric Flow Rate					
Qa	Actual Conditions (acfm)	1,367,551	1,365,281	1,367,145	1,366,659
Qstd	Standard Conditions (dscfm)	1,044,463	1,048,837	1,045,172	1,046,157
METALS EMISSIONS					
E_r	Lead (lbs/hr)	0.0170	0.0081	0.0071	0.0126
E_r	Mercury (lbs/hr)	0.0145	0.0169	0.0279	0.0198

NOTE: Metals emissions are based on total baghouse (16 compartment) volumetric flow rates for the calculation of mass emissions (lb/hr).

334.9 332.5 318.2 328.5

2-3 RESULTS

VISIBLE EMISSIONS - OPACITY

Melt Shop
Table 2-3

Run No.	1	2	3	Average
Date	May 19, 2004	May 19, 2004	May 19, 2004	
Start Time (approx)	16:11	17:41	18:41	
Stop Time (approx)	17:11	18:41	19:41	
Visible Emissions				
Opacity (EPA RM 9)	0.0	0.0	0.0	**0.0 %**

East Baghouse - Roof Monitors

Run No.	1A	1B	1C	1D	Average
Date	May 19, 2004	May 19, 2004	May 19, 2004	May 19, 2004	
Start Time (approx)	16:11	17:41	18:41	19:41	
Stop Time (approx)	17:11	18:41	19:41	20:27	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

West Baghouse - Roof Monitors

Run No.	1A	1B	1C	1D	Average
Date	May 19, 2004	May 19, 2004	May 19, 2004	May 19, 2004	
Start Time (approx)	16:11	17:41	18:41	19:41	
Stop Time (approx)	17:11	18:41	19:41	20:27	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

2-3 RESULTS, cont.

VISIBLE EMISSIONS - OPACITY

East Baghouse - Roof Monitors

Run No.	2A	2B	2C	2D	Average
Date	May 21, 2004	May 21, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	07:16	08:16	09:16	10:30	
Stop Time (approx)	08:16	09:16	10:21	11:30	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

West Baghouse - Roof Monitors

Run No.	2A	2B	2C	2D	Average
Date	May 21, 2004	May 21, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	07:16	08:16	09:16	10:30	
Stop Time (approx)	08:16	09:16	10:21	11:30	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

East Baghouse - Roof Monitors

Run No.	3A	3B	3C	3D	Average
Date	May 21, 2004	May 21, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	13:20	14:22	15:24	16:25	
Stop Time (approx)	14:20	15:22	16:24	17:25	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

2-3 RESULTS, cont.

VISIBLE EMISSIONS - OPACITY

West Baghouse - Roof Monitors

Run No.	3A	3B	3C	3D	Average
Date	May 21, 2004	May 21, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	13:20	14:22	15:24	16:25	
Stop Time (approx)	14:20	15:22	16:24	17:25	
Visible Emissions					
Opacity (EPA RM 9)	0.0	0.0	0.0	0.0	**0.0 %**

Bin Vent – Old Silo

Run No.	1	2	3	Average
Date	May 19, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	15:59	07:22	13:10	
Stop Time (approx)	16:59	08:22	14:10	
Visible Emissions				
Opacity (EPA RM 9)	0.0	0.0	0.0	**0.0 %**

Bin Vent – New Silo

Run No.	1	2	3	Average
Date	May 19, 2004	May 21, 2004	May 21, 2004	
Start Time (approx)	15:59	07:22	13:10	
Stop Time (approx)	16:59	08:22	14:10	
Visible Emissions				
Opacity (EPA RM 9)	0.0	0.0	0.0	**0.0 %**

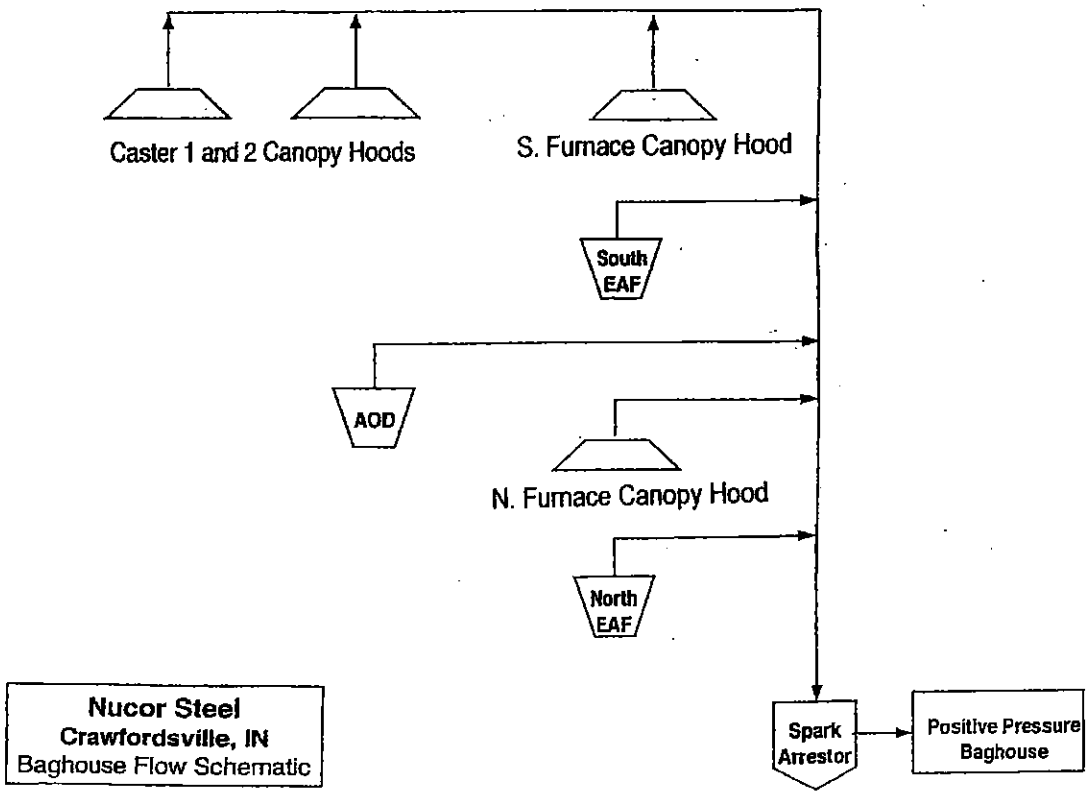
3-1 PROCESS DESCRIPTION

Nucor steel operates a meltshop, which is comprised of the following process units: Two (2) EAF units, one (1) ladle metallurgy station, one (1) AOD with two (2) continuous casters. Of these, the two EAF units, the AOD, and the two caster units, each is evacuated through the meltshop baghouse.

The EAF units melt various grades of scrap metal, scrap substitute, pebbled lime, and coke into molten steel. The molten steel is refined into various grades of carbon steel at the ladle metallurgy station or refined into stainless steel at the AOD. The molten steel from the ladle metallurgy station or AOD is cast into continuous strips at the two continuous casters.

The emissions from the EAF units, AOD, and casters are generated from melting, refining, charging, tapping, and casting operations and are captured in a direct shell evacuation (DEC) system and overhead canopy hoods. All captured emissions are evacuated through the positive pressure fabric filter (PPFF) baghouse for collection.

The testing reported in this document was performed at 12 of the 16 EAF (PPFF) baghouse compartments.



4-1 METHODOLOGY

The sampling procedures utilized by Air Test Professionals, Inc. were as follows:

Title 40 CFR Part 60 Appendix A

Method 1	"Sampling of Velocity Traverses for Stationary Sources"
Method 2	"Determining of Stack Gas Velocity and Volumetric Flow Rate"
Method 3	"Gas Analysis for the Determination of Molecular Weight"
Method 4	"Determination of Moisture Content in Stack Gas"
Method 5D	"Determination of Particulate Emissions from PPFF Sources"
Method 29	"Determination of Metals Emissions from Stationary Sources"
Method 9	"Determination of Visible Emissions from Stationary Sources"

Title 40 CFR Part 51 Appendix M

Method 202	"Determination of Condensible Particulate Emissions from Stationary Sources"

SAMPLE POINT DETERMINATION

Sampling point locations were determined according to EPA Reference Method 1.

Sampling Points
Table 4-1

Location	Dimensions	Points / Port	Total Points
Inlet	14.67' x 23.13' ID	4	32
Compartment (ea)	21.67' x 30.50' ID	6	12

** Exact traverse point measurements are listed in Appendix C - Field Data.

4-2 METHODOLOGY

VELOCITY AND VOLUMETRIC FLOW RATE – EPA METHOD 2
EPA Method 2 was used to determine the gas velocity and flow rate at the Inlet duct. Figure 4-2 includes the components of the EPA Method 2 sampling apparatus. Each set of velocity determinations included the measurement of gas velocity pressure and gas temperature at each of the Method 1 determined traverse points. The velocity pressures were measures with a Type S pitot tube. Gas temperature measurements made with a Type K thermocouple and digital pyrometer.

GAS COMPOSITION AND MOLECULAR WEIGHT – EPA METHOD 3
In order to determine the oxygen and carbon dioxide concentrations, a sample of gas was obtained and analyzed in accordance with EPA Method 3. The gas sample was collected using a Fyrite analyzer. The results were used to determine gas molecular weight.

MOISTURE CONTENT – EPA METHOD 4
The flue gas moisture content at the testing locations was determined in accordance with EPA Method 4. The gas moisture was determined by quantitatively condensing moisture in the chilled impingers and silica absorption. The amount of moisture condensed was determined gravimetrically. A dry gas meter was used to measure the volume of gas sampled. Moisture content is used to determine stack gas velocity.

PARTICULATE/CONDENSIBLE DETERMINATION – EPA METHOD 5D/202
Stack gas is withdrawn isokinetically and particulate matter is collected on the nozzle and filter. Condensible particulate is captured in the first three impingers; each impinger contains 100 mls of deionized water. A fourth and final impinger contains an amount of approximately 200 grams of silica gel. The impinger temperature exit gas is maintained at or below 68 degrees Fahrenheit.

The nozzle and glass filter holder are rinsed with acetone and captured in a sealed glass container. The impingers and connecting glassware are rinsed twice with deionized water and captured in a sealed container. Two rinses of methylene chloride were captured and stored in a sealed container

DETERMINATION OF METALS EMISSIONS – EPA METHOD 29
Stack gas is withdrawn isokinetically and particulate matter is collected on the nozzle and filter. Gaseous emissions are collected in an absorbing solution of HNO3/H2O2 (*0.1 N Nitric Acid & Hydrogen Peroxide*) in the 2nd and 3rd impingers and then in an aqueous acidic solution of KmnO4 (*Potassium Permanganate*) in the 5th and 6th impingers (*analyzed for Hg*). The 1st and 4th impingers are empty and the 7th impinger contains approximately 200 grams of silica gel. Impinger exit gas temperature is maintained at or below 68 degrees F.

The nozzle and filter holder are rinsed with 100 ml of 0.1 N HNO3 and cleaned with a Teflon brush and collected in a jar. Impingers 1, 2 and 3 are measured for moisture pick-up and then collected in a jar before rinsing the impingers with 100 ml 0.1 N HNO3, along with the back-half of the glass filter holder. Absorbing solutions are combined along with the rinse solution. Impinger 4 is measured for moisture pick-up (individually), collected and then rinsed with 100 ml 0.1 N HNO3 which is combined with the moisture pick-up. Impingers 5 and 6 are measured for moisture pick-up, collected in an amber jar with teflon lid liner and rinsed with 100 ml of KMnO4 and followed by a 100 ml rinse of HPLC water which is combined with the absorbing solution. Impingers 5 and 6 are then rinsed with 25 ml of 8 N HCl and collected in ajar. Silica gel is also weighed for moisture pick-up.

4-2 METHODOLOGY, cont.

VISIBLE EMISSIONS – EPA METHOD 9

Stack opacity readings were taken for 60-minutes at 15-second intervals by a certified visible emissions reader. The visible emissions readings were conducted during each of the particulate test runs. The results are reported as an average emissions percentage for each hour period. A copy of the visible emissions certification card is included in Appendix G.

SAMPLE CALCULATIONS

1. Volume of water collected (wstd)

$$V_{wstd} = (0.04707)(V_{lc})$$

V_{wstd}	volume of water collected at standard conditions (ft^3)
V_{lc}	total volume of liquid collected in impingers and silica (ml)
0.04707	conversion factor (ft^3/ml)

2. Volume of gas metered at standard conditions (dscf)

$$V_{mstd} = \frac{(17.64)(V_m)\left(P_{baro} + \frac{\Delta H}{13.6}\right)(\Gamma_d)}{(460 + T_m)}$$

V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
V_m	volume of sample gas through dry gas meter at meter conditions (ft^3)
P_{baro}	barometric pressure (in Hg)
ΔH	average pressure drop across meter box orifice (in H_2O)
Γ_d	gas meter correction factor (dimensionless)
T_m	average dry gas meter temperature (°F)
17.64	conversion factor (°R/in Hg)
13.6	conversion factor (in H_2O/in Hg)
460	conversion constant, °F to °R

3. Sample gas pressure (in Hg)

$$P_s = P_{baro} + \left(\frac{P_g}{13.6}\right)$$

P_s	absolute sample gas pressure (in Hg)
P_{baro}	barometric pressure (in Hg)
P_g	sample gas static pressure (in H_2O)
13.6	conversion factor (in H_2O/in Hg)

4. Actual vapor pressure (in Hg)

$$P_v = P_s$$

P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

5. Moisture content (%)

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

B_{wo}	portion of water vapor in the gas stream by volume (%)
V_{wstd}	volume of water collected at standard conditions (ft^3)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)

6. Saturated moisture content (%)

$$B_{ws} = \frac{P_v}{P_s}$$

B_{ws}	portion of water vapor in gas stream by volume at saturated conditions (%)
P_v	vapor pressure, actual (in Hg)
P_s	absolute sample gas pressure (in Hg)

7. Molecular weight of dry gas stream (lb/lb-mole)

$$M_d = M_{CO_2}\left(\frac{CO_2}{100}\right) + M_{O_2}\left(\frac{O_2}{100}\right) + M_{CO+N_2}\left(\frac{CO+N_2}{100}\right)$$

M_d	dry molecular weight of sample gas (lb/lb-mole)
M_{CO2}	molecular weight of carbon dioxide (lb/lb-mole)
M_{O2}	molecular weight of oxygen (lb/lb-mole)
M_{CO+N2}	molecular weight of carbon monoxide and nitrogen (lb/lb-mole)
CO_2	portion of carbon dioxide in the gas stream by volume (%)
O_2	portion of oxygen in the gas stream by volume (%)
$CO+N_2$	portion of carbon monoxide and nitrogen in gas stream by volume (%)
100	conversion factor (%)

8. Molecular weight of sample gas (lb/lb-mole)

$$M_s = (M_d)(1 - B_{ws}) + (M_{H_2O})(B_{wo})$$

M_d	dry molecular weight of sample gas (lb/lb-mole)
B_{wo}	portion of water vapor in the gas stream by volume (%)
M_{H2O}	molecular weight of water (lb/lb-mole)
M_s	molecular weight of sample gas, wet basis (lb/lb-mole)

9. Velocity of sample gas (ft/sec)

$$V_s = (K_p)(C_p)(\sqrt{\Delta P})\left(\sqrt{\frac{(t_s + 460)}{(M_s)(P_s)}}\right)$$

V_s	average sample gas velocity (ft/sec)
K_p	velocity pressure coefficient (dimensionless)
C_p	pitot tube constant
ΔP	average differential pressure in the gas stream (in H_2O)
t_s	average sample gas temperature (°F)
M_s	molecular weight of sample gas, wet basis (lb/lb-mole)
P_s	absolute sample gas pressure (in Hg)
460	conversion constant, °F to °R

10. Total flow of sample gas (acfm)

$$Q_a = (60)(A_s)(V_s)$$

Q_a	volumetric flow rate at actual conditions (acfm)
A_s	cross-sectional area of sampling location (ft^2)
V_s	average sample gas velocity (ft/sec)
60	conversion factor (seconds/minute)

11. Total flow of sample gas (dscfm)

$$Q_{std} = \frac{(Q_a)(P_s)(17.64)(1 - B_{wo})}{(t_s + 460)}$$

Q_{std}	volumetric flow rate at standard conditions (dscfm)
Q_a	volumetric flow rate at actual conditions (acfm)
P_s	absolute sample gas pressure (in Hg)
B_{wo}	portion of water vapor in the gas stream by volume (%)
t_s	average sample gas temperature (°F)
17.64	conversion factor (°R/in Hg)
460	conversion constant, °F to °R

12. Percent isokinetic (%)

$$I = \frac{(0.09450)(T_s)(V_{mstd})}{(P_s)(V_s)\left(\frac{(D_n)^2(\pi)}{(144)(4)}\right)(\theta)(1-B_{wo})}$$

I	percent relative to isokinetic sampling (%)
T_s	absolute sample gas temperature (°R)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
P_s	absolute sample gas pressure (in Hg)
V_s	average sample gas velocity (ft/sec)
D_n	diameter of nozzle (inches)
B_{wo}	portion of water vapor in the gas stream by volume (%)
θ	total sample time (minutes)
0.09450	conversion constant

13. Particulate concentration (gr/dscf)

$$C_{gr/dscf} = \frac{(15.43)(M_n)}{V_{mstd}}$$

$C_{gr/dscf}$	measured concentration in gas stream (gr/dscf)
M_n	particulate collected, corrected for reagent blank (grams)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
15.43	conversion factor (grains/gram)

14. Particulate emissions, mass emission rate (lbs/hr)

$$E_{lb/hr} = \frac{(M_n)(Q_{std})}{(7.567)(V_{mstd})}$$

$E_{lbs/hr}$	mass emission rate (lbs/hr)
M_n	particulate collected, corrected for reagent blank (grams)
Q_{std}	volumetric flow rate at standard conditions (dscfm)
V_{mstd}	volume of sample gas through dry gas meter at standard conditions (ft^3)
7.567	conversion factor (grams/pound)

STACK EMISSION SUMMARY

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	5/19/04

	Run 1	Run 2	Run 3	Average
Particulate Concentration				
PM - Filterable (gr/dscf)	0.0012	0.0010	0.0009	**0.0010**
PM/PM10 - Filterable & Condensible (gr/dscf)	0.0033	0.0033	0.0031	**0.0032**
Filterable (lbs/hr)	2.6305	2.3339	2.1419	2.3687
Filterable + Condensible (lbs/hr)	7.6065	7.3942	7.0158	7.3388
Avg. Stack Vol. Flow Rate				
ACFM	340,672	341,167	339,799	340,546
DSCFM	265,284	264,771	265,912	265,322
Avg. Stack Temp	208.00	209.75	204.50	207.42
Stack Gas Velocity	2.148	2.151	2.142	2.147
Avg. Velocity Head	0.00115	0.00115	0.00115	0.00115
Avg. Sq. Rt of Delta P	0.034	0.034	0.034	0.034
ISOKINETIC TESTING SUMMARY				
Allowable isokinetic 80-120%	101.54	102.05	101.84	101.81
% Moisture of Stack Gas	2.01%	2.08%	2.04%	2.04%
Sample Volume	160.080	160.568	160.933	160.527

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	5/19/04
Run Number:	1 - Particulate

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 19
Md (g/gmol) = 28.76

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 69.6
Vw (scf) = 3.27607

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 87.823
Vm (ft^3) = 164.488
Pb (in Hg) = 30.08
delta H (in H2O) = 0.966
gamma = 1.002
Vm (dscf) = 160.08

Moisture Content of Stack Gas, Bwo
Bwo = 2.01%
1-Bwo = 97.99%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.54

Area of Stack (enter diameter in inches), As
Depth = 366
Width = 1040
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 2643.333
As(dia.) (ft^2) = 2643.3

Absolute Pressure, Ps
Static (in H2O) = 0
Ps (in Hg) = 30.08

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.034
Ts (F) = 208.0
Vs (fps) = 2.15

Stack Gas Flowrate, Qs
As (ft^2) = 2643.33
Qs (acfm) = 340,672

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 265,284
Qstd (dscf/hr) = 15,917,040

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 1.0
Time of Run (min) = 288.00
Vn (fps) = 2.18

Area of Nozzle, An
An (ft^2) = 0.0054541

% Isokinetic, %I
%I = 101.54
% Isokinetic measured from intermediate values
%I = 101.54

Pollutant Mass Emission Rate, PMR

	Filterable	Condensible	Total
Mn (g) =	0.0120	0.0227	
PMR (lb/hr) =	2.6305	4.9760	7.6065

Grains per acf

	Filterable	Condensible	Total
gr/acf =	0.0009		0.0009

Grains per dscf

	Filterable	Condensible	Total
gr/dscf =	**0.0012**	0.0022	**0.0033**

FIELD DATA

K' Factor	840

Start Time	15:57
Stop Time	21:29

Run 1	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.97	208	92	92
2	0.00115	0.034		0.97	208	93	92
3	0.00115	0.034		0.97	208	94	92
4	0.00115	0.034		0.97	208	94	92
5	0.00115	0.034		0.97	208	95	92
6	0.00115	0.034		0.97	208	94	93
7	0.00115	0.034		0.97	208	95	93
8	0.00115	0.034		0.97	208	91	91
9	0.00115	0.034		0.97	208	86	88
10	0.00115	0.034		0.97	208	85	86
11	0.00115	0.034		0.97	208	86	85
12	0.00115	0.034		0.97	208	86	85
13	0.00115	0.034		0.97	208	85	85
14	0.00115	0.034		0.97	208	86	85
15	0.00115	0.034		0.97	208	87	85
16	0.00115	0.034		0.97	208	87	85
17	0.00115	0.034		0.97	208	87	85
18	0.00115	0.034		0.97	208	87	84
19	0.00115	0.034		0.97	208	86	84
20	0.00115	0.034		0.97	208	86	84
21	0.00115	0.034		0.97	208	86	84
22	0.00115	0.034		0.97	208	86	84
23	0.00115	0.034		0.97	208	86	84
24	0.00115	0.034		0.97	208	86	84
25	0.00115	0.034		0.97	208	85	84
26	0.00115	0.034		0.97	208	86	84
27	0.00115	0.034		0.97	208	86	84
28	0.00115	0.034		0.97	208	86	84
29	0.00115	0.034		0.97	208	86	84
30	0.00115	0.034		0.97	208	86	84
31	0.00115	0.034		0.97	208	85	84
32	0.00115	0.034		0.97	208	86	84
33	0.00115	0.034		0.97	208	87	84
34	0.00115	0.034		0.97	208	88	84
35	0.00115	0.034		0.97	208	88	85
36	0.00115	0.034		0.97	208	89	85
37	0.00115	0.034		0.97	208	88	85
38	0.00115	0.034		0.97	208	89	86
39	0.00115	0.034		0.97	208	89	86
40	0.00115	0.034		0.97	208	89	86
41	0.00115	0.034		0.97	208	89	86
42	0.00115	0.034		0.97	208	92	87
43	0.00115	0.034		0.97	208	94	89
44	0.00115	0.034		0.97	208	95	91
45	0.00115	0.034		0.97	208	95	91
46	0.00115	0.034	557.558	0.97	208	95	91
47	0.00115	0.034	393.07	0.97	208	94	91
48	0.00115	0.034		0.97	208	94	91

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	164.488	0.966	208.00	87.82

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	05/21/04
Run Number:	2 - Particulate

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 19
Md (g/gmol) = 28.76

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 72.5
Vw (scf) = 3.41258

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 95.063
Vm (ft^3) = 167.17
Pb (in Hg) = 30.08
delta H (in H2O) = 0.966
gamma = 1.002
Vm (dscf) = 160.57

Moisture Content of Stack Gas, Bwo
Bwo = 2.08%
1-Bwo = 97.92%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.54

Area of Stack (enter diameter in inches), As
L = 366
W = 1040
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 2643.333
As(dia.) (ft^2) = 2643.3

Absolute Pressure, Ps
Static (in H2O) = 0
Ps (in Hg) = 30.08

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.034
Ts (F) = 209.8
Vs (fps) = 2.15

Stack Gas Flowrate, Qs
As (ft^2) = 2643.33
Qs (acfm) = 341,167

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 264,771
Qstd (dscf/hr) = 15,886,231

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 1.0
Time of Run (min) = 288
Vn (fps) = 2.20

Area of Nozzle, An
An (ft^2) = 0.0054541

% Isokinetic, %I
%I = 102.05
% Isokinetic measured from intermediate values
%I = 102.05

Pollutant Mass Emission Rate, PMR

	Filterable	Condensible	Total
Mn (g) =	0.0107	0.0232	
PMR (lbs/hr) =	2.3339	5.0603	7.3941918

Grains per acf
gr/acf = 0.0008

Grains per dscf

	Filterable	Condensible	Total
gr/dscf =	**0.0010**	0.0022	**0.0033**

FIELD DATA

K' Factor	840

Start Time	7:17
Stop Time	12:14

Run 2	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.97	208	82	81
2	0.00115	0.034		0.97	208	83	81
3	0.00115	0.034		0.97	208	84	82
4	0.00115	0.034		0.97	208	85	83
5	0.00115	0.034		0.97	208	85	83
6	0.00115	0.034		0.97	208	85	83
7	0.00115	0.034		0.97	208	89	85
8	0.00115	0.034		0.97	208	90	86
9	0.00115	0.034		0.97	208	90	86
10	0.00115	0.034		0.97	208	90	88
11	0.00115	0.034		0.97	208	90	88
12	0.00115	0.034		0.97	208	90	89
13	0.00115	0.034		0.97	215	91	89
14	0.00115	0.034		0.97	215	93	91
15	0.00115	0.034		0.97	215	95	91
16	0.00115	0.034		0.97	215	96	92
17	0.00115	0.034		0.97	215	96	92
18	0.00115	0.034		0.97	215	96	92
19	0.00115	0.034		0.97	215	96	92
20	0.00115	0.034		0.97	215	96	93
21	0.00115	0.034		0.97	215	97	93
22	0.00115	0.034		0.97	215	97	94
23	0.00115	0.034		0.97	215	97	94
24	0.00115	0.034		0.97	215	97	94
25	0.00115	0.034		0.97	195	98	94
26	0.00115	0.034		0.97	195	98	94
27	0.00115	0.034		0.97	195	98	95
28	0.00115	0.034		0.97	195	99	95
29	0.00115	0.034		0.97	195	99	95
30	0.00115	0.034		0.97	195	100	96
31	0.00115	0.034		0.97	195	101	96
32	0.00115	0.034		0.97	195	101	97
33	0.00115	0.034		0.97	195	102	98
34	0.00115	0.034		0.97	195	102	99
35	0.00115	0.034		0.97	195	102	99
36	0.00115	0.034		0.97	195	103	99
37	0.00115	0.034		0.97	221	103	100
38	0.00115	0.034		0.97	221	103	100
39	0.00115	0.034		0.97	221	103	100
40	0.00115	0.034		0.97	221	103	100
41	0.00115	0.034		0.97	221	103	100
42	0.00115	0.034		0.97	221	104	100
43	0.00115	0.034		0.97	221	104	101
44	0.00115	0.034		0.97	221	104	101
45	0.00115	0.034		0.97	221	104	101
46	0.00115	0.034	724.95	0.97	221	105	101
47	0.00115	0.034	557.78	0.97	221	105	102
48	0.00115	0.034		0.97	221	105	102

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	167.17	0.966	209.75	95.06

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	05/21/04
Run Number:	3 - Particulate

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	=	0
%O2	=	19
Md (g/gmol)	=	28.76

Volume of Water Vapor Collected @ STD. COND., Vw

Vlc (mL)	=	71.1
Vw (scf)	=	3.34668

Volume of Dry Gas Collected @ STD. COND., Vm

Tm (F)	=	105.68
Vm (ft^3)	=	170.749
Pb (in Hg)	=	30.08
delta H (in H2O)	=	0.977
gamma	=	1.002
Vm (dscf)	=	160.93

Moisture Content of Stack Gas, Bwo

Bwo	=	2.04%
1-Bwo	=	97.96%

Molecular Weight of Stack Gas, Ms

Ms (g/gmol)	=	28.54

Area of Stack (enter diameter in Inches), As

L	=	366
W	=	1040
diameter (In)	=	0
No. of Stacks	=	1
As(L*W) (ft^2)	=	2643.333
As(dia.) (ft^2)	=	2643.3

Absolute Pressure, Ps

Static (in H2O)	=	0
Ps (in Hg)	=	30.08

Stack Gas Velocity, Vs

Cp	=	0.84
sqr(delta p)	=	0.034
Ts (F)	=	204.5
Vs (fps)	=	2.14

Stack Gas Flowrate, Qs

As (ft^2)	=	2643.33
Qs (acfm)	=	339,799

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd

Qstd (dscf/m)	=	265,912
Qstd (dscf/hr)	=	15,954,694

Velocity at the Nozzle, Vn

Dia. of Nozzle (in)	=	1.0
Time of Run (min)	=	288
Vn (fps)	=	2.18

Area of Nozzle, An

An (ft^2)	=	0.005454

% Isokinetic, %I

%I	=	101.84

% Isokinetic measured from intermediate values

%I	=	101.84

Pollutant Mass Emission Rate, PMR

Mn (g)	=	0.0098	0.0223	
PMR (lbs/hr)	=	2.1419	4.8739	7.015818
		Filterable	Condensible	Total

Grains per acf

gr/acf	=	0.0007

Grains per dscf

gr/dscf	=	**0.0009**	0.0021	**0.0031**
		Filterable	Condensible	Total

FIELD DATA

K' Factor	850

Start Time	13:07
Stop Time	17:54

Run 3	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.98	187	102	101
2	0.00115	0.034		0.98	187	102	101
3	0.00115	0.034		0.98	187	103	102
4	0.00115	0.034		0.98	187	103	102
5	0.00115	0.034		0.98	187	104	102
6	0.00115	0.034		0.98	187	105	102
7	0.00115	0.034		0.98	187	105	103
8	0.00115	0.034		0.98	187	106	103
9	0.00115	0.034		0.98	187	106	103
10	0.00115	0.034		0.98	187	106	103
11	0.00115	0.034		0.98	187	106	103
12	0.00115	0.034		0.98	187	106	103
13	0.00115	0.034		0.98	228	106	103
14	0.00115	0.034		0.98	228	106	103
15	0.00115	0.034		0.98	228	107	104
16	0.00115	0.034		0.98	228	108	105
17	0.00115	0.034		0.98	228	108	105
18	0.00115	0.034		0.98	228	108	105
19	0.00115	0.034		0.98	228	108	105
20	0.00115	0.034		0.98	228	108	105
21	0.00115	0.034		0.98	228	111	106
22	0.00115	0.034		0.98	228	110	107
23	0.00115	0.034		0.98	228	110	108
24	0.00115	0.034		0.98	228	111	108
25	0.00115	0.034		0.98	202	110	107
26	0.00115	0.034		0.98	202	110	108
27	0.00115	0.034		0.98	202	110	108
28	0.00115	0.034		0.98	202	110	107
29	0.00115	0.034		0.98	202	109	107
30	0.00115	0.034		0.98	202	109	107
31	0.00115	0.034		0.98	202	108	106
32	0.00115	0.034		0.98	202	108	106
33	0.00115	0.034		0.98	202	108	105
34	0.00115	0.034		0.98	202	108	105
35	0.00115	0.034		0.98	202	107	105
36	0.00115	0.034		0.98	202	107	105
37	0.00115	0.034		0.98	201	107	105
38	0.00115	0.034		0.98	201	106	104
39	0.00115	0.034		0.98	201	106	104
40	0.00115	0.034		0.98	201	106	104
41	0.00115	0.034		0.98	201	106	104
42	0.00115	0.034		0.98	201	106	104
43	0.00115	0.034		0.98	201	106	104
44	0.00115	0.034		0.98	201	106	104
45	0.00115	0.034		0.98	201	106	103
46	0.00115	0.034	893.904	0.98	201	106	103
47	0.00115	0.034	723.155	0.98	201	106	103
48	0.00115	0.034		0.98	201	106	103

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	170.749	0.977	204.50	105.68

METALS - STACK EMISSION SUMMARY

SOURCE TESTED: **PPFF Baghouse**
COMPANY NAME: Nucor Steel
DATE OF TEST: May 19, 21, 2004

Metals Emissions (lbs/hr)	Run 1	Run 2	Run 3	Average
Lead	0.0170	0.0081	0.0071	**0.0126**
Mercury	0.0145	0.0169	0.0279	**0.0198**
Avg. Stack Vol. Flow Rate				
ACFM	1,367,551	1,365,281	1,367,145	1,366,659
DSCFM	1,044,463	1,048,837	1,045,172	1,046,157
Avg. Stack Temp	208.00	206.75	207.75	207.50
Stack Gas Velocity	2.156	2.152	2.155	2.154
Avg. Velocity Head	0.00115	0.00115	0.00115	0.00115
Avg. Sq. Rt of Delta P	0.034	0.034	0.034	0.034
ISOKINETIC TESTING SUMMARY				
Allowable isokinetic 80-120%	96.88	100.43	96.50	97.94
% Moisture of Stack Gas	3.89%	3.51%	3.83%	3.74%
Sample Volume	37.583	39.124	37.463	38.057

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	5/19/04
Run Number:	1 - Metals

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 19
Md (g/gmol) = 28.76

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 32.3
Vw (scf) = 1.52036

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 83.927
Vm (ft^3) = 38.894
Pb (in Hg) = 30.08
delta H (in H2O) = 0.060
gamma = 0.99
Vm (dscf) = 37.56

Moisture Content of Stack Gas, Bwo
Bwo = 3.89%
1-Bwo = 96.11%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.34

Area of Stack (enter diameter in inches), As
Depth = 366
Width = 4160
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 10573.333
As(dia.) (ft^2) = 10573.3

Absolute Pressure, Ps
Static (in H2O) = 0
Ps (in Hg) = 30.08

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.034
Ts (F) = 208.0
Vs (fps) = 2.16

Stack Gas Flowrate, Qs
As (ft^2) = 10573.33
Qs (acfm) = 1,367,551

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 1,044,463
Qstd (dscf/hr) = 62,667,790

Velocity at the Nozzle, Vn
Dia. of Nozzle (in) = 0.5
Time of Run (min) = 288.00
Vn (fps) = 2.09

Area of Nozzle, An
An (ft^2) = 0.0013635

% Isokinetic, %I
%I = 96.88
% Isokinetic measured from intermediate values
%I = 96.88

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn	4.64E-06	3.95E-06
PMR (lbs/hr)	1.70E-02	1.45E-02
	LEAD	MERCURY
Grains per acf		
gr/acf =	1.51E-06	1.29E-06
Grains per dscf		
gr/dscf =	1.90E-06	1.62E-06

FIELD DATA

K' Factor	52.5

Start Time	15:56
Stop Time	21:30

Run 1	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.06	208	86	86
2	0.00115	0.034		0.06	208	87	88
3	0.00115	0.034		0.06	208	89	88
4	0.00115	0.034		0.06	208	88	88
5	0.00115	0.034		0.06	208	88	88
6	0.00115	0.034		0.06	208	89	89
7	0.00115	0.034		0.06	208	89	89
8	0.00115	0.034		0.06	208	86	86
9	0.00115	0.034		0.06	208	83	84
10	0.00115	0.034		0.06	208	82	83
11	0.00115	0.034		0.06	208	82	83
12	0.00115	0.034		0.06	208	82	82
13	0.00115	0.034		0.06	208	83	84
14	0.00115	0.034		0.06	208	82	84
15	0.00115	0.034		0.06	208	82	82
16	0.00115	0.034		0.06	208	82	82
17	0.00115	0.034		0.06	208	82	82
18	0.00115	0.034		0.06	208	82	82
19	0.00115	0.034		0.06	208	82	82
20	0.00115	0.034		0.06	208	82	82
21	0.00115	0.034		0.06	208	82	82
22	0.00115	0.034		0.06	208	82	82
23	0.00115	0.034		0.06	208	82	82
24	0.00115	0.034		0.06	208	82	82
25	0.00115	0.034		0.06	208	81	82
26	0.00115	0.034		0.06	208	82	82
27	0.00115	0.034		0.06	208	82	82
28	0.00116	0.034		0.06	208	82	82
29	0.00115	0.034		0.06	208	82	81
30	0.00115	0.034		0.06	208	82	81
31	0.00115	0.034		0.06	208	82	81
32	0.00115	0.034		0.06	208	82	82
33	0.00115	0.034		0.06	208	84	82
34	0.00115	0.034		0.06	208	83	82
35	0.00115	0.034		0.06	208	83	82
36	0.00115	0.034		0.06	208	83	82
37	0.00115	0.034		0.06	208	83	83
38	0.00115	0.034		0.06	208	83	83
39	0.00115	0.034		0.06	208	83	83
40	0.00115	0.034		0.06	208	83	83
41	0.00115	0.034		0.06	208	83	82
42	0.00115	0.034		0.06	208	85	84
43	0.00115	0.034		0.06	208	86	87
44	0.00115	0.034		0.06	208	88	88
45	0.00115	0.034		0.06	208	88	87
46	0.00115	0.034	917.17	0.06	208	88	86
47	0.00115	0.034	878.276	0.06	208	87	87
48	0.00115	0.034		0.06	208	87	87

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	38.894	0.060	208.00	83.93

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	05/21/04
Run Number:	**2 - Metals**

Molecular Weight of Stack Gas, Dry Basis, Md
%CO2 = 0
%O2 = 19
Md (g/gmol) = 28.76

Volume of Water Vapor Collected @ STD. COND., Vw
Vlc (mL) = 30.2
Vw (scf) = 1.42151

Volume of Dry Gas Collected @ STD. COND., Vm
Tm (F) = 92.813
Vm (ft^3) = 41.15
Pb (In Hg) = 30.08
delta H (in H2O) = 0.060
gamma = 0.99
Vm (dscf) = 39.12

Moisture Content of Stack Gas, Bwo
Bwo = 3.51%
1-Bwo = 96.49%

Molecular Weight of Stack Gas, Ms
Ms (g/gmol) = 28.38

Area of Stack (enter diameter in inches), As
L = 366
W = 4160
diameter (in) = 0
No. of Stacks = 1
As(L*W) (ft^2) = 10573.333
As(dia.) (ft^2) = 10573.3

Absolute Pressure, Ps
Static (In H2O) = 0
Ps (in Hg) = 30.08

Stack Gas Velocity, Vs
Cp = 0.84
sqr(delta p) = 0.034
Ts (F) = 206.8
Vs (fps) = 2.15

Stack Gas Flowrate, Qs
As (ft^2) = 10573.33
Qs (acfm) = 1,365,281

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd
Qstd (dscf/m) = 1,048,837
Qstd (dscf/hr) = 62,930,236

Velocity at the Nozzle, Vn
Dia. of Nozzle (In) = 0.5
Time of Run (min) = 288
Vn (fps) = 2.16

Area of Nozzle, An
An (ft^2) = 0.0013635

% Isokinetic, %I
%I = 100.43
% Isokinetic measured from intermediate values
%I = 100.43

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn	2.29E-06	4.77E-06
PMR (lbs/hr)	8.11E-03	1.69E-02
	LEAD	MERCURY
Grains per acf		
gr/acf =	7.18E-07	1.49E-06
Grains per dscf		
gr/dscf =	9.03E-07	1.88E-06

FIELD DATA

K' Factor	52.5

Start Time	7:17
Stop Time	12:14

Run 2	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.06	212	80	81
2	0.00115	0.034		0.06	212	81	81
3	0.00115	0.034		0.06	212	81	81
4	0.00115	0.034		0.06	212	82	81
5	0.00115	0.034		0.06	212	82	81
6	0.00115	0.034		0.06	212	83	82
7	0.00115	0.034		0.06	212	83	83
8	0.00115	0.034		0.06	212	85	84
9	0.00115	0.034		0.06	212	86	84
10	0.00115	0.034		0.06	212	87	85
11	0.00115	0.034		0.06	212	88	86
12	0.00115	0.034		0.06	212	89	86
13	0.00115	0.034		0.06	198	90	86
14	0.00115	0.034		0.06	198	90	88
15	0.00115	0.034		0.06	198	90	89
16	0.00115	0.034		0.06	198	91	90
17	0.00115	0.034		0.06	198	91	90
18	0.00115	0.034		0.06	198	91	90
19	0.00115	0.034		0.06	198	92	91
20	0.00115	0.034		0.06	198	92	91
21	0.00115	0.034		0.06	198	93	91
22	0.00115	0.034		0.06	198	93	92
23	0.00115	0.034		0.06	198	93	92
24	0.00115	0.034		0.06	198	93	92
25	0.00115	0.034		0.06	229	94	93
26	0.00115	0.034		0.06	229	94	93
27	0.00115	0.034		0.06	229	94	94
28	0.00115	0.034		0.06	229	95	94
29	0.00115	0.034		0.06	229	95	94
30	0.00115	0.034		0.06	229	96	95
31	0.00115	0.034		0.06	229	97	96
32	0.00115	0.034		0.06	229	97	97
33	0.00115	0.034		0.06	229	98	97
34	0.00115	0.034		0.06	229	98	97
35	0.00115	0.034		0.06	229	98	98
36	0.00115	0.034		0.06	229	99	98
37	0.00115	0.034		0.06	188	100	99
38	0.00115	0.034		0.06	188	100	99
39	0.00115	0.034		0.06	188	100	99
40	0.00115	0.034		0.06	188	100	100
41	0.00115	0.034		0.06	188	101	101
42	0.00115	0.034		0.06	188	101	101
43	0.00115	0.034		0.06	188	102	102
44	0.00115	0.034		0.06	188	102	102
45	0.00115	0.034		0.06	188	102	102
46	0.00115	0.034	958.47	0.06	188	102	102
47	0.00115	0.034	917.32	0.06	188	102	102
48	0.00115	0.034		0.06	188	103	102

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	41.15	0.060	206.75	92.81

Company:	Nucor Steel
Location:	Crawfordsville, Indiana
Source:	PPFF Baghouse
Date:	05/21/04
Run Number:	3 - Metals

Molecular Weight of Stack Gas, Dry Basis, Md

%CO2	=	0
%O2	=	19
Md (g/gmol)	=	28.76

Volume of Water Vapor Collected @ STD. COND., Vw

Vlc (mL)	=	31.7
Vw (scf)	=	1.49212

Volume of Dry Gas Collected @ STD. COND., Vm

Tm (F)	=	102.98
Vm (ft^3)	=	40.128
Pb (in Hg)	=	30.08
delta H (in H2O)	=	0.060
gamma	=	0.99
Vm (dscf)	=	37.46

Moisture Content of Stack Gas, Bwo

Bwo	=	3.83%
1-Bwo	=	96.17%

Molecular Weight of Stack Gas, Ms

Ms (g/gmol)	=	28.35

Area of Stack (enter diameter in inches), As

L	=	366
W	=	4160
diameter (in)	=	0
No. of Stacks	=	1
As(L*W) (ft^2)	=	10573.333
As(dia.) (ft^2)	=	10573.3

Absolute Pressure, Ps

Static (in H2O)	=	0
Ps (in Hg)	=	30.08

Stack Gas Velocity, Vs

Cp	=	0.84
sqr(delta p)	=	0.034
Ts (F)	=	207.8
Vs (fps)	=	2.16

Stack Gas Flowrate, Qs

As (ft^2)	=	10573.33
Qs (acfm)	=	1,367.145

Stack Gas Flowrate @ STD. COND., Dry Basis, Qstd

Qstd (dscf/m)	=	1,045,172
Qstd (dscf/hr)	=	62,710,292

Velocity at the Nozzle, Vn

Dia. of Nozzle (in)	=	0.5	Area of Nozzle, An An (ft^2)	=	0.001364
Time of Run (min)	=	288			
Vn (fps)	=	2.08			

% Isokinetic, %I

%I	=	96.50

% isokinetic measured from intermediate values

%I	=	96.50

Pollutant Mass Emission Rate, PMR, lbs./hr.

Mn	1.93E-06	7.58E-06
PMR (lbs/hr)	7.12E-03	2.79E-02
	LEAD	MERCURY
Grains per acf		
gr/acf =	6.31E-07	2.48E-06
Grains per dscf		
gr/dscf =	7.95E-07	3.12E-06

FIELD DATA

K' Factor	52.5

Start Time	13:07
Stop Time	17:54

Run 3	Delta P	Squ Δ P	Volume	Delta H	Stack T	DGM Inlet	DGM Outlet
1	0.00115	0.034		0.06	202	102	102
2	0.00115	0.034		0.06	202	102	102
3	0.00115	0.034		0.06	202	102	102
4	0.00115	0.034		0.06	202	102	102
5	0.00115	0.034		0.06	202	102	102
6	0.00115	0.034		0.06	202	102	102
7	0.00115	0.034		0.06	202	102	102
8	0.00115	0.034		0.06	202	102	102
9	0.00115	0.034		0.06	202	102	102
10	0.00115	0.034		0.06	202	102	103
11	0.00115	0.034		0.06	202	103	103
12	0.00115	0.034		0.06	202	103	103
13	0.00115	0.034		0.06	214	103	103
14	0.00115	0.034		0.06	214	102	102
15	0.00115	0.034		0.06	214	104	103
16	0.00115	0.034		0.06	214	104	103
17	0.00115	0.034		0.06	214	104	103
18	0.00115	0.034		0.06	214	104	103
19	0.00115	0.034		0.06	214	106	103
20	0.00115	0.034		0.06	214	106	103
21	0.00115	0.034		0.06	214	106	105
22	0.00115	0.034		0.06	214	106	105
23	0.00115	0.034		0.06	214	106	105
24	0.00115	0.034		0.06	214	106	105
25	0.00115	0.034		0.06	201	104	105
26	0.00115	0.034		0.06	201	104	105
27	0.00115	0.034		0.06	201	105	105
28	0.00115	0.034		0.06	201	105	105
29	0.00115	0.034		0.06	201	104	104
30	0.00115	0.034		0.06	201	104	104
31	0.00115	0.034		0.06	201	103	103
32	0.00115	0.034		0.06	201	103	103
33	0.00115	0.034		0.06	201	103	103
34	0.00115	0.034		0.06	201	103	102
35	0.00115	0.034		0.06	201	102	102
36	0.00115	0.034		0.06	201	102	102
37	0.00115	0.034		0.06	214	102	102
38	0.00115	0.034		0.06	214	102	102
39	0.00115	0.034		0.06	214	102	102
40	0.00115	0.034		0.06	214	102	102
41	0.00115	0.034		0.06	214	102	102
42	0.00115	0.034		0.06	214	102	102
43	0.00115	0.034		0.06	214	102	102
44	0.00115	0.034		0.06	214	102	102
45	0.00115	0.034		0.06	214	102	102
46	0.00115	0.034	998.858	0.06	214	102	102
47	0.00115	0.034	958.73	0.06	214	102	102
48	0.00115	0.034		0.06	214	102	102

	Squ Δ P	Volume	Delta H	Stack T	Meter Temp
0.001	0.034	40.128	0.060	207.75	102.98

CYCLONIC FLOW CHECK
(Method 2F)

Date:	May 19, 2004	**Box ID:**	A-1
Barometric:	30.08	**Probe Type:**	Type-S
Stack Dia:	278" x 176"	**Probe No:**	12.1x2
Pitot Cp:	0.84	**Pitot Check:**	Good

Traverse Points	Percent of Dia.	Vel. Head (ΔP)	Yaw Angle (α)	Temp (deg F.)
1 - Port 1	22.0"	1.10	+ 0.0	184
2	66.0"	1.40	+ 8.0	189
3	110.0"	1.40	+ 8.0	186
4	154.0"	1.05	+ 8.0	180
5 - Port 2	22.0"	0.74	+ 8.0	197
6	66.0"	0.89	+ 12.0	194
7	110.0"	1.05	+ 13.0	192
8	154.0"	0.94	+ 10.0	181
9 - Port 3	22.0"	0.72	+ 3.0	151
10	66.0"	0.97	+ 6.0	160
11	110.0"	1.15	+ 9.0	156
12	154.0"	0.98	+ 9.0	152
13 - Port 4	22.0"	0.52	+ 0.0	179
14	66.0"	0.83	+ 0.0	187
15	110.0"	1.20	+ 3.0	192
16	154.0"	1.25	+ 2.0	197
17 - Port 5	22.0"	0.82	+ 3.0	192
18	66.0"	1.02	+ 5.0	180
19	110.0"	1.45	+ 8.0	169
20	154.0"	1.40	+ 6.0	165
21 - Port 6	22.0"	1.40	+ 5.0	225
22	66.0"	1.50	+ 5.0	245
23	110.0"	1.60	+ 5.0	250
24	154.0"	1.25	+ 5.0	257
25 - Port 7	22.0"	1.30	+ 5.0	237
26	66.0"	1.65	+ 4.0	262
27	110.0"	1.55	+ 5.0	242
28	154.0"	1.30	+ 6.0	223
29 - Port 8	22.0"	0.78	+ 7.0	268
30	66.0"	0.97	+ 8.0	280
31	110.0"	0.97	+ 3.0	287
32	154.0"	0.94	+ 2.0	293
	Absolute Avgs.	**1.13** (ΔP)	**5.66°** (α)	**208.0** F

NOTE: The average of the yaw angle (α) absolute values must be 20° to be acceptable.

PRE-TEST FLOW TRAVERSE

(Method 1-2)

RUN 2

Date:	May 21, 2004	**Box ID:**	A-1
Barometric:	30.04	**Probe Type:**	Type-S
Stack Dia:	278" x 176"	**Probe No:**	12.1x2
Pitot Cp:	0.84	**Pitot Check:**	Good

Traverse Points	Percent of Dia.	Vel. Head (ΔP)	Temp (deg F.)
1 - Port 1	22.0"	1.40	185
2	66.0"	1.25	188
3	110.0"	1.30	186
4	154.0"	1.30	188
5 - Port 2	22.0"	1.20	190
6	66.0"	0.98	192
7	110.0"	0.93	187
8	154.0"	0.82	188
9 - Port 3	22.0"	1.05	192
10	66.0"	0.92	196
11	110.0"	0.88	198
12	154.0"	0.91	204
13 - Port 4	22.0"	0.92	212
14	66.0"	0.95	218
15	110.0"	1.07	229
16	154.0"	1.10	238
17 - Port 5	22.0"	0.89	244
18	66.0"	0.78	259
19	110.0"	1.20	273
20	154.0"	1.10	282
21 - Port 6	22.0"	1.30	294
22	66.0"	1.20	303
23	110.0"	1.35	310
24	154.0"	1.40	318
25 - Port 7	22.0"	1.30	322
26	66.0"	1.40	328
27	110.0"	1.25	330
28	154.0"	1.30	338
29 - Port 8	22.0"	0.86	334
30	66.0"	0.84	331
31	110.0"	0.88	321
32	154.0"	0.89	319
	Absolute Avgs.	**1.09** (ΔP)	**253.0** F

PRE-TEST FLOW TRAVERSE

(Method 1-2)

RUN 3

Date:	May 21, 2004	**Box ID:**	A-1
Barometric:	30.04	**Probe Type:**	Type-S
Stack Dia:	278" x 176"	**Probe No:**	12.1x2
Pitot Cp:	0.84	**Pitot Check:**	Good

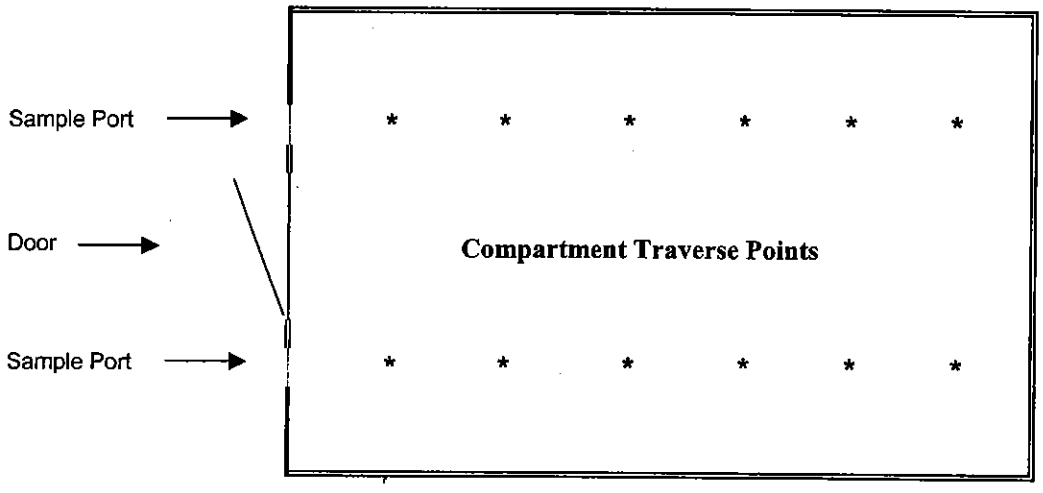
Traverse Points	Percent of Dia.	Vel. Head (ΔP)	Temp (deg F.)
1 - Port 1	22.0"	1.30	188
2	66.0"	1.30	189
3	110.0"	1.25	192
4	154.0"	1.35	198
5 - Port 2	22.0"	1.25	201
6	66.0"	0.90	212
7	110.0"	0.95	222
8	154.0"	0.90	219
9 - Port 3	22.0"	1.0	191
10	66.0"	0.98	198
11	110.0"	0.90	209
12	154.0"	0.95	219
13 - Port 4	22.0"	0.92	224
14	66.0"	0.90	225
15	110.0"	1.05	225
16	154.0"	1.15	218
17 - Port 5	22.0"	0.90	222
18	66.0"	0.85	235
19	110.0"	1.05	238
20	154.0"	1.15	242
21 - Port 6	22.0"	1.35	245
22	66.0"	1.35	228
23	110.0"	1.40	232
24	154.0"	1.10	233
25 - Port 7	22.0"	1.35	236
26	66.0"	1.45	232
27	110.0"	1.40	238
28	154.0"	1.30	245
29 - Port 8	22.0"	0.98	248
30	66.0"	0.78	252
31	110.0"	0.87	258
32	154.0"	0.89	264
	Absolute Avgs.	**1.10** (ΔP)	**217.3 F**

VELOCITY TRAVERSE POINT DETERMINATION
(EPA Method 1)

Nucor Steel @ **Crawfordsville, Indiana**
PPFF Baghouse Compartment

Depth-in : 366 **Dia. (inches)** **304.03**
Width-in : 260 **Ports:** **2**

Points Per Port:	**2**	**4**	**5**	**6**	**10**	**13**
1	91.50	45.75	36.60	**30.50**	18.30	14.08
2	274.50	137.25	109.80	**91.50**	54.90	42.23
3		228.75	183.00	**152.50**	91.50	70.38
4		320.25	256.20	**213.50**	128.10	98.54
5			329.40	**274.50**	164.70	126.69
6				**335.50**	201.30	154.85
7					237.90	183.00
8					274.50	211.15
9					311.10	239.31
10						267.46
11						295.62
12						323.77
13						351.92
Spacing	0.00	91.50	73.20	**61.00**	36.60	28.15

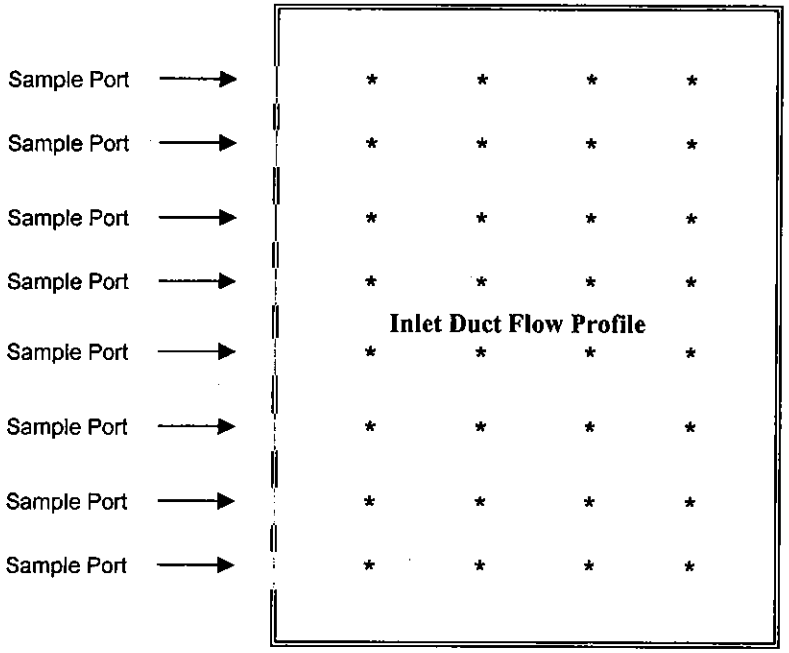


VELOCITY TRAVERSE POINT DETERMINATION
(EPA Method 1)

Nucor Steel @ **Crawfordsville, Indiana**
PPFF Baghouse Compartment

Depth-in : 176 **Dia. (inches)** **215.54**
Height-in : 278 **Ports:** **8**

Points Per Port:	**2**	**4**	**5**	**8**	**10**	**13**
1	44.00	**22.00**	17.60	11.00	8.80	6.77
2	132.00	**66.00**	52.80	33.00	26.40	20.31
3		**110.00**	88.00	55.00	44.00	33.85
4		**154.00**	123.20	77.00	61.60	47.38
5			158.40	99.00	79.20	60.92
6				121.00	96.80	74.46
7				143.00	114.40	88.00
8				165.00	132.00	101.54
9					149.60	115.08
10						128.62
11						142.15
12						155.69
13						169.23
Spacing	0.00	**44.00**	35.20	22.00	17.60	13.54



AIR TEST PROFESSIONALS FIELD DATA SHEET PM/PM10 TESTING EPA METHOD 1-5/202/9 RUN 1 PAGE 1 of 2

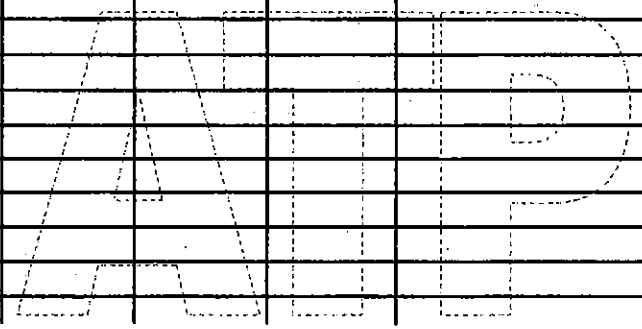
CLIENT NUCOR STEEL	METER BOX ID A-1	K FACTOR 840	DUCT DIMENSIONS (in.)			Diagram of Test Location
LOCATION CRAWFORDSVILLE, IN	METER γ 1.022	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0			
UNIT PFF BAGHOUSE	PITOT C_P 0.84	PROBE LINER TEFLON	FILTER ID R1	SILICA ID R1 #4		
DATE 05-19-04 PROJECT #	PROBE ID 3' A	NOZZLE ID 1.0"	TEDLAR BAG ID			
METER OPERATOR CARLOS BROWN	BAROMETRIC 30.08	AMBIENT TEMP (°F)	PITOT CHECK	O_2 19.0		
PROBE OPERATOR TERRY KAUFFMAN	STATIC PRESSURE (in. H_2O)		PASS ☒ FAIL ☐	CO_2 0.0		
VISIBLE EMISSIONS READER ANDY YOUNG	LEAK RATE BEFORE (cfm) 0.000	@ (in. Hg) 12.0"	H_2O (mL) 60			
CLIENT CONTACT MARK WASHER	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 8"	SILICA GEL (g) 9.6			
AGENCY CONTACT JARROD FISHER	START TIME 1557	STOP TIME 21:29	TOTAL Vlc 69.6			

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 393.070	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
1	6.0	0.00115	0.97	396.6	208			68	92	92	5.5	
2	12.0		0.97	400.0				66	93	92	5.5	
3	18.0		0.97	403.5				69	94	92	5.5	
4	24.0		0.97	407.5				54	94	92	5.5	
5	30.0		0.97	410.3				51	95	92	5.5	
6	36.0		0.97	414.1				52	94	93	5.5	
7	42.0		0.97	417.5				52	95	93		
8	48.0		0.97	420.7				54	91	91	5.5	
9	54.0		0.97	424.2				58	86	88	5.2	
10	60.0		0.97	427.7				53	85	86	5.0	
11	66.0		0.97	431.2				54	86	85	5.0	
12	72.0		0.97	434.4				56	86	85	5.0	
13	78.0		0.97	437.8	208			64	85	85	5.0	
14	84.0		0.97	442.0				53	86	85	5.0	
15	90.0		0.97	444.9				54	87	85	5.0	
16	96.0		0.97	448.3				54	87	85	5.0	SHUT DOWN
17	102.0		0.97	451.6				55	87	85	5.0	APPROX 95 MIN
18	108.0		0.97	455.1				56	87	84	5.0	
19	114.0		0.97	458.4				59	86	84	5.0	
20	120.0		0.97	461.8				56	86	84	5.0	
21	126.0		0.97	465.3				57	86	84	5.0	
22	132.0		0.97	468.6				58	86	84	5.0	
23	138.0		0.97	472.0				58	86	84	5.0	
24	144.0		0.97	475.5				59	86	84	5.0	
25	150.0		0.97	478.9	208			64	85	84	5.0	
26	156.0		0.97	482.2				57	86	84	5.0	
27	162.0		0.97	485.9				56	86	84	5.0	
28	168.0		0.97	490.0				56	86	84	5.0	
29	174.0		0.97	492.6				56	86	84	5.0	
30	180.0		0.97	496.2				56	84	84	5.6	

AIR TEST PROFESSIONALS FIELD DATA SHEET PM/PM10 TESTING EPA METHOD 1-5/202/9 RUN 1 PAGE 2 OF 2

CLIENT NUCOR STEEL	METER BOX ID A-1	K FACTOR	DUCT DIMENSIONS (in.)		Diagram of Test Location
LOCATION CRAWFORDSVILLE, IN	METER γ 1.002	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0		
UNIT PPPF BAGHOUSE	PITOT C_P 0.84	PROBE LINER TEFLON	FILTER ID R1	SILICA ID	
DATE 05-19-04 PROJECT #	PROBE ID 3-A	NOZZLE ID 1.011	TEDLAR BAG ID		
METER OPERATOR CARLOS BROWN	BAROMETRIC 30.08	AMBIENT TEMP (°F)	PITOT CHECK	O_2	
PROBE OPERATOR TERRY KAUFFMAN	STATIC PRESSURE (in. H_2O)		PASS ☐ FAIL ☐	CO_2	
VISIBLE EMISSIONS READER ANDY YOUNG	LEAK RATE BEFORE (cfm)	@ (in. Hg)	H_2O (mL) 60		
CLIENT CONTACT MARK WASHER	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 8"	SILICA GEL (g) 9.6		
AGENCY CONTACT JARROD FISHER	START TIME 15:57	STOP TIME 2129	TOTAL Vic 69.6		

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
31	186		0.97	499.5				56	85	84	5.0	
32	192		0.97	503.4				56	86	84	5.0	
33	198		0.97	506.2				57	87	84	5.0	
34	204		0.97	509.6				57	88	84	5.0	
35	210		0.97	513.0				58	88	85	5.0	
36	216		0.97	516.5	↓			59	87	85	5.0	
37	222		0.97	520.0	208			61	88	85	5.0	
38	228		0.97	523.5				60	89	86	5.0	
39	234		0.97	527.1				61	89	86	5.0	
40	240		0.97	530.6				62	89	86	5.0	
41	246		0.97	534.1				64	89	86	5.0	
42	252		0.97	537.1				63	92	87	5.0	
43	258		0.97	540.4				65	94	89	5.0	
44	264		0.97	543.0				60	95	91	5.0	
45	270		0.97	547.2				59	95	91	5.0	
46	276		0.97	550.6				59	95	91	5.0	
47	282		0.97	554.1				59	94	91	5.0	
48	288		0.97	557.558	↓			59	94	91	5.0	
				164.488								



AIR TEST PROFESSIONALS FIELD DATA SHEET PM/PM10 TESTING EPA METHOD 1-5/202/9 RUN 2 PAGE 1 OF 2

CLIENT Nucor Steel	METER BOX ID A-1	K FACTOR	DUCT DIMENSIONS (in.)		Diagram of Test Location
LOCATION Crawfordsville, IN	METER γ 1.002	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0		
UNIT PPPP Baghouse	PITOT C_p 0.84	PROBE LINER Teflon	FILTER ID R2	SILICA ID #5	
DATE 05-21-04 PROJECT #	PROBE ID 3-A	NOZZLE ID 0.0"	TEDLAR BAG ID		
METER OPERATOR Carlos Brown	BAROMETRIC 30.04	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2	
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)			CO_2	
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm) 0.000 @ (in. Hg) 11"			H_2O (mL) 62	
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000 @ (in. Hg) 8"			SILICA GEL (g) 10.5	
AGENCY CONTACT	START TIME 0717 STOP TIME 12:14			TOTAL Vic 72.5	

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 557.78	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
1	6	0.00115	0.97	561.2	209			66	82	81	4.0	
2	12		0.97	564.7				64	83	81	4.0	
3	18		0.97	567.9				63	84	82	4.0	
4	24		0.97	571.5				62	85	83	4.0	
5	30		0.97	574.7				62	85	83	4.0	
6	36		0.97	578.0				60	85	83	4.0	
7	42		0.97	581.4				60	89	85	4.0	
8	48		0.97	584.9				59	90	86	4.0	
9	54		0.97	588.4				58	90	86	4.0	
10	60		0.97	591.9				58	90	88	4.0	
11	66		0.97	595.4				59	90	88	4.0	
12	72		0.97	598.5				59	90	89	4.0	
13	78		0.97	602.0	215			60	91	89	4.0	
14	84		0.97	605.5				61	93	91	4.0	
15	90		0.97	609.0				61	95	91	4.0	
16	96		0.97	612.4				62	96	92	4.0	
17	102		0.97	615.9				60	96	92	4.0	
18	108		0.97	619.4				60	96	92	4.0	
19	114		0.97	622.9				56	96	92	4.0	
20	120		0.97	626.2				56	96	93	4.0	
21	126		0.97	629.6				57	97	93	4.0	
22	132		0.97	633.0				57	97	94	4.0	
23	138		0.97	636.4				57	97	94	4.0	
24	144		0.97	640.0				56	97	94	4.0	
25	150		0.97	643.4	195			56	98	94	4.0	
26	156		0.97	646.9				58	98	94	4.0	
27	162		0.97	650.3				58	98	95	4.0	
28	168		0.97	653.7				59	99	95	4.0	
29	174		0.97	657.4				60	99	95	4.0	
30	180		0.97	660.5				101	100	96	4.0	

AIR TEST PROFESSIONALS FIELD DATA SHEET PM/PM10 TEST1 EPA METHOD 1-5/202/9 RUN 2 PAGE 1 2

CLIENT NUCOR STEEL	METER BOX ID A-1	K FACTOR 84D	DUCT DIMENSIONS (in.)		Diagram of Test Location
LOCATION CRAWFORDSVILLE, IN	METER γ 1.002	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0		
UNIT PPPF BAGHOUSE	PITOT C_p 0.84	PROBE LINER TEFLON	FILTER ID R2	SILICA ID #5	
DATE 05-21-04 PROJECT #	PROBE ID 3-A	NOZZLE ID 1.04"	TEDLAR BAG ID		
METER OPERATOR CARLOS BROWN	BAROMETRIC 30.04	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2	
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)			CO_2	
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm)	@ (in. Hg)		H_2O (mL) 62.0	
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 12"		SILICA GEL (g) 10.5	
AGENCY CONTACT	START TIME	STOP TIME 12:14		TOTAL Vlc 72.5	

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				660.0								
31	186	0.00165	0.97	663.6				61	101	96	4.0	
32	192		0.97	667.2				60	101	97	4.0	
33	198		0.97	670.8				59	102	98	4.0	
34	204		0.97	674.4				60	102	99	4.0	
35	210		0.97	678.0				60	102	99	4.0	
36	216		0.97	681.6				61	103	99	4.0	
37	222		0.97	685.3	221			62	103	100	4.0	
38	228		0.97	688.7				62	103	100	4.0	
39	234		0.97	692.4				62	103	100	4.0	
40	240		0.97	696.1				64	103	100	4.0	
41	246		0.97	699.7				60	103	100	4.0	
42	252		0.97	703.3				58	104	100	4.0	
43	258		0.97	706.9				57	104	101	4.0	
44	264		0.97	710.5				56	104	101	4.0	
45	270		0.97	714.1				56	104	101	4.0	
46	276		0.97	717.7				58	105	101	4.0	
47	282		0.97	721.3				59	105	102	4.0	
48	288		0.97	724.950				59	105	102	4.0	

AIR TEST PROFESSIONALS FIELD DATA SHEET PM/PM10 TESTING EPA METHOD 5/202 RUN 3 PAGE 1 of 2

CLIENT NUCOR STEEL	METER BOX ID A-11	K FACTOR 850	DUCT DIMENSIONS (in.)			Diagram of Test Location
LOCATION CRAWFORDSVILLE, IN	METER γ 1.002	METER ΔH@ 1.72	PORT LENGTH (in.) 6.0			
UNIT PPFF BAGHOUSE	PITOT C_p 0.84	PROBE LINER TEFLON	FILTER ID R3	SILICA ID #6		
DATE 5-21-04 PROJECT #	PROBE ID 3-A	NOZZLE ID 1.0	TEDLAR BAG ID			
METER OPERATOR ANDREW YOUNG	BAROMETRIC 30.08	AMBIENT TEMP (°F) 85°	PITOT CHECK	O_2		
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)		PASS ☐ FAIL ☐	CO_2		
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm) 0.000	@ (in. Hg) 13"	H_2O (mL) 60			
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 10"	SILICA GEL (g) 11.1			
AGENCY CONTACT	START TIME 1307	STOP TIME 1754	TOTAL Vic 71.1			

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft^3)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				723.155								
1	6.0	0.00115	0.98	726.8	187			67	102	101	4	
2	12		0.98	730.3				66	102	101	4	START K' @ 850
3	18		0.98	733.8				66	103	102	4	
4	24		0.98	737.4				65	103	102	4	(INCREASED Tm)
5	30		0.98	741.0				64	104	102	4	
6	36		0.98	744.5				65	105	102	4	
7	42		0.98	748.0				65	105	103	4	
8	48		0.98	751.6				64	106	103	4	
9	54		0.98	755.2				64	106	103	4	
10	60		0.98	758.8				64	106	103	4	
11	66		0.98	762.3				62	106	103	4	
12	72		0.98	765.9				62	106	103	4	
13	78		0.98	769.4	228			61	106	103	4	
14	84		0.98	772.9				62	106	103	4	
15	90		0.98	776.5				63	107	104	4	
16	96		0.98	780.1				63	108	105	4	
17	102		0.98	783.7				64	108	105	4	
18	108		0.98	787.2				64	108	105	4	
19	114		0.98	790.8				65	108	105	4	
20	120		0.98	794.4				66	108	105	4	
21	126		0.98	797.9				66	111	106	4	
22	132		0.98	801.5				66	110	107	4	
23	138		0.98	805.0				67	110	108	4	
24	144		0.98	808.6				67	111	108	4	
25	150		0.98	812.2	282			63	110	107	4	
26	156		0.98	815.7				60	110	108	4	
27	162		0.98	819.3				58	110	108	4	
28	168		0.98	822.8				59	110	107	4	
29	174		0.98	826.4				61	109	107	4	
30	180		0.98	829.9				62	109	107	4	

AIR TE. PROFESSIONALS FIELD DATA SHEET PM/PM10 TES ; EPA METHOD 5/202 RUN 3 PAGE 1 OF 2

CLIENT Nucor Steel	METER BOX ID A4	K FACTOR 850	DUCT DIMENSIONS (in.)			Diagram of Test Location
LOCATION Crawfordsville, IN	METER γ 1.002	METER ΔH@ 1.72	PORT LENGTH (in.) 0.0			
UNIT PPFF BAGHOUSE	PITOT C_p 0.84	PROBE LINER TEFLON	FILTER ID R3	SILICA ID #6		
DATE 5-21-04 PROJECT #	PROBE ID 3-A4	NOZZLE ID 1.0	TEDLAR BAG ID			
METER OPERATOR Andrew Young	BAROMETRIC 30.04	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2		
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)			CO_2		
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm) 0.000	@ (in. Hg) 13"	H_2O (mL) 60			
CLIENT CONTACT	LEAK RATE AFTER (cfm)	@ (in. Hg)	SILICA GEL (g) 11.1			
AGENCY CONTACT	START TIME 1307	STOP TIME 1754	TOTAL Vic 71.1			

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
31	186	0.00165	0.98	833.5				64	108	106	4	
32	192		0.98	837.1				65	108	106	4	
33	198		0.98	840.6				65	108	105	4	
34	204		0.98	844.2				62	108	105	4	
35	210		0.98	847.8				61	107	105	4	
36	216		0.98	851.3				62	107	105	4	
37	222		0.98	854.9	201			62	107	105	4	
38	228		0.98	858.4				63	106	104	4	
39	234		0.98	862.0				63	106	104	4	
40	240		0.98	865.5				64	106	104	4	
41	246		0.98	869.1				65	106	104	4	
42	252		0.98	872.7				63	106	104	4	
43	258		0.98	876.2				63	106	104	4	
44	264		0.98	879.8				62	106	104	4	
45	270		0.98	883.3				62	106	103	4	
46	276		0.98	886.9				62	106	103	4	
47	282		0.98	890.5				62	106	103	4	
48	288		0.98	893.904				61	106	103	4	

AIR TEST PROFESSIONALS FIELD DATA SHEET METALS TESTING EPA METHOD 1-4/29 RUN 1 PAGE ___ OF ___

CLIENT Nucor Steel	METER BOX ID A-2	K FACTOR 52.5	DUCT DIMENSIONS (in.)		Diagram of Test Location		
LOCATION Crawfordsville, IN	METER γ 0.99	METER ΔH@ 1.829	PORT LENGTH (in.) 0.0				
UNIT PPFF BAGHOUSE	PITOT C_p 0.84	PROBE LINER TEFLON	FILTER ID R1	SILICA ID #1			
DATE 05-19-04 PROJECT #	PROBE ID 3-B	NOZZLE ID 0.50"	TEDLAR BAG ID				
METER OPERATOR CARLOS BROWN	BAROMETRIC 30.08	AMBIENT TEMP (°F)	PITOT CHECK	O_2			
PROBE OPERATOR TERRY KAUFFMAN	STATIC PRESSURE (in. H_2O)		PASS ☐ FAIL ☐	CO_2			
VISIBLE EMISSIONS READER ANDY YOUNG	LEAK RATE BEFORE (cfm) 0.000	@ (in. Hg) 12"	H_2O (mL) 20				
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 5"	SILICA GEL (g) 12.3				
AGENCY CONTACT	START TIME 15:58	STOP TIME 2130	TOTAL Vic 32.3				

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				878.276								
1	6	0.00115	0.060	879.16	208			68	88	88	2.0	
2	12			879.9				68	87	88	2.0	
3	18			880.7				68	89	88	2.0	
4	24			881.6				63	88	88	2.0	
5	30			882.4				58	88	88	2.0	
6	36			883.2				58	89	89	2.0	
7	42			884.1				58	89	89	2.0	
8	48			885.0				57	86	86	2.0	
9	54			885.8				57	83	84	2.0	
10	60			886.6				56	82	83	2.0	
11	66			887.4				56	82	83	2.0	
12	72			888.2				69	82	82	2.0	
13	78			889.0	208			66	83	84	2.0	
14	84			889.8				61	82	84	2.0	
15	90			890.6				58	82	82	2.0	
16	96			891.3				59	82	82	2.0	Shut Down
17	102			892.1				60	82	82	2.0	Approx 45 MIN
18	108			892.9				63	82	82	2.0	
19	114			893.7				67	82	82	2.0	
20	120			894.5				65	82	82	2.0	
21	126			895.3				65	82	82	2.0	
22	132			896.1				64	82	82	2.0	
23	138			896.8				64	82	82	2.0	
24	144			897.6				68	82	82	2.0	
25	150			898.4	208			67	81	82	2.0	
26	156			899.2				64	82	82	2.0	
27	162			900.0				62	82	82	2.0	
28	168			900.8				62	82	82	2.0	
29	174			901.6				62	82	81	2.0	
30	180			902.416				62	82	81	2.0	

AIR TEST PROFESSIONALS FIELD DATA SHEET Metals TESTING EPA METHOD 1-4/29 RUN 1 PAGE 2 of 2

CLIENT Nucor Steel	METER BOX ID A-2	K FACTOR	DUCT DIMENSIONS (in.)		Diagram of Test Location
LOCATION Crawfordsville, IN	METER γ 0.99	METER ΔH@ 1.829	PORT LENGTH (in.) 0.0		
UNIT PPEP Baghouse	PITOT C_P 0.84	PROBE LINER Teflon	FILTER ID R1	SILICA ID	
DATE 05-19-04 PROJECT #	PROBE ID 3-B	NOZZLE ID 0.50	TEDLAR BAG ID		
METER OPERATOR Carlos Brown	BAROMETRIC 30.08	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2	
PROBE OPERATOR Terry Kauffman	STATIC PRESSURE (in. H_2O)			CO_2	
VISIBLE EMISSIONS READER Andy Young	LEAK RATE BEFORE (cfm)	@ (in. Hg)	H_2O (mL) 2.0		
CLIENT CONTACT Mark Washer	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 5"	SILICA GEL (g) 12.3		
AGENCY CONTACT Jarod Fisher	START TIME 15:58	STOP TIME 21:30	TOTAL Vic 32.3		

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
31	186		0.06	903.2				66	82	81	2.0	
32	192		0.06	904.0				64	82	82	2.0	
33	198		0.06	904.7				64	84	82	2.0	
34	204		0.06	905.5				65	83	82	2.0	
35	210		0.06	906.3				67	83	82	2.0	
36	216		0.06	907.1	↓			66	83	82	2.0	
37	222		0.06	908.0	208			67	83	83	2.0	
38	228		0.06	908.8				68	83	83	2.0	
39	234		0.06	909.6				67	83	83	2.0	
40	240		0.06	910.5				67	83	83	2.0	
41	246		0.06	911.3				67	83	82	2.0	
42	252		0.06	912.2				68	85	84	2.0	
43	258		0.06	913.0				67	86	87	2.0	
44	264		0.06	913.5				67	88	88	2.0	
45	270		0.06	914.6				67	88	87	2.0	
46	276		0.06	916.5				66	88	88	2.0	
47	282		0.06	916.3				65	87	87	2.0	
48	288		0.06	917.17	↓			65	87	87	2.0	
				38.894								

AIR TEST PROFESSIONALS FIELD DATA SHEET Metals TESTING EPA METHOD 1-4/29 RUN 2 PAGE 1 of 2

CLIENT Nucor Steel	METER BOX ID A-2	K FACTOR 52.5	DUCT DIMENSIONS (in.)		Diagram of Test Location
LOCATION Crawfordsville, IN	METER γ 0.99	METER ΔH@ 1.829	PORT LENGTH (in.) 0.0		
UNIT PPPF Baghouse	PITOT C_p 0.84	PROBE LINER Teflon	FILTER ID R2.	SILICA ID #2	
DATE 05-21-04	PROJECT #	PROBE ID 3'B	NOZZLE ID 0.50"	TEDLAR BAG ID	
METER OPERATOR Carlos Brown	BAROMETRIC 30.04	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2	
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)			CO_2	
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm) 0.000	@ (in. Hg) 12"	H_2O (mL) 22.0		
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 9"	SILICA GEL (g) 8.2		
AGENCY CONTACT	START TIME 0717	STOP TIME 1214	TOTAL Vic 30.2		

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				917.32								
1	6	0.00115	0.060	918.1	212			66	80	81	2.0	
2	12		0.06	918.9				66	81	81	2.0	
3	18		0.06	919.7				65	81	81	2.0	
4	24		0.06	920.5				64	82	81	2.0	
5	30		0.06	921.2				64	82	81	2.0	
6	36		0.06	922.0				63	83	82	2.0	
7	42		0.06	922.8				64	83	83	2.0	
8	48		0.06	923.6				64	85	84	2.0	
9	54		0.06	924.4				64	86	84	2.0	
10	60		0.06	925.2				65	87	85	2.0	
11	66		0.06	926.0				65	88	86	2.0	
12	72		0.06	926.8	↓			66	89	86	2.0	
13	78		0.06	927.6	198			66	90	86	2.0	
14	84		0.06	928.4				67	90	88	2.0	
15	90		0.06	929.2				68	90	89	2.0	
16	96		0.06	930.0				62	91	90	2.0	
17	102		0.06	930.8				62	91	90	2.0	
18	108		0.06	931.6				63	91	90	2.0	
19	114		0.06	932.3				63	92	91	2.0	
20	120		0.06	933.4				63	92	91	2.0	
21	126		0.06	934.5				64	93	91	2.0	
22	132		0.06	935.4				64	93	92	2.0	
23	138		0.06	936.2				65	93	92	2.0	
24	144		0.06	937.0	↓			66	93	92	2.0	
25	150		0.06	937.8	229			66	94	93	2.0	
26	156		0.06	938.6				66	94	93	2.0	
27	162		0.06	939.4				67	94	94	2.0	
28	168		0.06	940.2				67	95	94	2.0	
29	174		0.06	941.1				67	95	94	2.0	
30	180		0.06	942.0				68	96	95	2.0	

AIR TEST PROFESSIONALS FIELD DATA SHEET METALS TESTING EPA METHOD 1-4/29 RUN 2 PAGE 2 OF 2

CLIENT Nucor Steel	METER BOX ID A-2	K FACTOR	DUCT DIMENSIONS (in.)			Diagram of Test Location
LOCATION Crawfordsville, IN	METER γ 0.99	METER ΔH@ 1.829	PORT LENGTH (in.) 0.0			
UNIT DRFF Baghouse	PITOT C_p 0.84	PROBE LINER Teflon	FILTER ID R2	SILICA ID		
DATE / PROJECT #	PROBE ID 3'-B	NOZZLE ID 0.5"	TEDLAR BAG ID			
METER OPERATOR Carlos Brown	BAROMETRIC 30.04	AMBIENT TEMP (°F)	PITOT CHECK PASS ☐ FAIL ☐	O_2		
PROBE OPERATOR	STATIC PRESSURE (in. H_2O)			CO_2		
VISIBLE EMISSIONS READER	LEAK RATE BEFORE (cfm)	@ (in. Hg)	H_2O (mL) 22.0			
CLIENT CONTACT	LEAK RATE AFTER (cfm) 0.000	@ (in. Hg) 9"	SILICA GEL (g) 8.2			
AGENCY CONTACT	START TIME 0717	STOP TIME 1214	TOTAL Vic 30.2			

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
31	186	0.00115	0.06	942.9				66	97	96	2.0	
32	192		0.06	943.8				64	97	97	2.0	
33	198		0.06	944.6				64	98	97	2.0	
34	204		0.06	945.5				64	98	97	2.0	
35	210		0.06	946.3				65	98	98	2.0	
36	216		0.06	947.4				65	99	98	2.0	
37	222		0.06	948.2	188			65	100	99	2.0	
38	228		0.06	949.2				66	100	99	2.0	
39	234		0.06	950.0				66	100	99	2.0	
40	240		0.06	950.8				67	100	100	2.0	
41	246		0.06	951.6				68	101	101	2.0	
42	252		0.06	952.4				62	101	101	2.0	
43	258		0.06	953.6				63	102	102	2.0	
44	264		0.06	954.4				60	102	102	2.0	
45	270		0.06	955.2				62	102	102	2.0	
46	276		0.06	956.0				64	102	102	2.0	
47	282		0.06	956.8				65	102	102	2.0	
48	288		0.06	958.470				66	103	102	2.0	

AIR TEST PROFESSIONALS FIELD DATA SHEET METALS TESTING EPA METHOD 29 RUN 3 PAGE 1 of 2

CLIENT	NUCOR STEEL	METER BOX ID	A-2	K FACTOR	52.5	DUCT DIMENSIONS (in.)	Diagram of Test Location
LOCATION	CRAWFORDSVILLE, IN	METER γ	0.99	METER ΔH@	1.829	PORT LENGTH (in.) 0"	
UNIT	PPFF BAGHOUSE	PITOT C_P	0.84	PROBE LINER	TEFLON	FILTER ID R3	SILICA ID #3
DATE	05-21-04	PROBE ID	3'-B	NOZZLE ID	0.50"	TEDLAR BAG ID	
METER OPERATOR	ANDREW YOUNG	BAROMETRIC	30.08"	AMBIENT TEMP (°F)		PITOT CHECK	O_2 19.0
PROBE OPERATOR		STATIC PRESSURE (in. H_2O)				PASS ☐ FAIL ☐	CO_2 0.0
VISIBLE EMISSIONS READER		LEAK RATE BEFORE (cfm)	0.000	@ (in. Hg)	11"	H_2O (mL)	24.0
CLIENT CONTACT		LEAK RATE AFTER (cfm)	0.000	@ (in. Hg)	8"	SILICA GEL (g)	7.7
AGENCY CONTACT		START TIME	1307	STOP TIME	17:54	TOTAL Vic	31.7

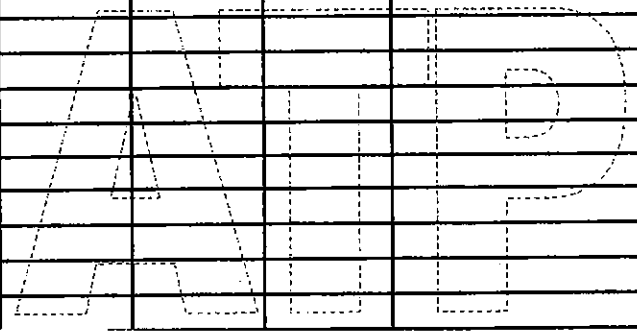
Traverse Point Number	Min/Point 6 Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³)	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
				958.730								
1	6	0.00115	0.06	959.6	202			67	102	102	2	
2	12		0.06	960.4				67	102	102	2	
3	18		0.06	961.3				66	102	102	2	
4	24		0.06	962.1				67	102	102	2	
5	30		0.06	962.9				67	102	102	2	
6	36		0.06	963.8				66	102	102	2	
7	42		0.06	964.6				66	102	102	2	
8	48		0.06	965.4				66	102	102	2	
9	54		0.06	966.3				66	102	102	2	
10	60		0.06	967.1				66	102	103	2	
11	66		0.06	967.9				66	103	103	2	
12	72		0.06	968.8				65	103	103	2	
13	78		0.06	969.6	214			65	103	103	2	
14	84		0.06	970.4				65	102	102	2	
15	90		0.06	971.3				65	104	103	2	
16	96		0.06	972.1				66	104	103	2	
17	102		0.06	972.9				66	104	103	2	
18	108		0.06	973.8				66	104	103	2	
19	114		0.06	974.6				66	106	103	2	
20	120		0.06	975.5				67	106	103	2	
21	126		0.06	976.3				67	106	105	2	
22	132		0.06	977.1				66	106	105	2	
23	138		0.06	977.9				66	106	105	2	
24	144		0.06	978.8				63	106	105	2	
25	150		0.06	979.6	201			61	104	105	2	
26	156		0.06	980.5				61	104	105	2	
27	162		0.06	981.3				62	105	105	2	
28	168		0.06	982.1				62	105	105	2	
29	174		0.06	982.9				63	104	104	2	
30	180		0.06	983.8				63	104	104	2	

AIR TEST PROFESSIONALS FIELD DATA SHEET METALS TESTING EPA METHOD 29 RUN 3 PAGE 2 2

CLIENT	NUCOR STEEL	METER BOX ID	A-2	K FACTOR	32.5	DUCT DIMENSIONS (in.)
LOCATION	CRAWFORDSVILLE IN	METER γ	0.99	METER ΔH@	1.829	PORT LENGTH (in.) 0"
UNIT	PPFF BAGHOUSE	PITOT C_p	0.84	PROBE LINER	TEFLON	FILTER ID R3 / SILICA ID
DATE	5-21-04 / PROJECT #	PROBE ID	3'-B	NOZZLE ID	0.50"	TEDLAR BAG ID
METER OPERATOR	A. YOUNG	BAROMETRIC	30.08	AMBIENT TEMP (°F)		PITOT CHECK PASS ☐ FAIL ☐ / O_2
PROBE OPERATOR		STATIC PRESSURE (in. H_2O)	(PosT)			CO_2
VISIBLE EMISSIONS READER		LEAK RATE BEFORE (cfm)	0.060	@ (in. Hg)	8"	H_2O (mL) 24.0
CLIENT CONTACT		LEAK RATE AFTER (cfm)	—	@ (in. Hg)	—	SILICA GEL (g) 7.7
AGENCY CONTACT		START TIME	1307	STOP TIME	17:54	TOTAL Vic 31.7

Diagram of Test Location

Traverse Point Number	Min/Point Elapsed Time	Velocity Head ΔP's (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Sample Volume Vm (ft³) 980.80	Stack Temp. Ts (°F)	Probe Tp (°F) Set Points	Filter Tf (°F) Set Points	Cond. Temp. Tc (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
31	186	0.00115	0.06	984.6				64	103	103	2	
32	192		0.06	985.5				66	103	103	2	
33	198		0.06	986.3				67	103	103	2	
34	204		0.06	987.1				66	103	102	2	
35	210		0.06	987.9				66	102	102	2	
36	216		0.06	988.8				65	102	102	2	
37	222		0.06	989.6	214			65	102	102	2	
38	228		0.06	990.5				66	102	102	2	
39	234		0.06	991.3				66	102	102	2	
40	240		0.06	992.2				67	102	103	2	
41	246		0.06	993.0				67	102	102	2	
42	252		0.06	993.8				64	102	102	2	
43	258		0.06	994.7				66	102	102	2	
44	264		0.06	995.5				64	102	102	2	
45	270		0.06	996.4				63	102	102	2	
46	276		0.06	997.2				63	102	102	2	
47	282		0.06	998.0				64	102	102	2	
48	288		0.06	998.858				62	102	102	2	



Nucor Steel
Crawfordsville, Indiana

Project No. 079

LABORATORY DATA

PARTICULATE WEIGHT SHEET

Source: Nucor Steel – PPFF Baghouse

Date:		05/19/04	05/21/04	05/21/04
Acetone	**Blank**	**1**	**2**	**3**
Run ID#	A-1	A11	A12	B11
Tare Wt	66.3424	62.6815	63.8495	90.9058
Gross Wt	66.3424	62.6833	63.8497	90.9066
Correction	0.0000	0.0000	0.0000	0.0000
Net Wt	0.0000	0.0018	0.0002	0.0008

Filter		**1**	**2**	**3**
Run ID#		R1	R2	R3
Tare Wt		2.7671	2.6843	2.3875
Gross Wt		2.7773	2.6948	2.3965
Net Wt		0.0102	0.0105	0.0090

Total Gain		**0.0120**	**0.0107**	**0.0098**

Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, IN 46219

Nucor Steel – PPFF Baghouse

PO# 079

Analytical Report

(0604-40)

EPA Method 202

Condensible Particulates

HPLC Analysis

Sulfate

Enthalpy Analytical, Inc.

Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
2202 Ellis Road Durham, NC 27703 - 5518

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)
- This analytical report was prepared in Portable Document Format (.PDF) and contains 57 pages.

Michael Steven Schapira

QA Review Performed by: Michael Steven Schapira

Summary of Results

EPA Method 202 - Condensible Particulate Determination - Data Analysis

Company	ATP, Inc.
Analyst	SLG
Parameters	Method 202
# Samples	3 Runs and 1 Blank

Client #	Nucor Steel
Job #	0604-40
PO #	079
Report Date	6/18/2004

Analysis of Particulate Recovery

Sample ID Number	Run # 1	Run # 2	Run # 3
Organic			
Beaker Number	5500	5484	5501
Final Weight, g	0.9784	0.9735	0.9778
Reweigh, Final, g	0.9782	0.9733	0.9776
Beaker Tare Weight, g	0.9748	0.9701	0.9719
Beaker Tare Reweigh, Initial, g	0.9746	0.9701	0.9718
Solvent Blank, g	0.0010	0.0009	0.0011
MeCl2 FV, mL	220	194	248
Net Organic Catch, mg	2.6	2.3	4.7
Inorganic			
Beaker Number	5517	5512	5511
Final Weight, g	0.9873	0.9877	0.9823
Reweigh, Final, g	0.9871	0.9876	0.9824
Beaker Tare Weight, g	0.9662	0.9649	0.9641
Beaker Tare Reweigh, Initial, g	0.9660	0.9646	0.9640
Water Blank, g	0.0004	0.0004	0.0004
Sample Final Volume, mL	474	478	528
Sulfate aliquot, mL	10	10	10
Sulfate aliquot CF	1.02	1.02	1.02
Net Inorganic CF	1.15	1.15	1.15
Net Inorganic, mg	24.5	26.7	21.2
Sulfate Catch, ug	12,496	16,503	10,369
Sulfate Correction, mg	4.4	5.8	3.7
Corrected Inorganic, mg	20.1	20.9	17.6
Condensible Particulate, mg	22.7	23.2	22.3

3.2 ⇒ 0.141

19.5 ⇒ 0.859

Blank Analysis

Sample ID Number	MeCl Blank
Beaker Number	5481
Final Weight, g	0.9660
Reweigh, Final, g	0.9659
Initial Weight, g	0.9658
Reweigh, Initial, g	0.9656
MeCl2 Residue, g	0.0003
MeCl2 Volume, mL	68.0
Max. MeCl2 Residue, g	0.0009

Sample ID Number	H2O Blank
Beaker Number	5514
Final Weight, g	0.9676
Reweigh, Final, g	0.9676
Initial Weight, g	0.9675
Reweigh, Initial, g	0.9673
Water Residue, g	0.0003
Water Volume, mL	388
Max. Water Residue, g	0.0039

Company	ATP, Inc.
Analyst Initials	VKS
Parameters	HPLC Analysis
# Samples	3 runs

Client #	Nucor Steel
Job #	0604-40
PO #	079
Report Date	6/18/2004

Compound	Sample ID / Catch Weight (ug)		
	Run1Pre	***Run2Pre***	***Run3Pre***
Sulfate	12,496	16,503	10,369

Results

Company	ATP, Inc.
Analyst Initials	VKS
Parameters	HPLC Analysis
# Samples	3 runs

Client #	Nucor Steel
Job #	0604-40
PO #	079
Report Date	6/18/2004

MDL 0.100 (ug/mL)
LOQ 0.600 (ug/mL)
Compound Sulfate

Lower Curve Limit 1.23 (ug/mL)
Upper Curve Limit 23.1 (ug/mL)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time # 1	Ret Time # 2	% Diff Ret	Conc # 1	Conc # 2	% Diff Conc	Avg Conc (ug/mL)	Vol (mL)	DF	Catch Weight (ug)	Qual
Run1Pre	030-2801.D	030-2802.D	0604-40A.	9.00	9.00	0.0	13.1	13.3	0.9	13.2	474	2	12,496	
Run2Pre	031-2901.D	031-2902.D	0604-40A.	9.00	9.00	0.1	17.3	17.2	0.1	17.3	478	2	16,503	
Run3Pre	032-3001.D	032-3002.D	0604-40A.	9.00	9.00	0.1	19.7	19.6	0.4	19.6	528	1	10,369	
Lab Blank	027-2501.D	027-2502.D	0604-40A.	NA	NA	NA.	0.100	0.100	NA	0.100	1.00	1	0.100	ND
BS / Sulfate 11	028-2601.D	028-2602.D	0604-40A.	9.00	9.00	0.0	5.60	5.53	0.6	5.56	1.00	1	5.56	
													spike amount (ug)	5.90
													recovery (%)	94.3%

Narrative Summary

Enthalpy Analytical Narrative Summary

Company:	ATP, Inc.
Client #:	Nucor Steel–PPFF Baghouse
PO #	079

Enthalpy #:	0604-40
Analyst:	SLG
Parameters:	EPA Method 202

Custody Craig Mefford of Enthalpy Analytical, Inc. received the samples at 25.0°C on 6/11/04 after being relinquished by Air test Professionals, Inc. Prior to analysis the samples were kept under lock with access only by authorized personnel of Enthalpy Analytical, Inc.

Methodology All samples were analyzed in accordance to the requirements and specifications of EPA Method 202.

Instrumentation All samples were weighed on a Sartorius Model BP 110 S (SN-40707606), certified by Precision Weighing, Inc. through November 4, 2004 (NIST Test # 846895).

Labeling OK

Reporting Notes The inorganic and organic catch weights are adjusted by a blank correction value. A mathematically determined (theoretical) maximum value is calculated and compared with the actual value measured for each blank. The lower of the two values is used as the blank correction value, which is then factored by the sample volume divided by the blank volume, and subtracted from the sample's catch weight.

Reporting Notes None.

Enthalpy Analytical Narrative Summary

Company:	ATP, Inc.
Client #:	Nucor Steel-PPFF Baghouse
PO #:	079

Enthalpy #:	0604-40
Analyst:	VKS
Parameters:	HPLC Sulfate Analysis

Custody Craig Mefford of Enthalpy Analytical, Inc. received the samples at 25.0°C on 6/11/04 after being relinquished by Air Test Professionals, Inc. Prior to analysis the samples were kept under lock with access only by authorized personnel of Enthalpy Analytical, Inc.

Analysis The samples were analyzed for sulfate using a Hewlett-Packard series 1100 High Performance Liquid Chromatograph with a Waters 430 conductivity detector and an Alltech ERIS 1000HP Autosuppressor.

Separation Separation was accomplished by a Dionex IonPac AS14 250 x 4.0 mm analytical column using 8.0 *mM* Na_2CO_3/1.0 *mM* $NaHCO_3$ as the eluent at 1.2 mL per minute. A copy of the analytical method (0604-35A.M) is included.

Before and after sample analysis, a calibration curve was prepared and analyzed.

Sulfate eluted at approximately 9.0 minutes, separated well, and was easily identified.

Blind Spike A QA blind spike was analyzed along with these samples. The analyst did not know the actual concentration. The QA Reviewer added the actual value into the results spreadsheet, and the recovery value was 94.3%.

Quality of Data OK

Reporting Notes None

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, Inc. reports, unless specifically noted otherwise.

- The symbol ***MDL*** represents the Minimum Detection Limit. Below this value the laboratory cannot confim the presence of the analyte of interest reliably.
- The symbol ***LOQ*** represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.
- The symbol ***ND*** following a value indicates a non-detect or analytical result below the MDL.
- The symbol ***J*** following a value indicates an analytical result between the MDL and the LOQ. A J flag indicates that the laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.
- The symbol ***E*** following a value indicates an analytical result exceeding 100% of the highest calibration point.
- The symbol ***DF*** represents a Dilution Factor. This number represents dilutions during the extraction and/or laboratory stages of sample treatment. The analytical result taken from a laboratory instrument is multiplied by the DF to get final results.
- The Sample ID ***MS*** represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. This shows what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix prohibits analysis for the analyte(s).
- The Sample ID ***MSD*** represents a Matrix Spike Duplicate. Prepared in the same manner as an MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times. Most methods performed by Enthalpy do not require analysis of an MSD.
- The Sample ID ***BS*** represents a Blind Spike. A member of the Quality Assurance department has created BS samples for many of the analytes Enthalpy tests for, and only QA and the Enthalpy Analytical ownership have access to the actual values of these samples. The laboratory analyzes them without knowledge of the actual value, and the spreadsheets get completed for these samples solely by the QA group.
- The Sample ID ***LCS*** represents a Laboratory Control Sample. Whenever spikes are prepared for our clients more spikes are prepared than needed. The extras (randomly chosen) are kept in-house at the appropriate temperature conditions. When the spike samples come back from the client for analysis, the LCSs (usually two are saved) are analyzed to confirm that the analyte could be recovered from the media, separate from the spike samples which were used on the project and which may have had issues caused during collection and/or transport.
- **Significant Figures**: Where the reported value is much greater than unity (1.00) in the units expressed (specifically values of 1,000 or greater), the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits reported, but no confidence should be placed on more than three significant digits.

Sample Chromatograms

0604-40

```
Injection Date  : 6/16/2004 1:48:04 AM          Seq. Line :  28
Sample Name     : Run1Pre*2                     Location : Vial 30
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 1:46:38 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
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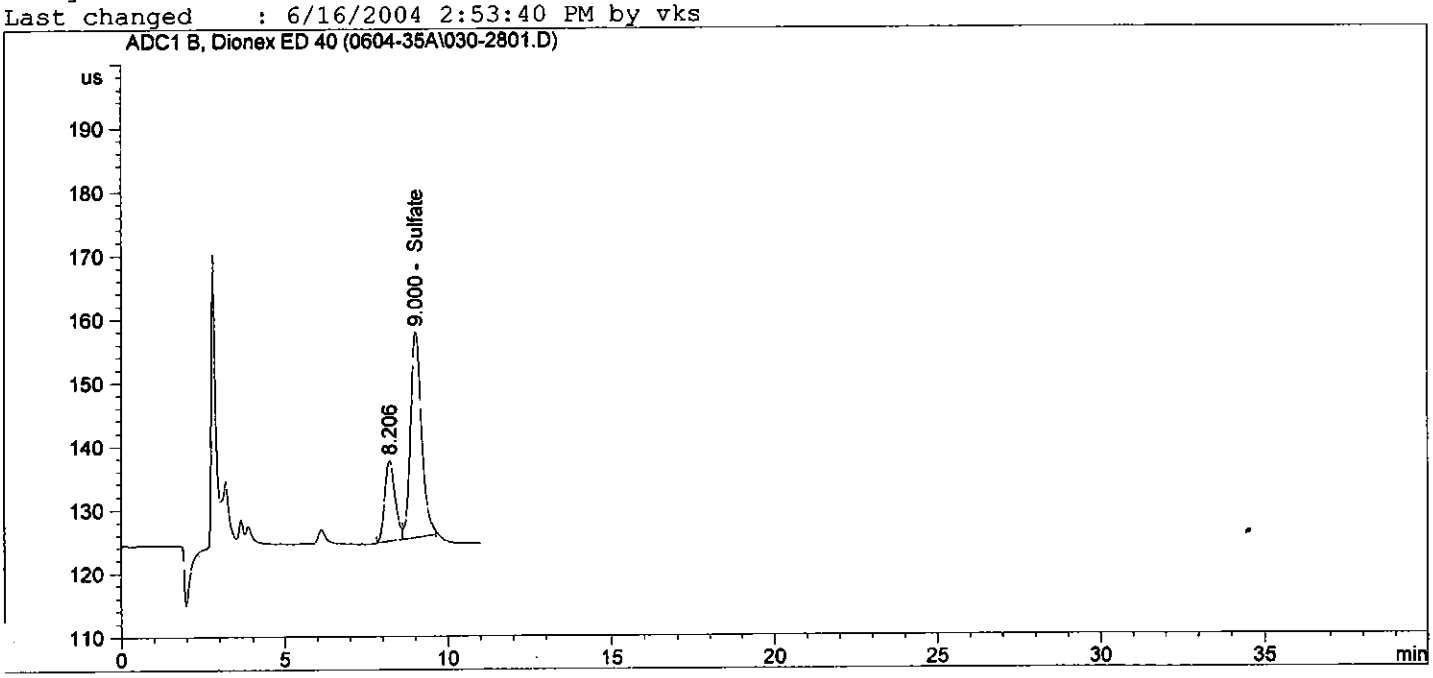


External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.000 VB      763.99048 1.71064e-2   13.06911     Sulfate

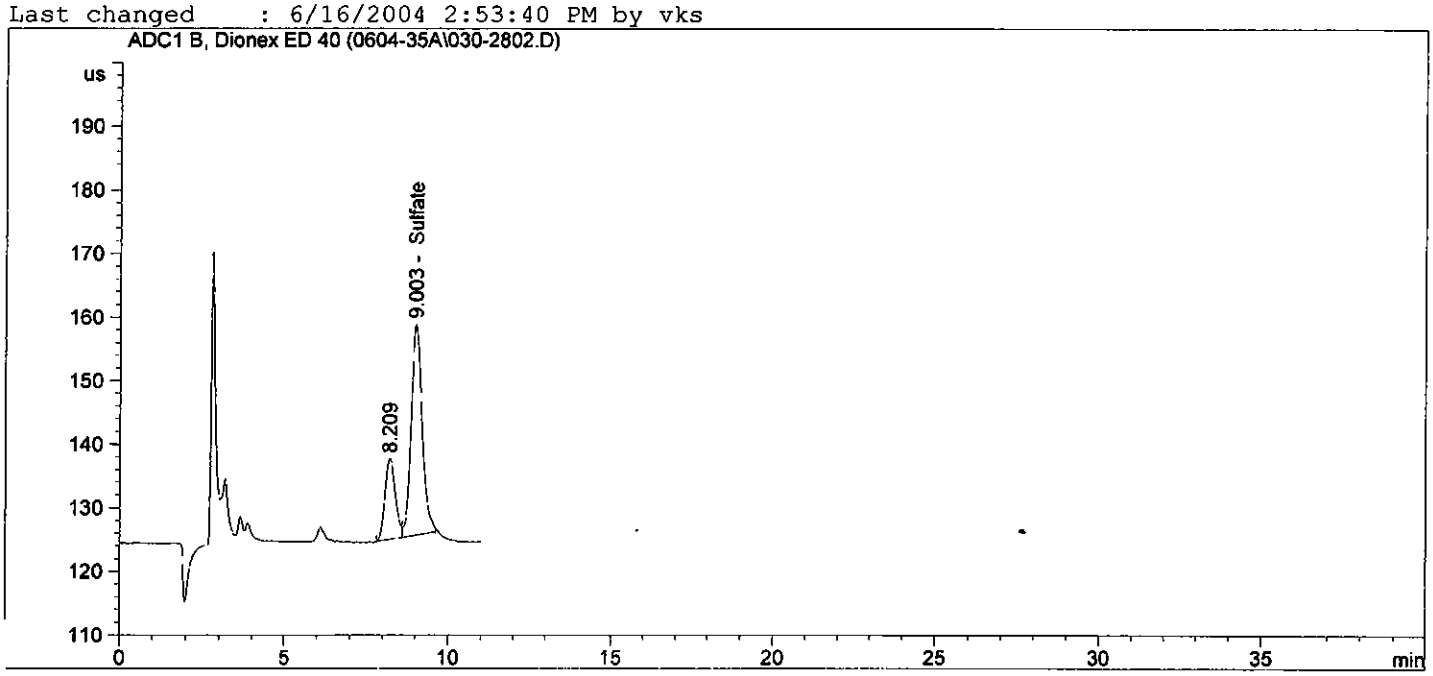
Totals :                                13.06911

 Results obtained with enhanced integrator!
```

*** End of Report ***

0604-40

```
==========================================================================
Injection Date  : 6/16/2004 2:00:45 AM          Seq. Line :  28
Sample Name     : Run1Pre*2                      Location : Vial 30
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 2:00:59 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

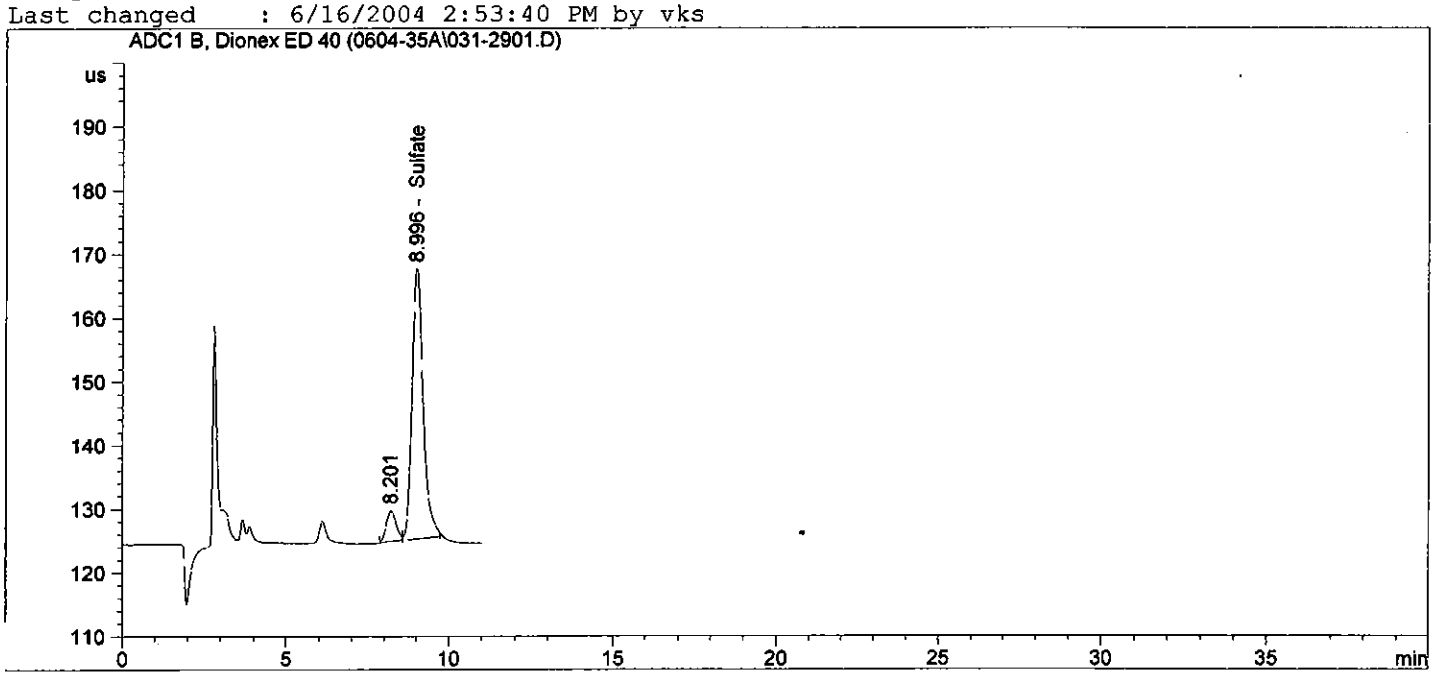
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.003 VB      777.22644 1.71039e-2   13.29363    Sulfate

Totals :                               13.29363

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

0604-40

```
Injection Date  : 6/16/2004 2:13:24 AM          Seq. Line :  29
Sample Name     : Run2Pre*2                     Location : Vial 31
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 2:12:02 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

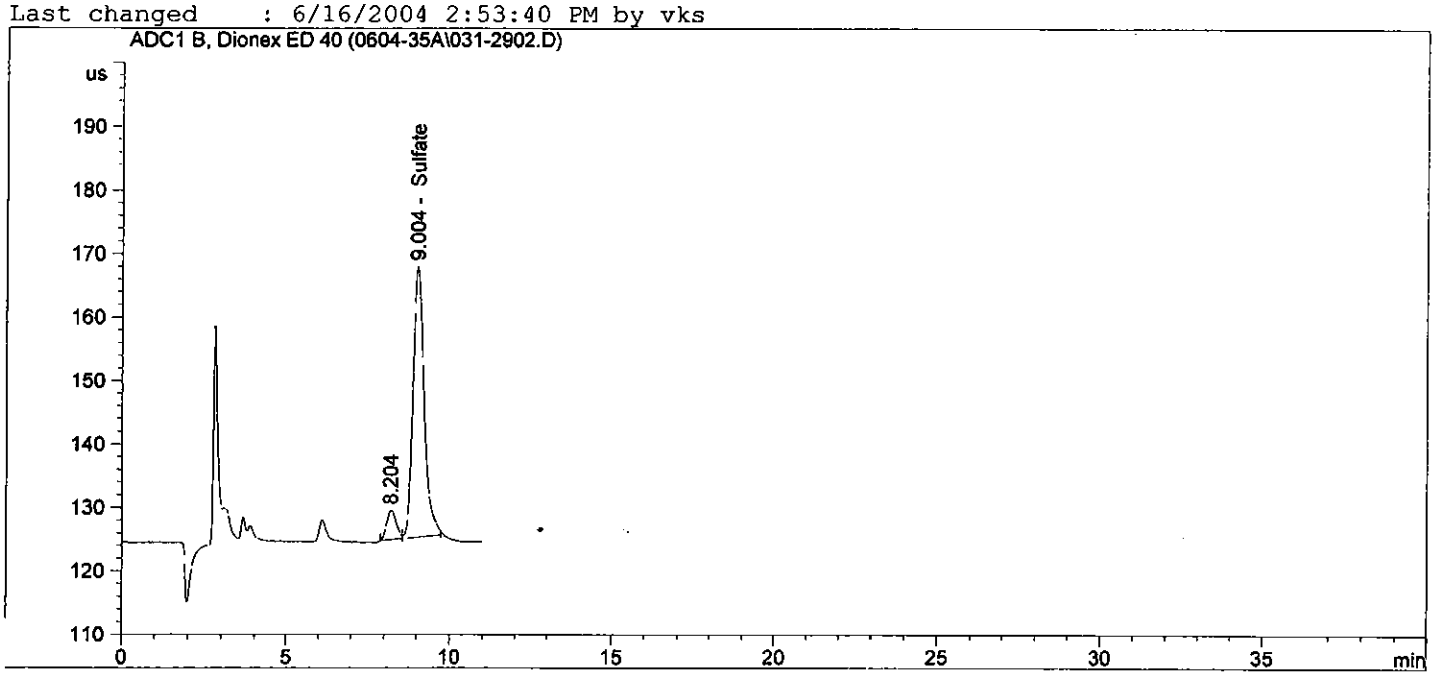
RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
8.996	VB	1012.27026	1.70711e-2	17.28061		Sulfate
Totals :				17.28061		

Results obtained with enhanced integrator!

*** End of Report ***

0604-40

```
==========================================================================
Injection Date  : 6/16/2004 2:26:04 AM          Seq. Line :  29
Sample Name     : Run2Pre*2                      Location : Vial 31
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 2:24:40 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.004 VB     1010.14417 1.70714e-2   17.24454     Sulfate

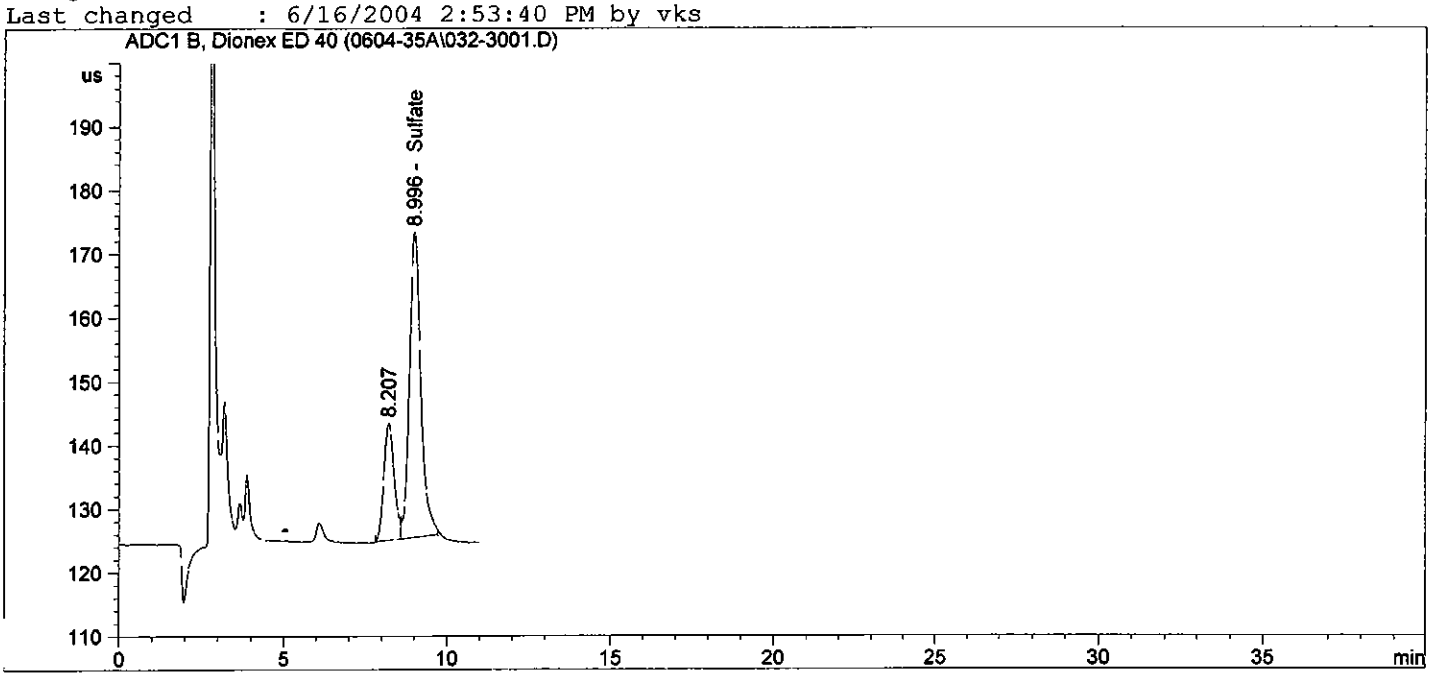
Totals :                               17.24454

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

Data File I:\LC2004Q2\gonzo\jun\data\0604-35A\032-3001.D Sample Name: Run3Pre

0604-40

```
==========================================================================
Injection Date  : 6/16/2004 2:38:43 AM          Seq. Line :  30
Sample Name     : Run3Pre                        Location : Vial 32
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 2:37:21 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

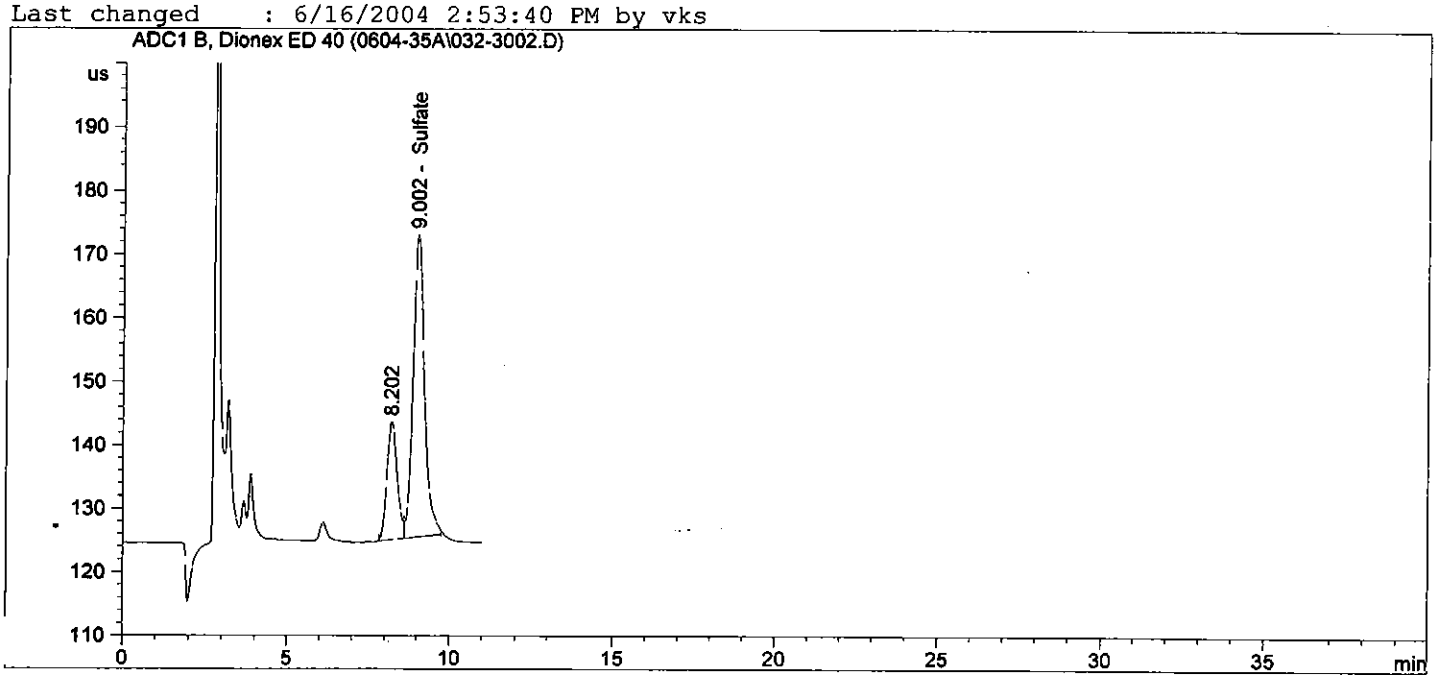
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.996 VB     1155.48413 1.70577e-2   19.70990     Sulfate

Totals :                                19.70990

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

0604-40

```
Injection Date  : 6/16/2004 2:51:22 AM          Seq. Line :  30
Sample Name     : Run3Pre                       Location : Vial 32
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 2:49:59 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.002 VB     1147.12341 1.70584e-2   19.56808     Sulfate

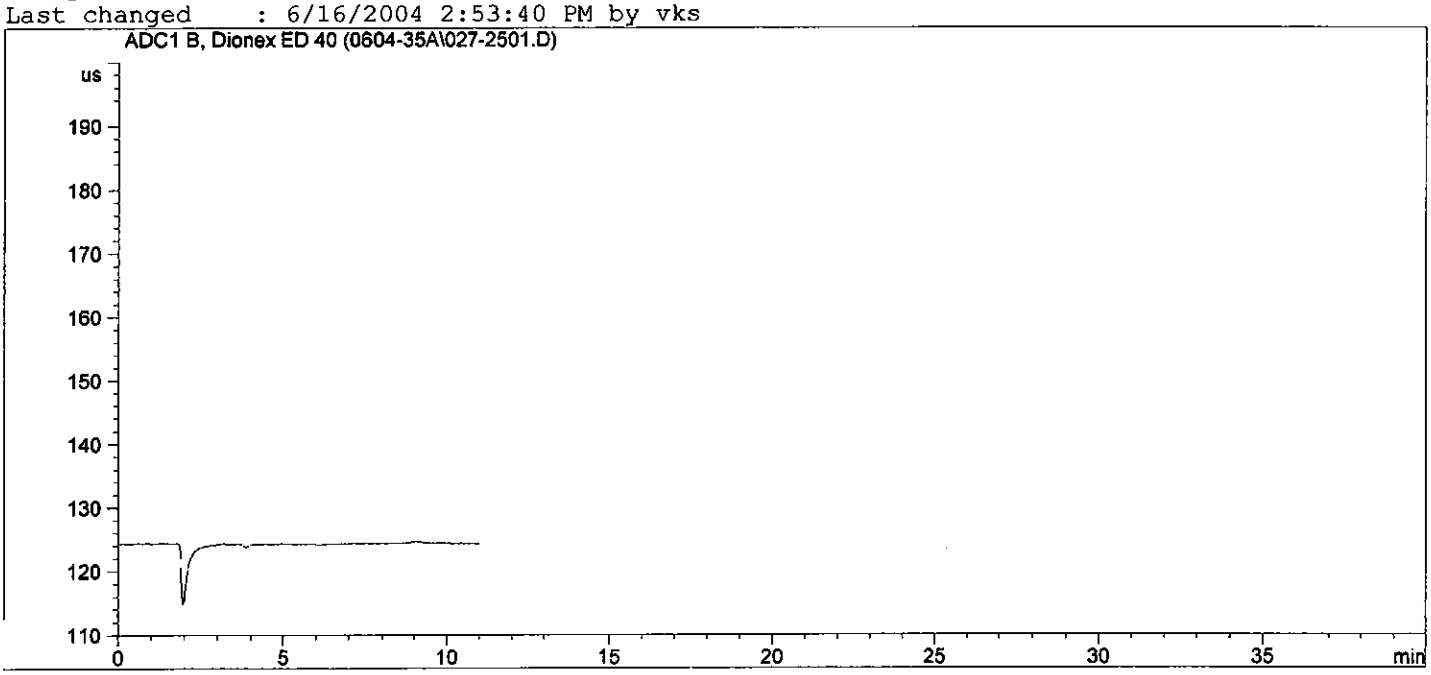
Totals :                                19.56808

 Results obtained with enhanced integrator!
```

*** End of Report ***

H2O

```
==========================================================================
Injection Date  : 6/16/2004 12:31:58 AM          Seq. Line :  25
Sample Name     : LB                              Location : Vial 27
 cq. Operator   : vks                                 Inj :   1
Acq. Instrument : Gonzo                         Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:30:36 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.989            -          -          -          Sulfate

Totals :                                 0.00000

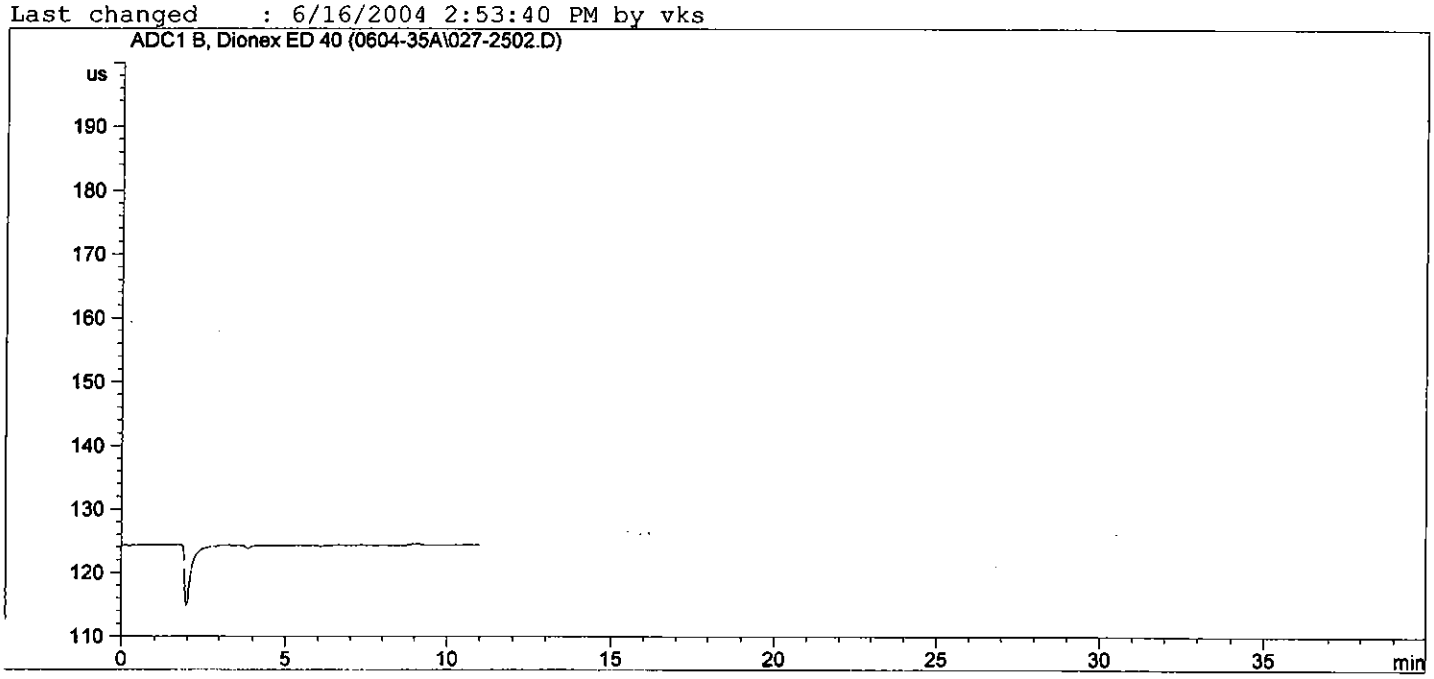
 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
```

H2O

```
==========================================================================
Injection Date  : 6/16/2004 12:44:36 AM          Seq. Line :  25
Sample Name     : LB                              Location : Vial 27
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                         Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:43:14 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.989           -          -          -         Sulfate

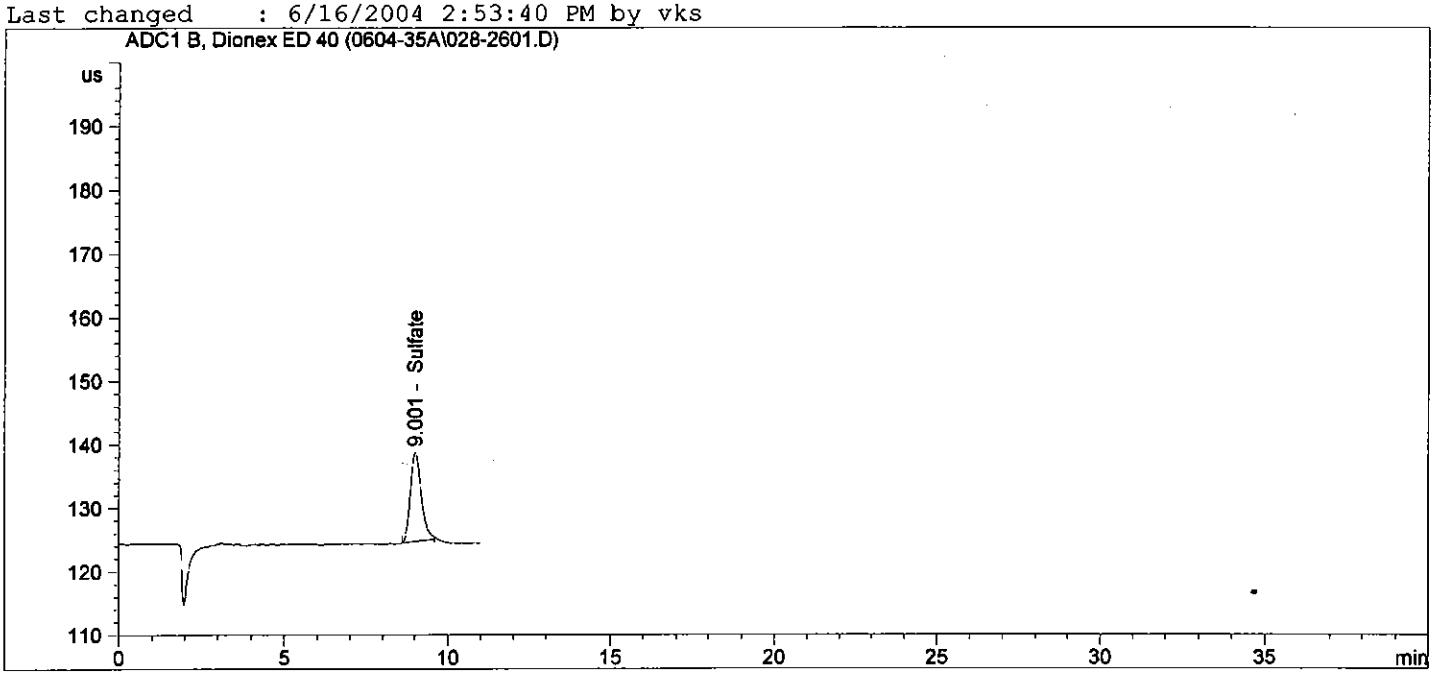
Totals :                                0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
```

```
Injection Date  : 6/16/2004 12:57:15 AM          Seq. Line :  26
Sample Name     : BS/Sulfate11                    Location : Vial 28
Acq. Operator   : vks                                Inj :   1
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:55:53 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

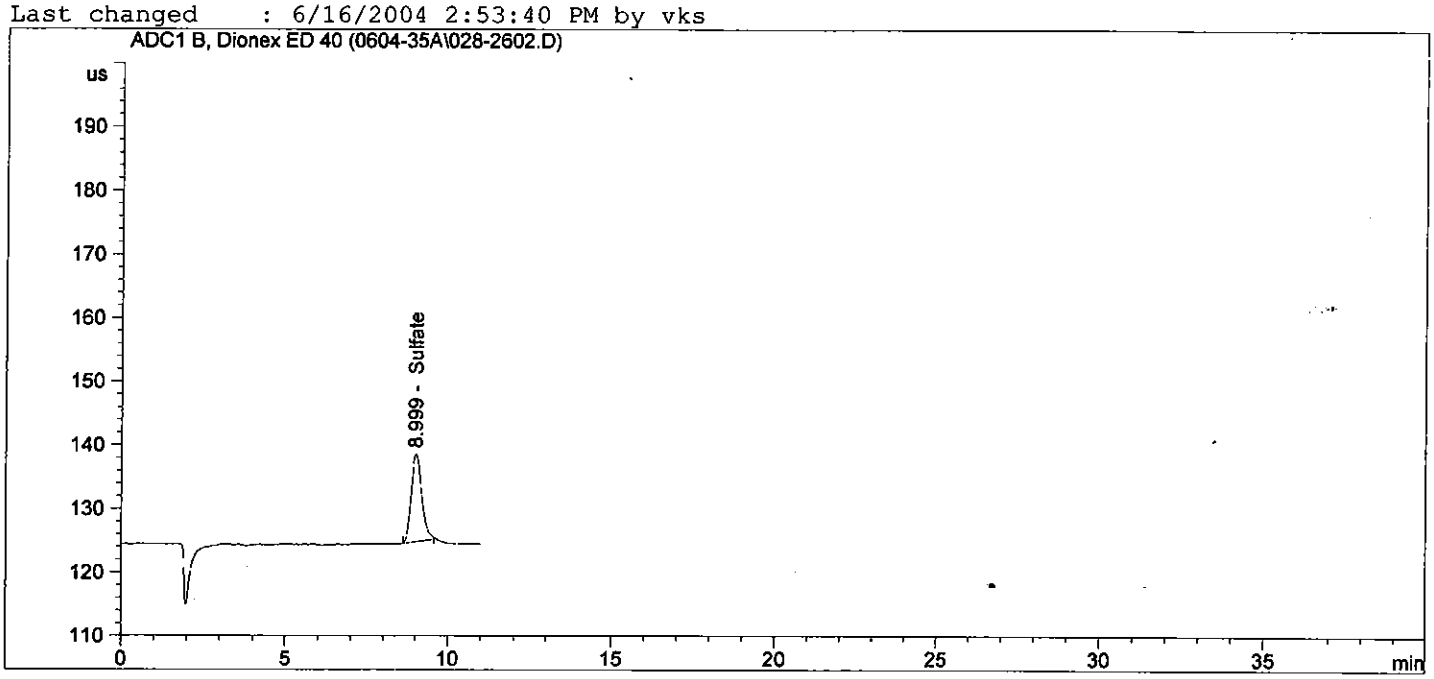
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.001 BB      323.51907 1.73020e-2    5.59753    Sulfate

Totals :                                5.59753

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 1:09:57 AM          Seq. Line :  26
Sample Name     : BS/Sulfate11                  Location : Vial 28
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                     Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 1:08:33 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.999 BB      319.40533 1.73064e-2    5.52775     Sulfate

Totals :                                5.52775

 Results obtained with enhanced integrator!
```

*** End of Report ***

Curve(s)/QA Point(s) Chromatograms

Method Information

Dionex IonPac AS-14A 4-mm analytical (4x250mm) column.
Flow rate 1.2 mL/min

ANALOG DIGITAL CONVERTER

	Signal 1
Description:	Waters 430
Source:	Signal
Unit:	uS
Units/Volt:	1000.000
Peakwidth (Data Rate):	0.027 Min (10.00 Hz)
Stop Time:	No Limit
Data Storage:	Partial:
Start data:	0.01 Min
Stop data:	0.01 Min

1100 Quaternary Pump 1

'ontrol

Column Flow	:	1.200 ml/min
Stoptime	:	11.00 min
Posttime	:	Off

Solvents

Solvent A	:	0.0 % ( )
Solvent B	:	0.0 % ( )
Solvent C	:	100.0 % (8.0mM Na2CO3/1.0mM NaHCO3)
Solvent D	:	Off

PressureLimits

Minimum Pressure	:	0 bar
Maximum Pressure	:	400 bar

Auxiliary

Maximal Flow Ramp	:	100.00 ml/min^2
Primary Channel	:	Auto
Compressibility	:	83*10^-6/bar
Minimal Stroke	:	Auto

Store Parameters

Store Ratio A	:	Yes
Store Ratio B	:	Yes
Store Ratio C	:	Yes
Store Ratio D	:	Yes
Store Flow	:	Yes
Store Pressure	:	Yes

'gilent 1100 Contacts Option

Contact 1	:	Open
Contact 2	:	Open
Contact 3	:	Open
Contact 4	:	Open

Agilent 1100 Autosampler 1

Injection

Injection Mode	:	Needle Wash
Injector volume	:	25.0 µl
Wash Vial	:	100

Auxiliary

Drawspeed	:	100 µl/min
Ejectspeed	:	1000 µl/min
Draw position	:	2.0 mm

Time

Stoptime	:	As Pump
Posttime	:	Off

Agilent 1100 Column Thermostat 1

Temperature settings

Left temperature	:	30.0°C
Right temperature	:	Same as left
Enable analysis	:	When Temp. is within setpoint +/- 0.8°C
Store left temperature	:	No
Store right temperature	:	No

Time

Stoptime	:	As pump
Posttime	:	Off

Column Switching Valve : Column 1

Method I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M

Calibration Table

Calib. Data Modified : Wednesday, June 16, 2004 2:51:47 PM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 5.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 7.000 %
Abs. Non-ref. Window : 0.000 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Included
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: No Update

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

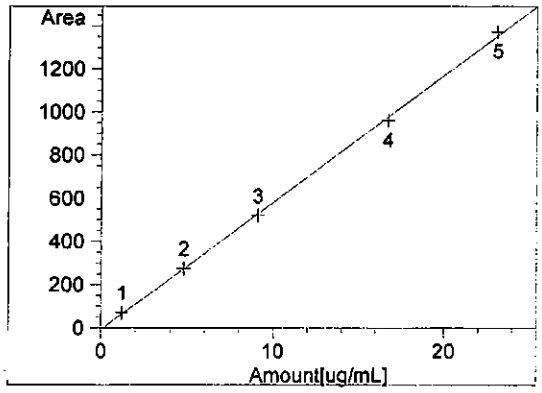
Signal 1: ADC1 B, Dionex ED 40

RetTime [min]	Sig	Lvl	Amount [ug/mL]	Area	Amt/Area	Ref Grp	Name
8.989	1	1	1.23000	71.19956	1.72754e-2		Sulfate
		2	4.76000	274.04866	1.73692e-2		
		3	9.09000	519.38173	1.75016e-2		
		4	16.70000	959.28326	1.74088e-2		
		5	23.10000	1372.59271	1.68295e-2		

Peak Sum Table

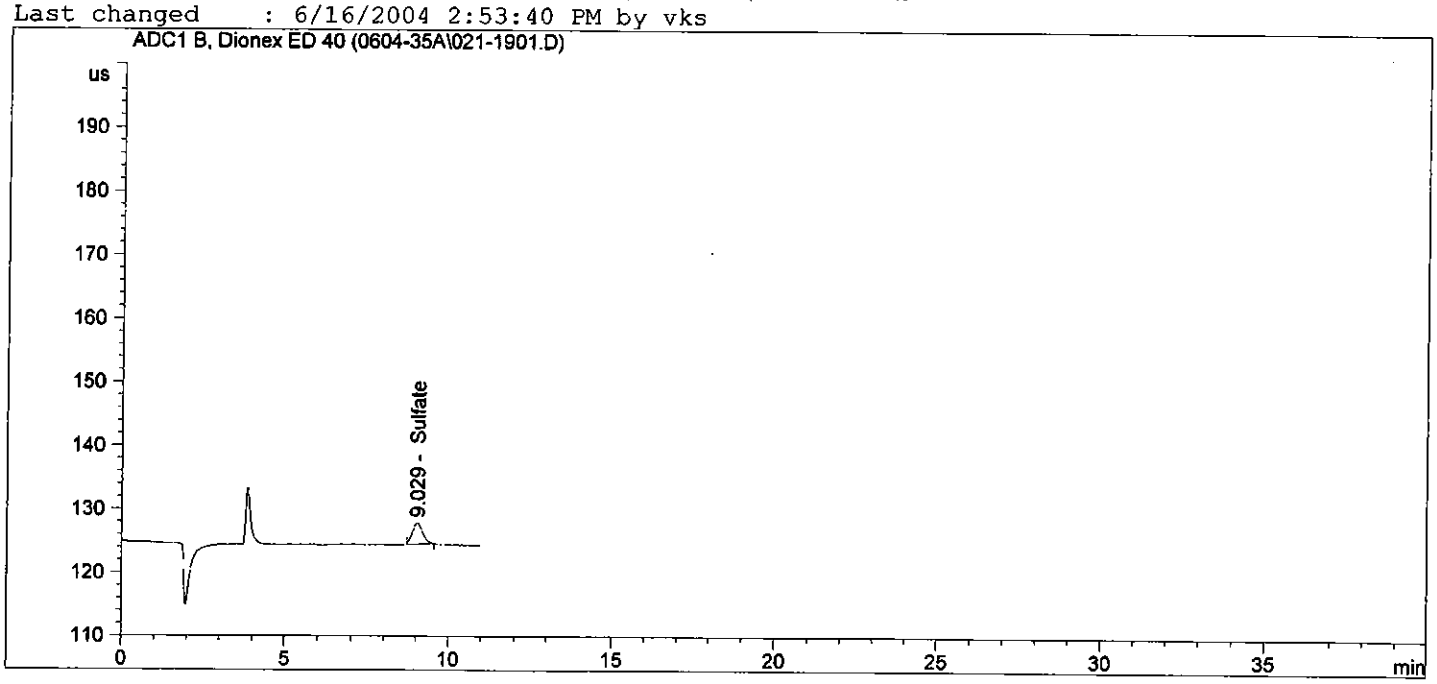
No Entries in table

Calibration Curves



Sulfate at exp. RT: 8.989
ADC1 B, Dionex ED 40
Correlation: 0.99972
Residual Std. Dev.: 14.30564
Formula: y = mx + b
m: 58.95287
b: -6.47129
x: Amount[ug/mL]
y: Area

```
Injection Date  : 6/15/2004 9:59:48 PM          Seq. Line :  19
Sample Name     : Standard 1-H2O                 Location : Vial 21
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 9:58:26 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

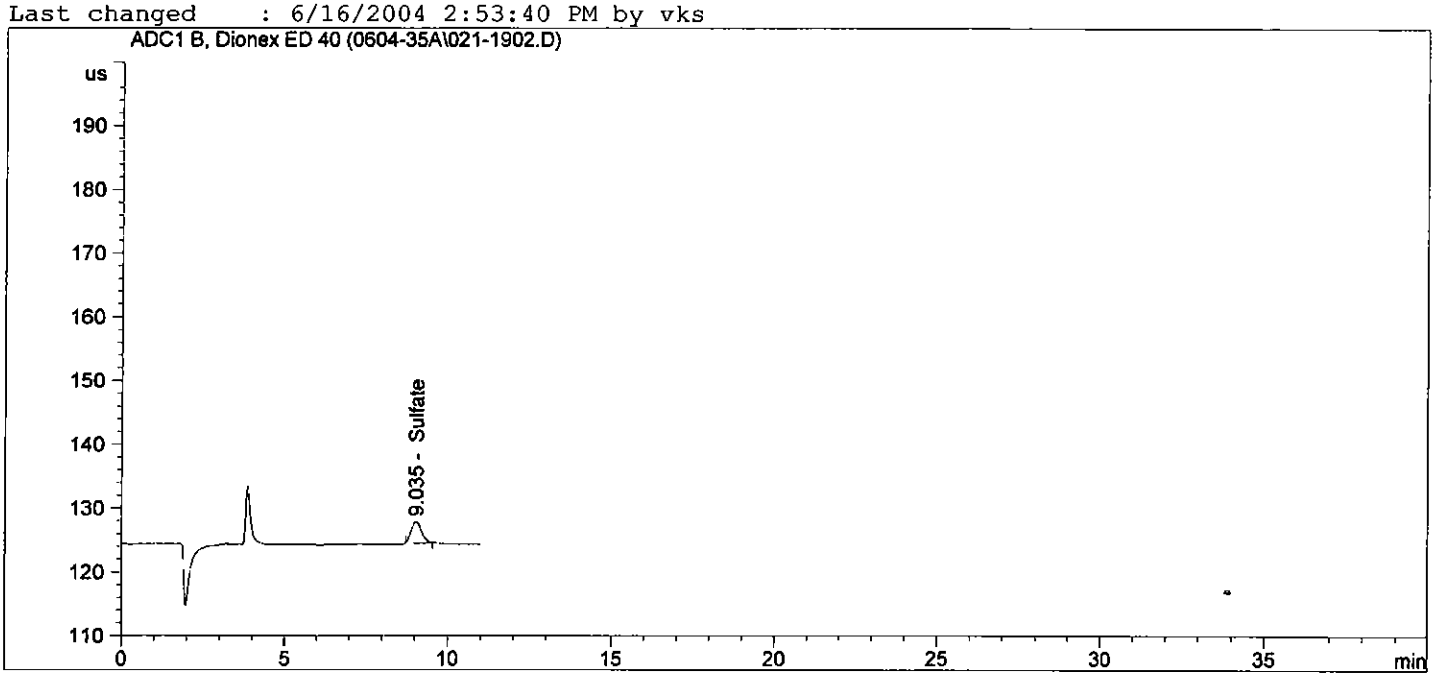
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.029 BB       73.00224 1.84664e-2    1.34809     Sulfate

Totals :                                1.34809

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/15/2004 10:12:33 PM          Seq. Line :  19
Sample Name     : Standard 1-H2O                  Location : Vial 21
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 10:11:09 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

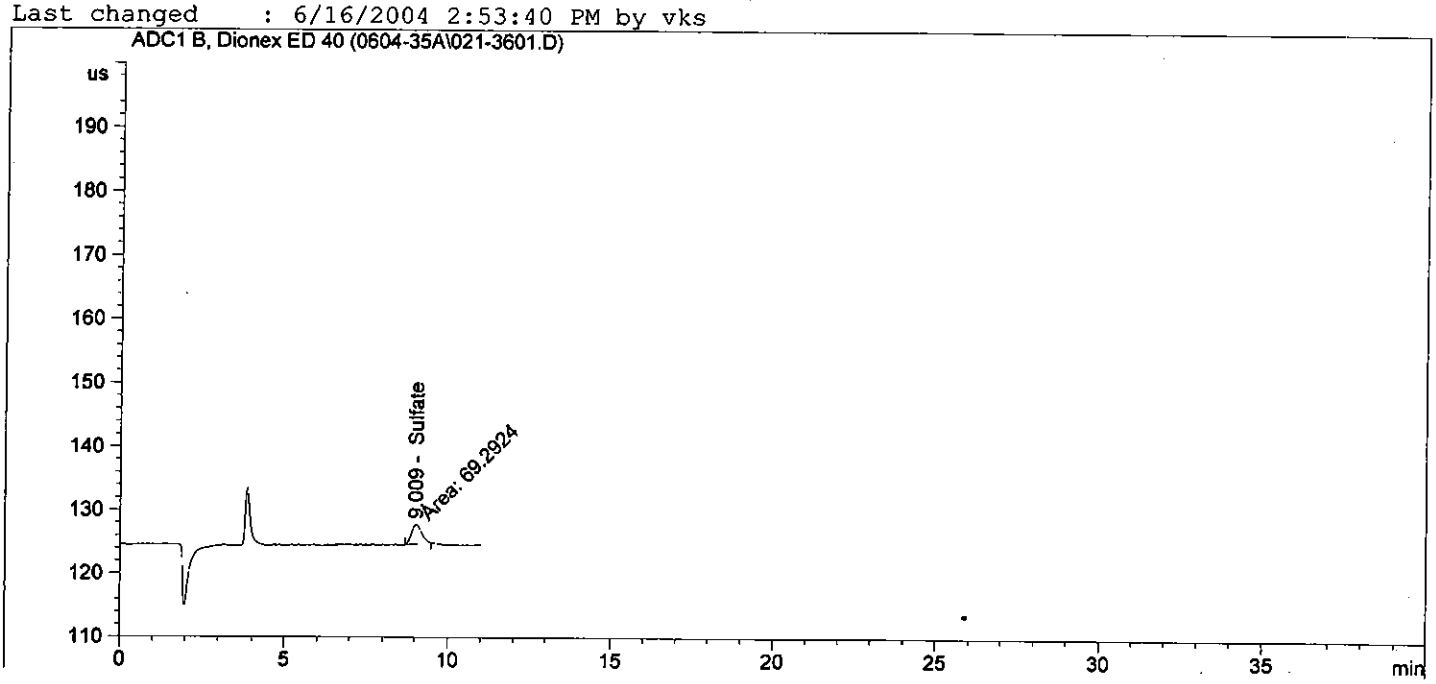
RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
9.035	BB	73.17904	1.84627e-2	1.35108		Sulfate

Totals : 1.35108

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 6/16/2004 5:10:42 AM          Seq. Line :  36
Sample Name     : Standard 1-H2O                 Location : Vial 21
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 5:09:17 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

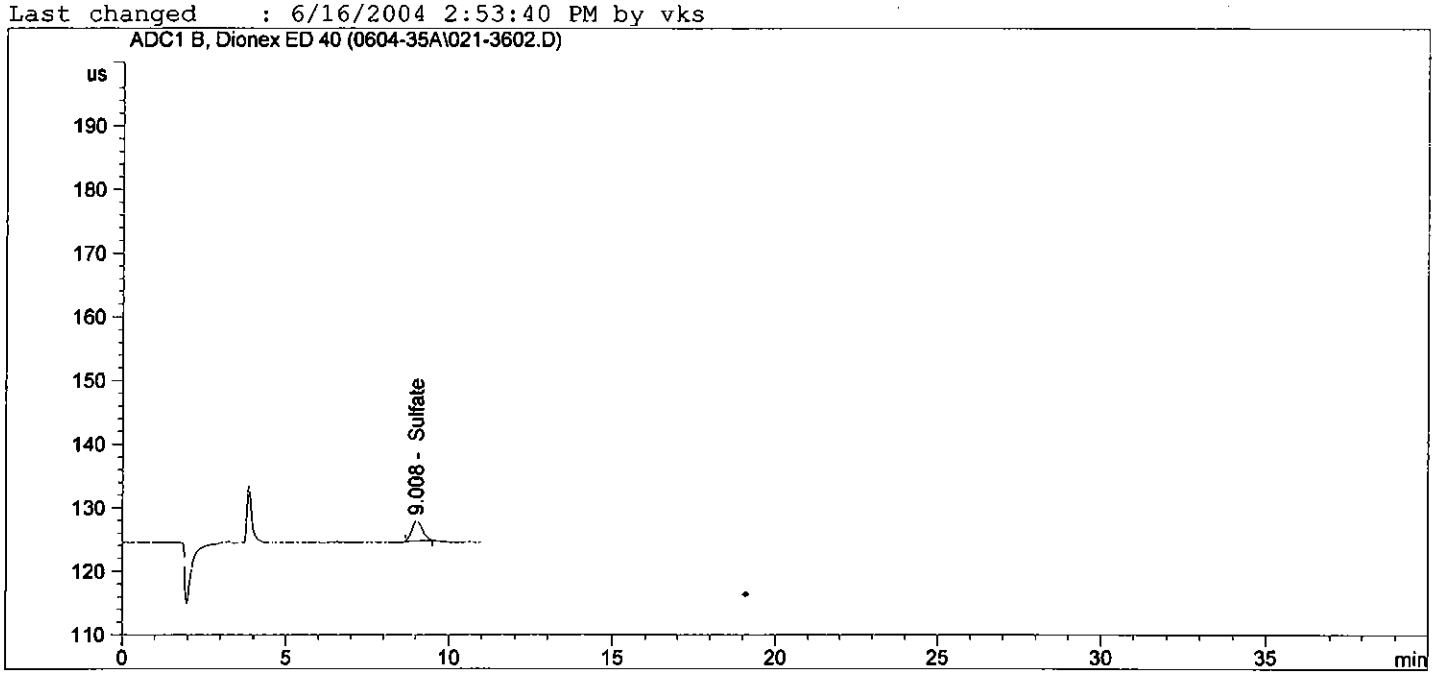
Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
9.009	MF	69.29236	1.85469e-2	1.28516		Sulfate Manual Integration (VKS)
Totals :				1.28516		

```
 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 5:23:24 AM          Seq. Line :  36
Sample Name     : Standard 1-H2O                 Location : Vial 21
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 5:21:59 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

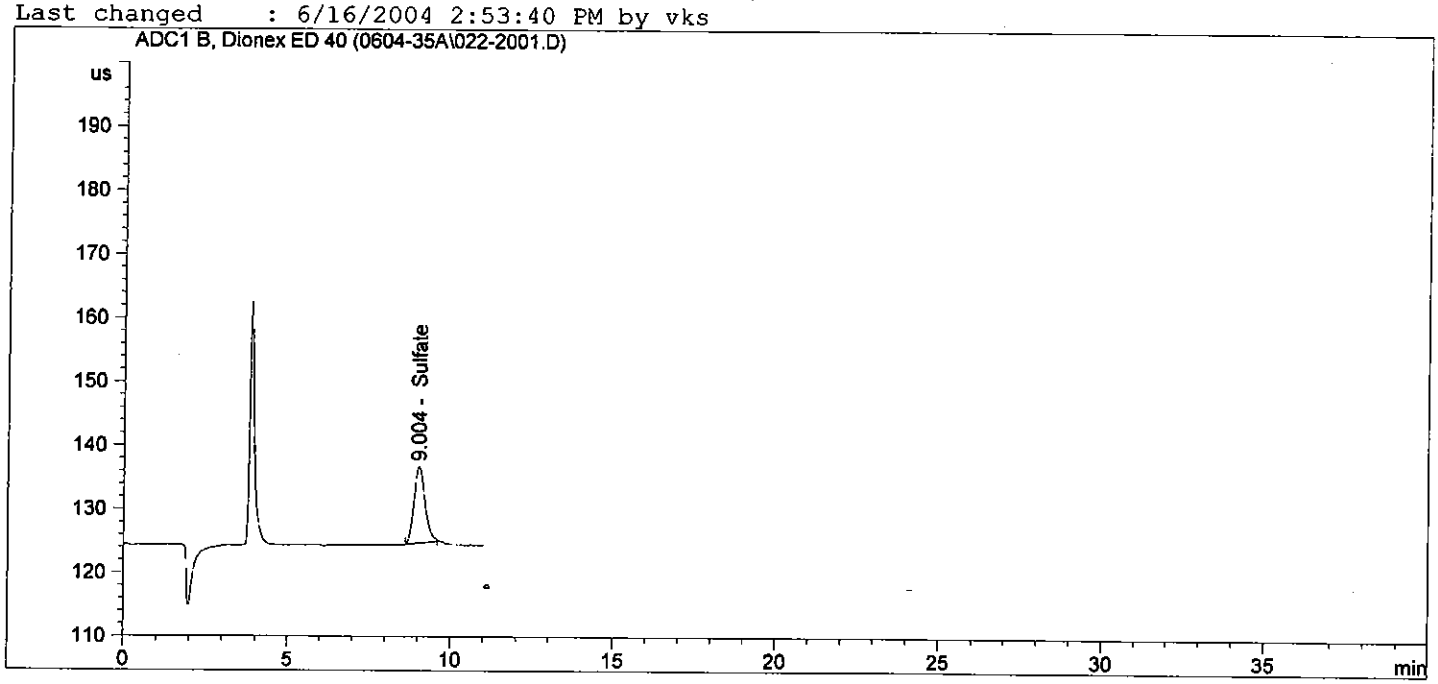
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.008 BB       69.37669 1.85449e-2    1.28659    Sulfate

Totals :                                 1.28659

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/15/2004 10:25:15 PM        Seq. Line :  20
Sample Name     : Standard 2-H2O                 Location : Vial 22
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 10:23:51 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

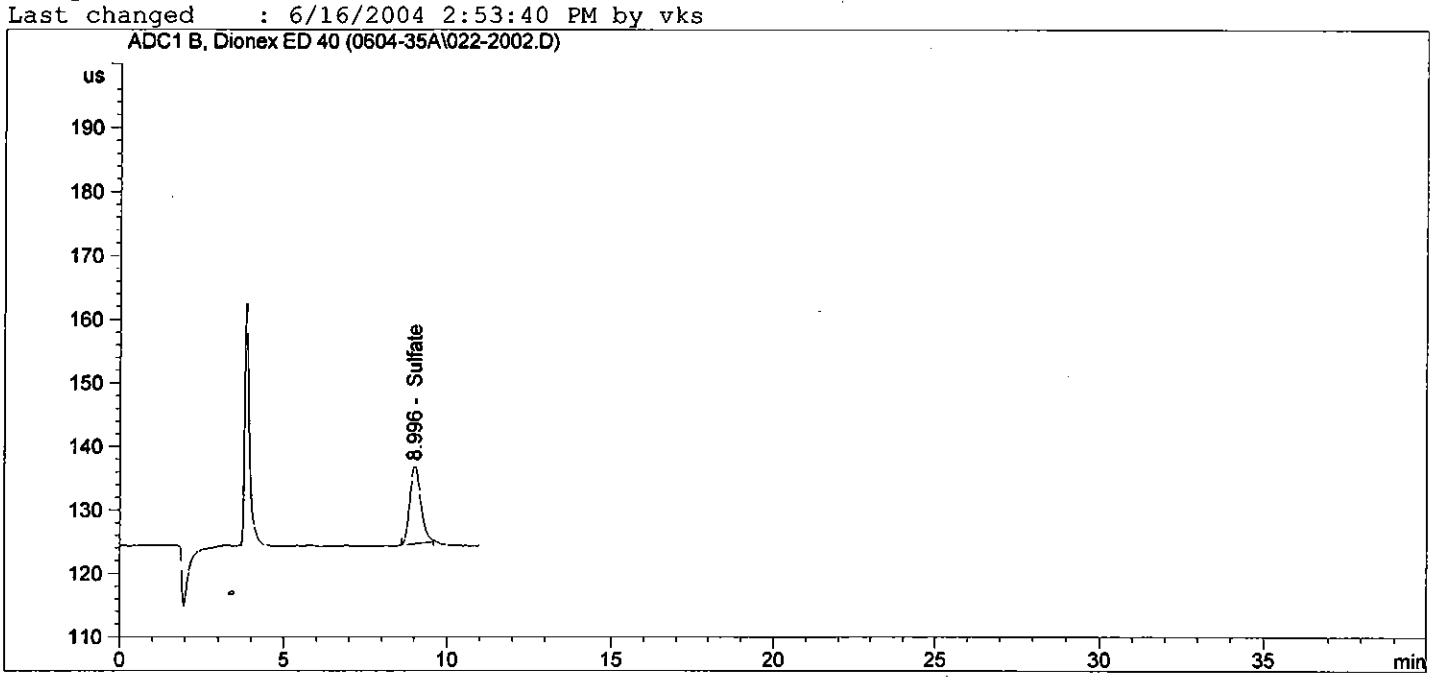
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.004 BB      276.23022 1.73601e-2    4.79538     Sulfate

Totals :                                4.79538

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/15/2004 10:37:59 PM          Seq. Line :  20
Sample Name     : Standard 2-H2O                 Location : Vial 22
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 10:36:35 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

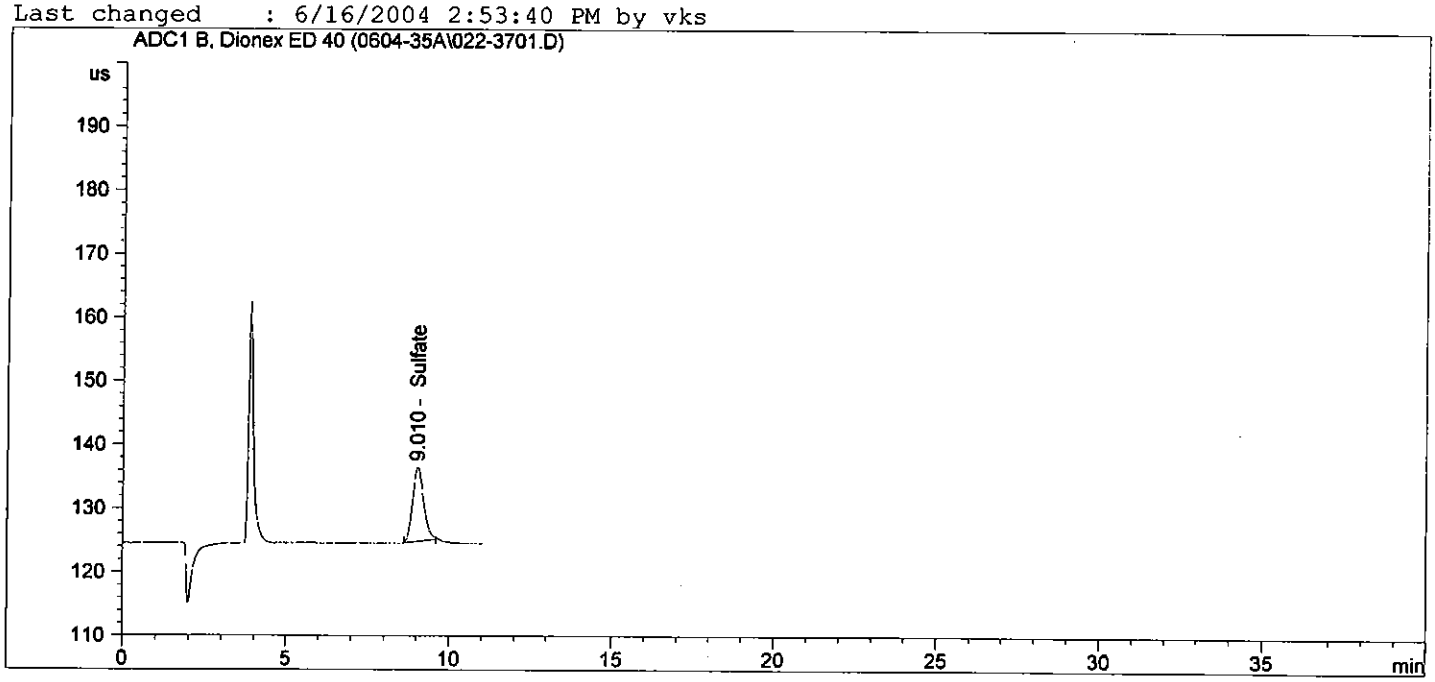
Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
8.996	BB	282.04434	1.73519e-2	4.89400		Sulfate
Totals :				4.89400		

```
 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 5:36:06 AM          Seq. Line :  37
Sample Name     : Standard 2-H2O                 Location : Vial 22
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 5:36:19 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

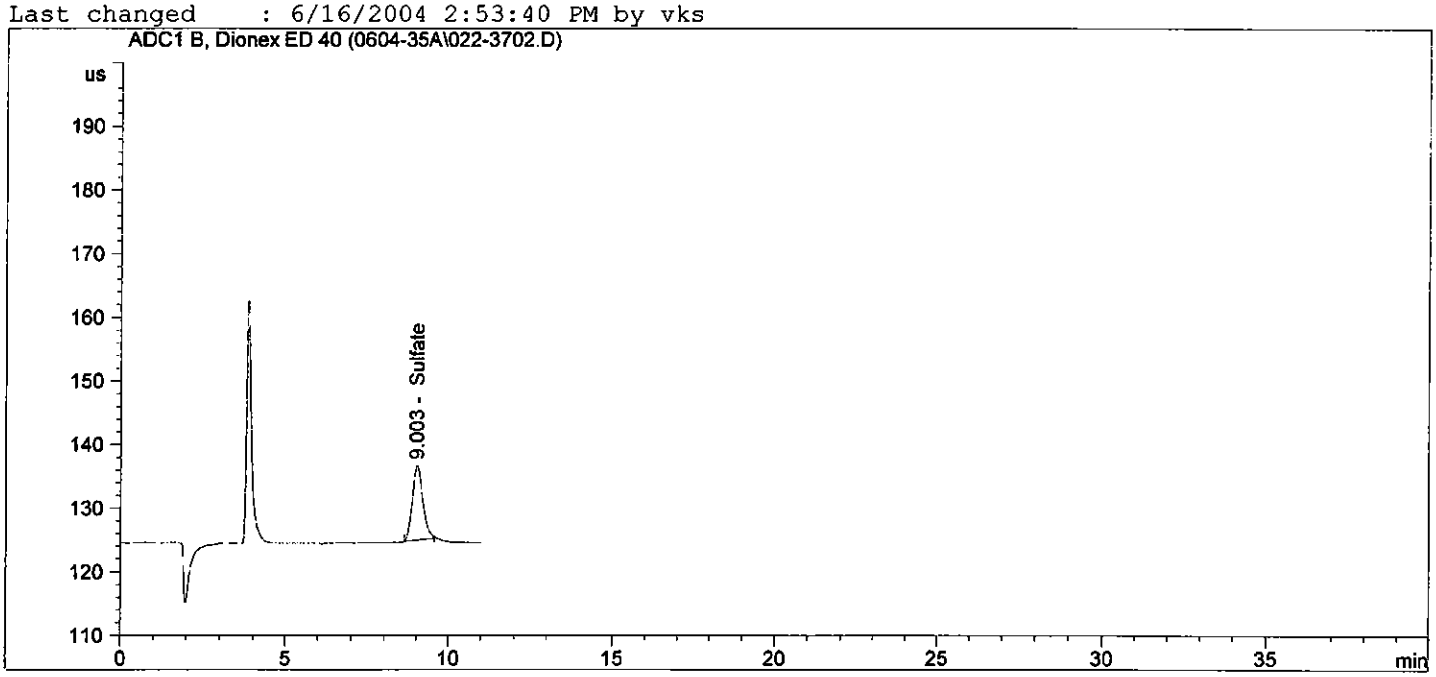
Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
9.010	BB	269.11258	1.73706e-2	4.67465		Sulfate
Totals :				4.67465		

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 6/16/2004 5:48:49 AM          Seq. Line :  37
Sample Name     : Standard 2-H2O                 Location : Vial 22
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 5:47:23 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

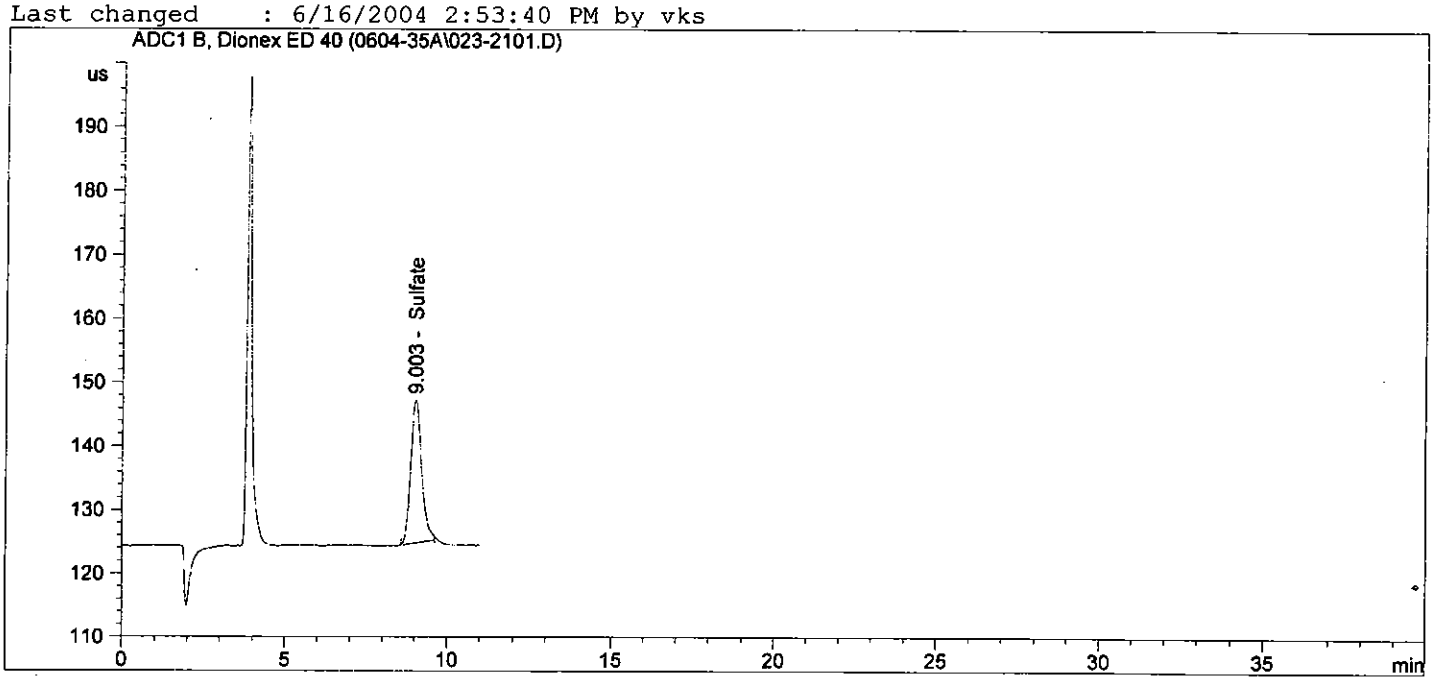
Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
9.003	BB	268.80750	1.73711e-2	4.66947		Sulfate
Totals :				4.66947		

```
 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/15/2004 10:50:39 PM          Seq. Line :  21
Sample Name     : Standard 3-H2O                  Location : Vial 23
Acq. Operator   : vks                                 Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 10:49:18 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

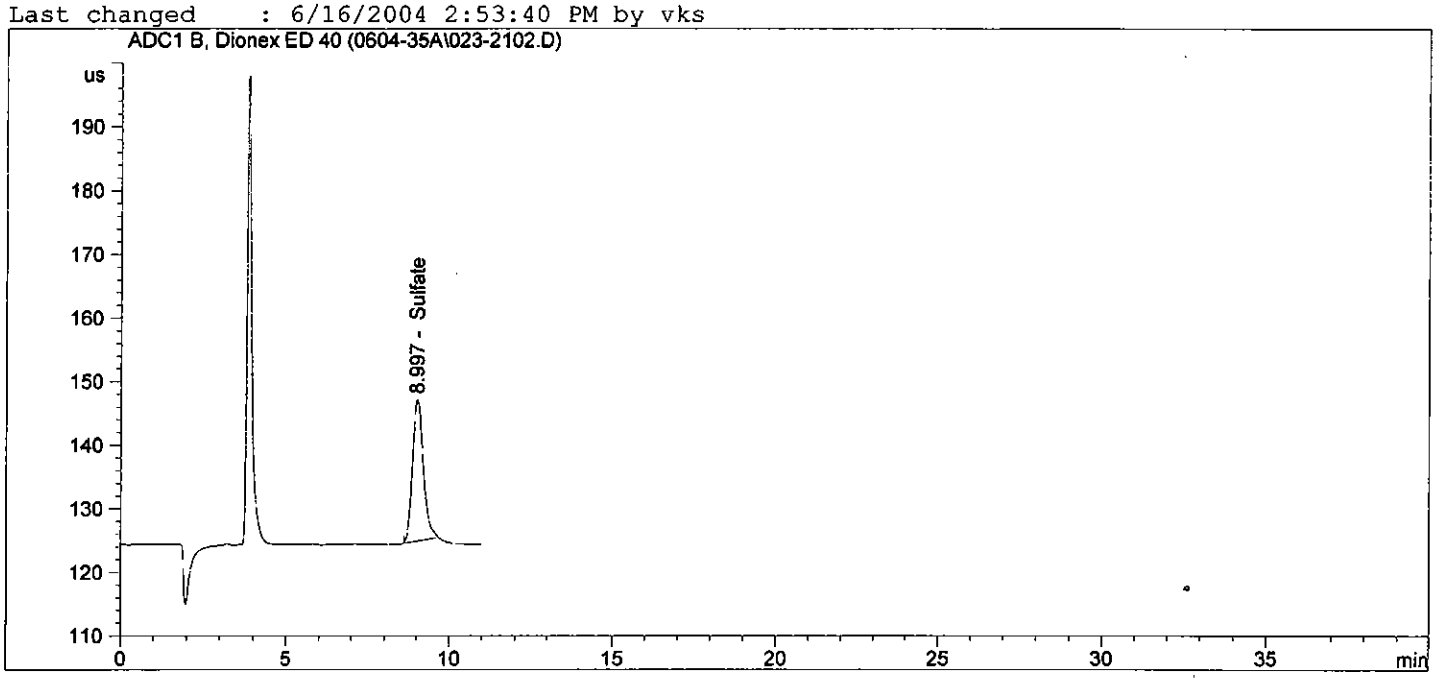
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.003 BB      525.63025 1.71715e-2    9.02588     Sulfate

Totals :                                9.02588

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
==========================================================================
Injection Date  : 6/15/2004 11:03:18 PM          Seq. Line :  21
Sample Name     : Standard 3-H2O                  Location : Vial 23
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 11:01:56 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

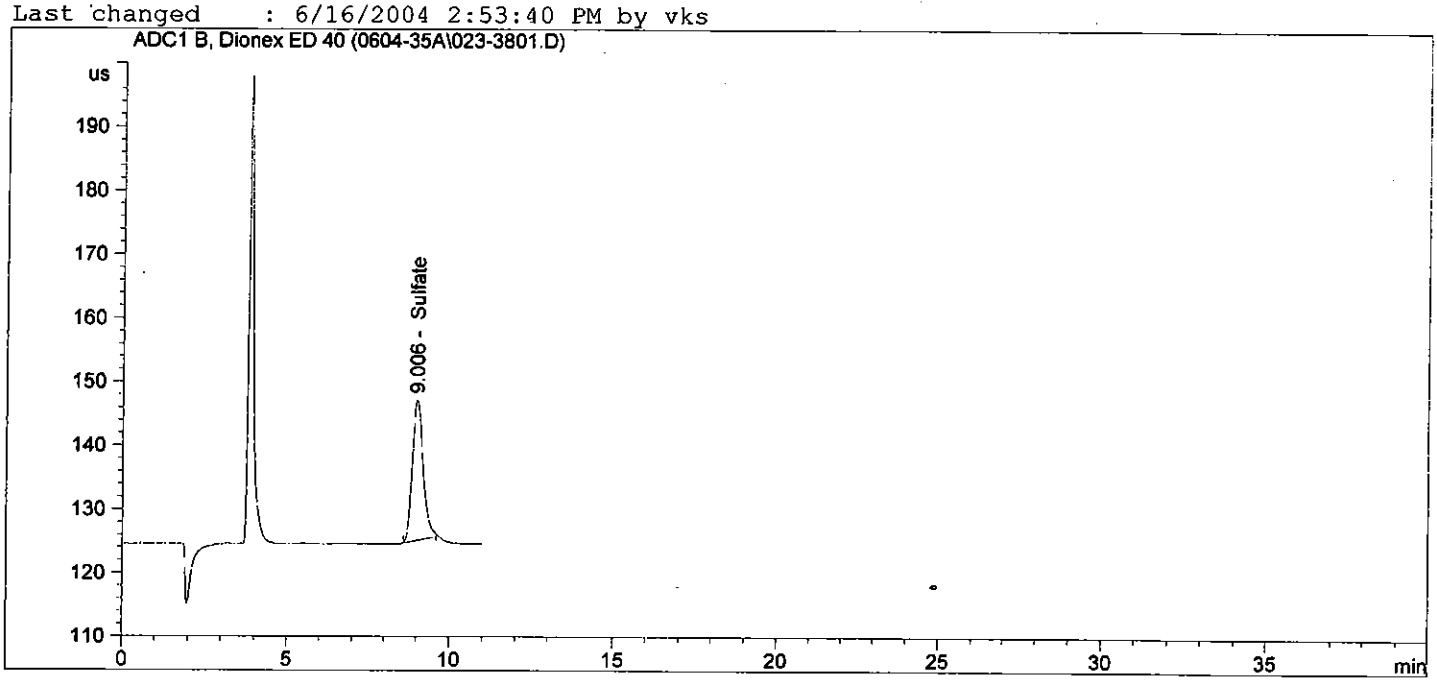
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.997 BB      519.43622 1.71740e-2    8.92081    Sulfate

Totals :                                8.92081

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
Injection Date  : 6/16/2004 6:01:29 AM          Seq. Line :  38
Sample Name     : Standard 3-H2O                 Location : Vial 23
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 6:00:05 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

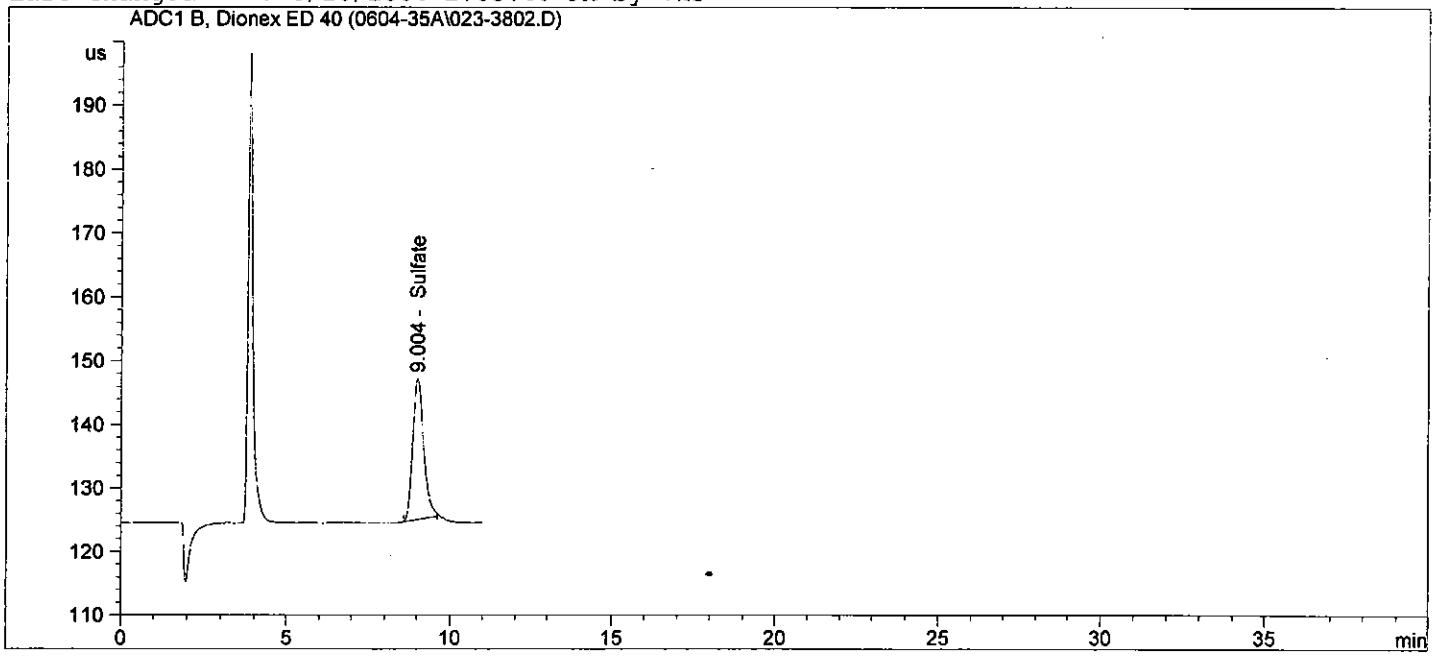
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.006 BB      513.70685 1.71764e-2    8.82363     Sulfate

Totals :                                8.82363

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
==========================================================================
Injection Date  : 6/16/2004 6:14:10 AM          Seq. Line :  38
Sample Name     : Standard 3-H2O                 Location : Vial 23
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 6:12:45 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

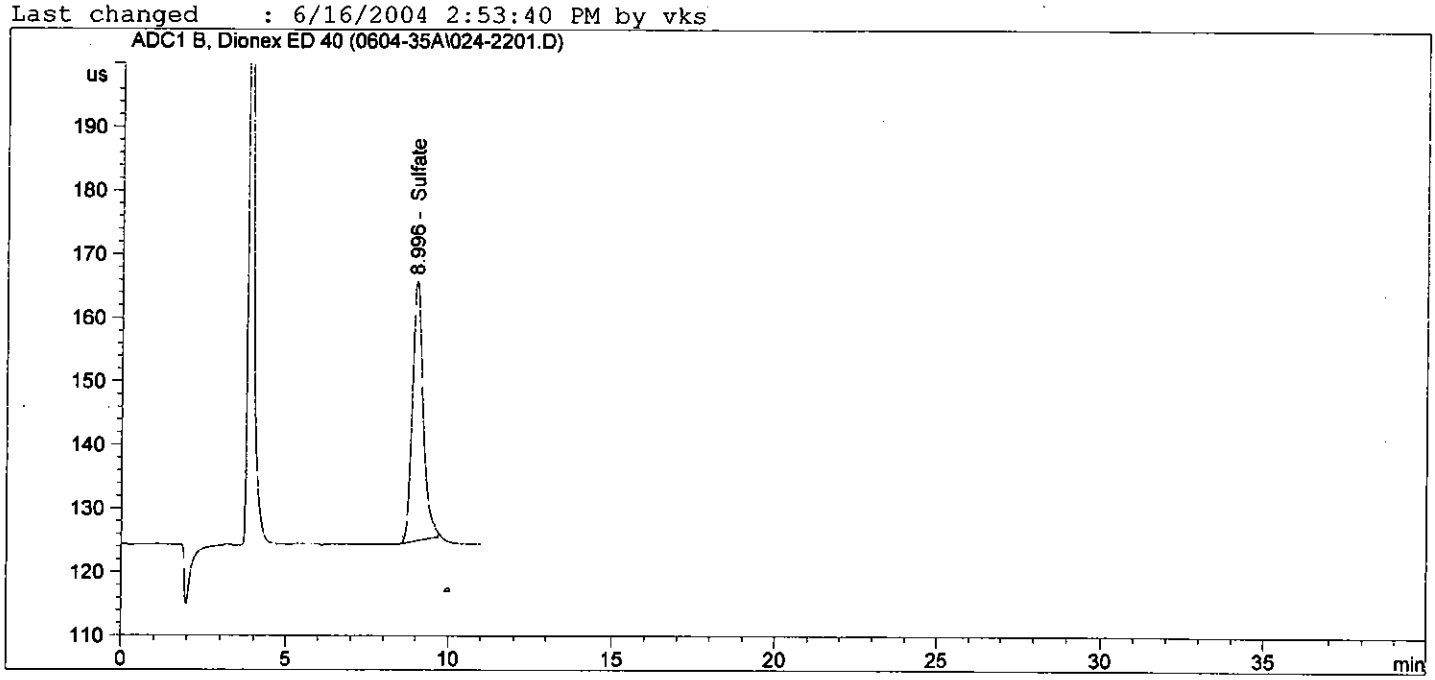
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.004 BB      518.75360 1.71743e-2    8.90923    Sulfate

Totals :                                8.90923

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
Injection Date  : 6/15/2004 11:16:00 PM          Seq. Line :  22
Sample Name     : Standard 4-H2O                  Location : Vial 24
Acq. Operator   : vks                                Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 11:14:37 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

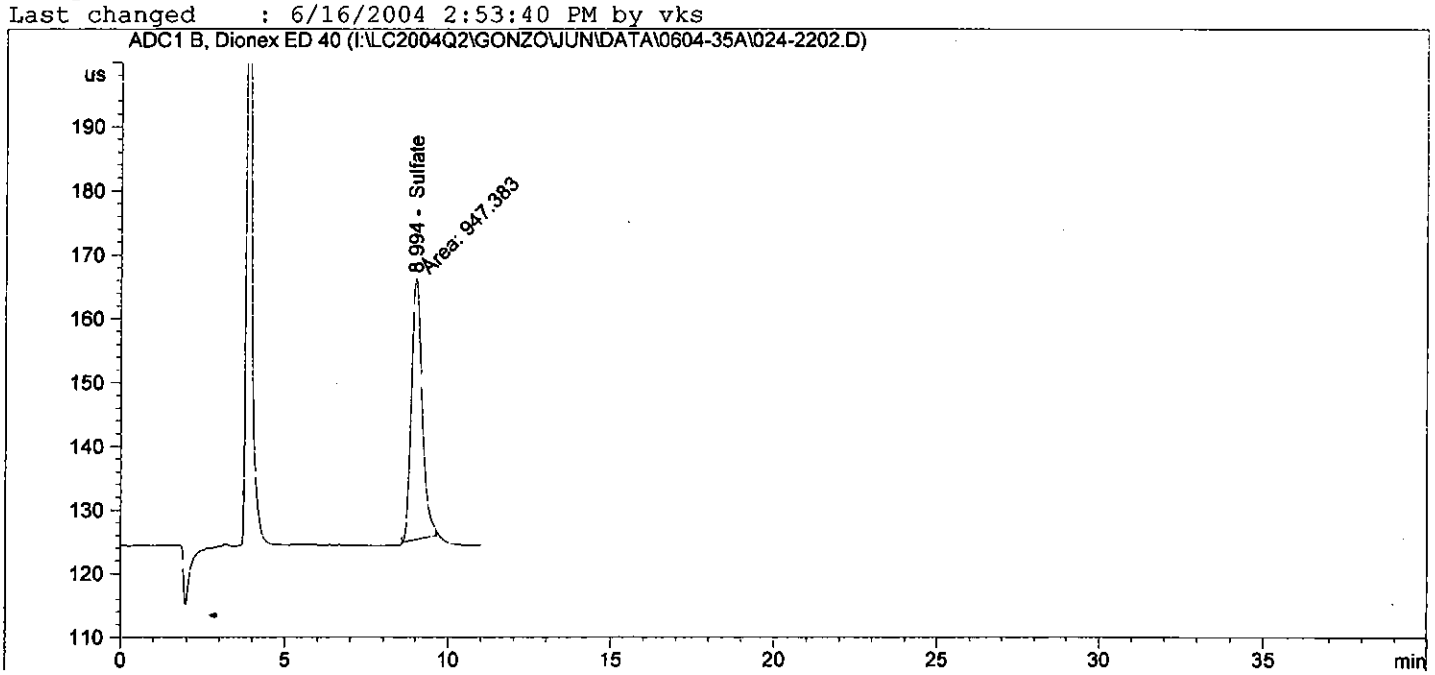
RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
8.996	BB	962.84552	1.70767e-2	16.44223		Sulfate

Totals : 16.44223

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 6/15/2004 11:28:39 PM          Seq. Line :  22
Sample Name     : Standard 4-H2O                  Location : Vial 24
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 11:27:18 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

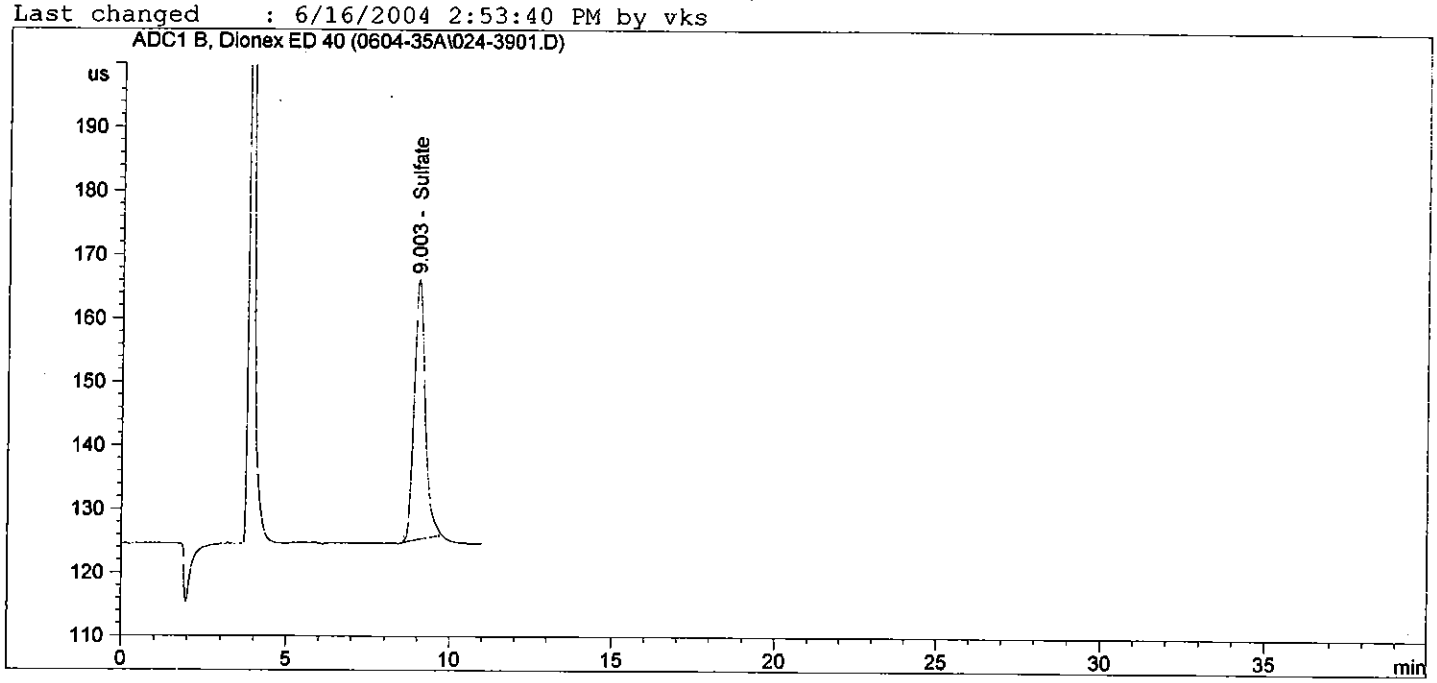
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.994 MF      947.38269 1.70786e-2   16.17994     Sulfate

Totals :                                16.17994

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 6:26:50 AM          Seq. Line :  39
Sample Name     : Standard 4-H2O                 Location : Vial 24
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 6:25:26 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

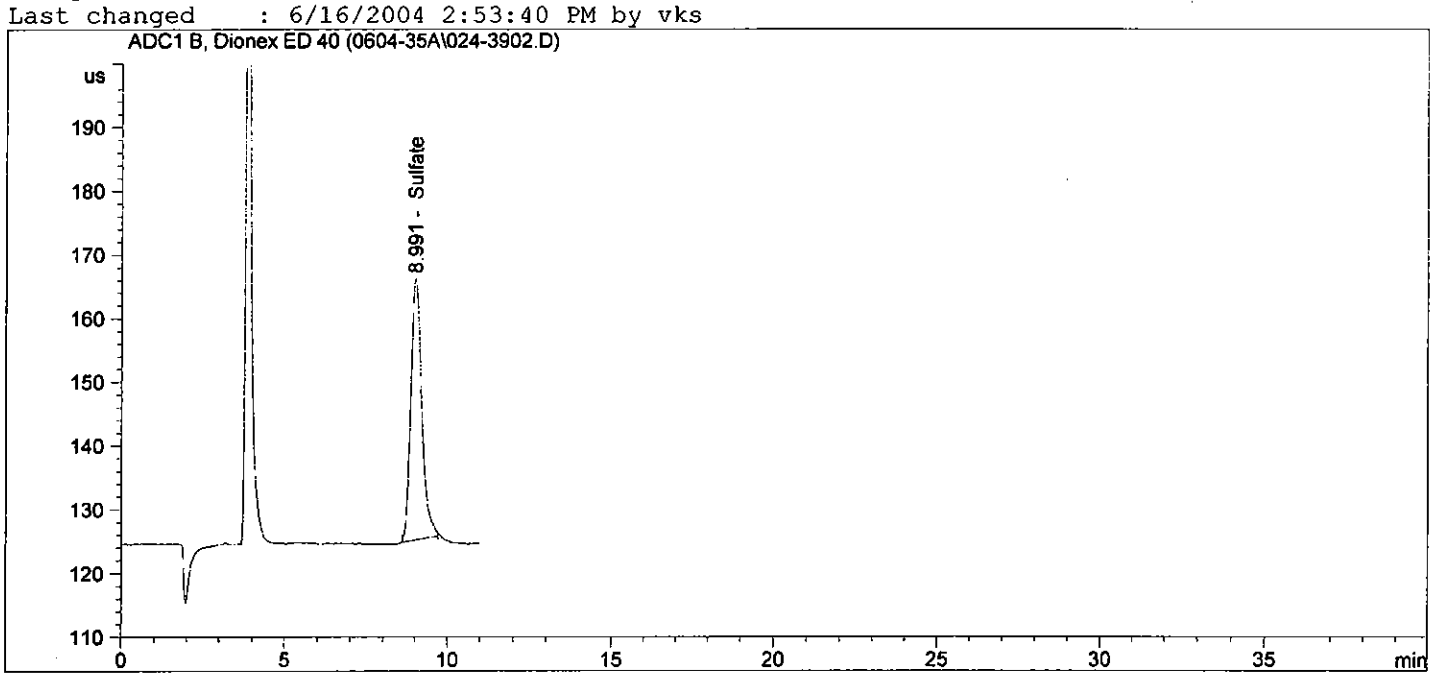
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|-----------------
  9.003 BB      959.55383 1.70771e-2   16.38640     Sulfate

Totals :                               16.38640

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 6:39:29 AM          Seq. Line :  39
Sample Name     : Standard 4-H2O                 Location : Vial 24
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 6:38:06 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

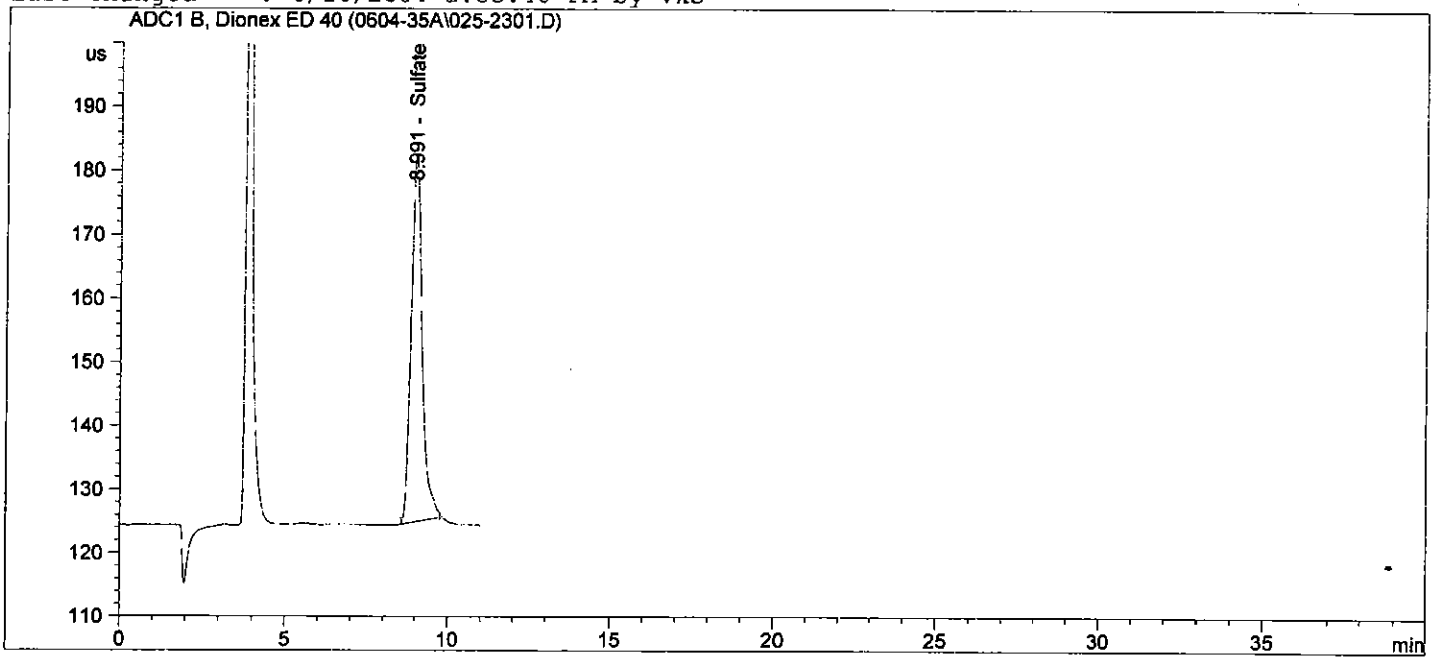
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.991 BB      967.47528 1.70762e-2   16.52077     Sulfate

Totals :                                16.52077

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
==========================================================================
Injection Date  : 6/15/2004 11:41:18 PM          Seq. Line :  23
Sample Name     : Standard5-H2O                   Location : Vial 25
Acq. Operator   : vks                                Inj :   1
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 11:39:56 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

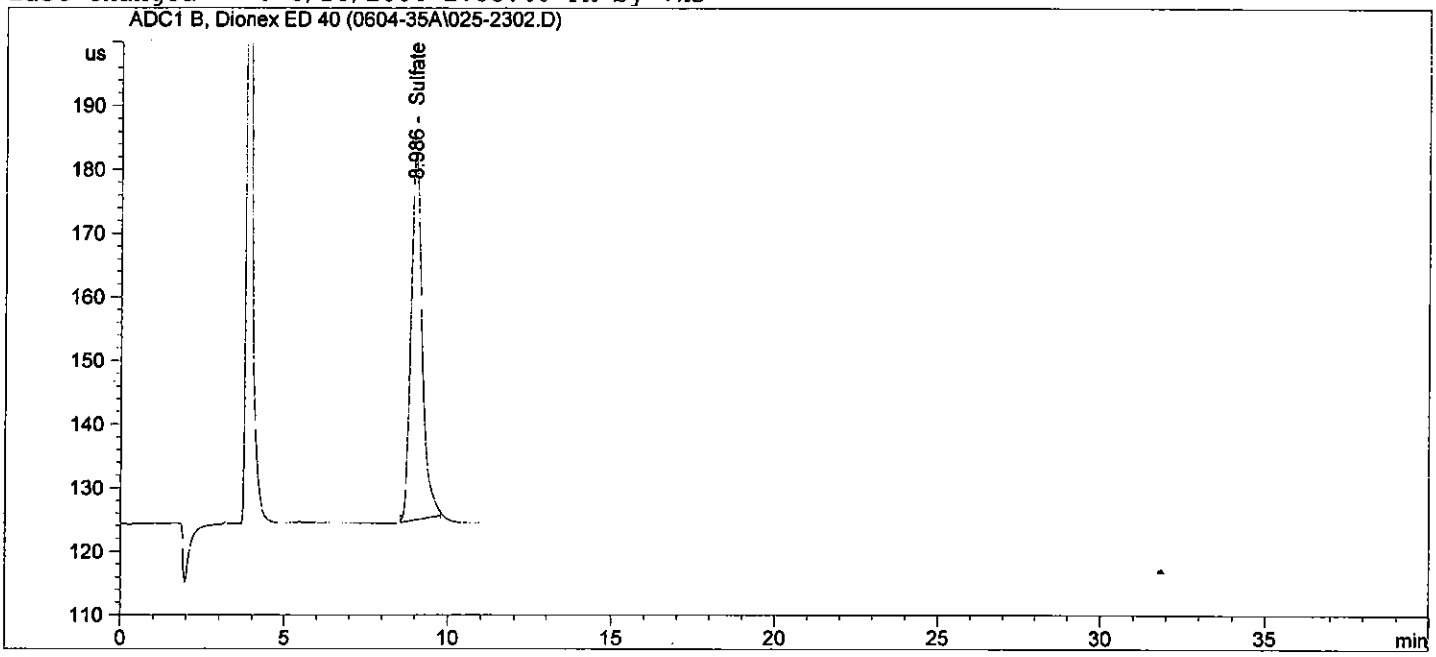
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.991 BB     1362.15234 1.70433e-2   23.21555     Sulfate

Totals :                                23.21555

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
==========================================================================
Injection Date  : 6/15/2004 11:53:57 PM          Seq. Line :  23
Sample Name     : Standard5-H2O                   Location : Vial 25
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/15/2004 11:52:37 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

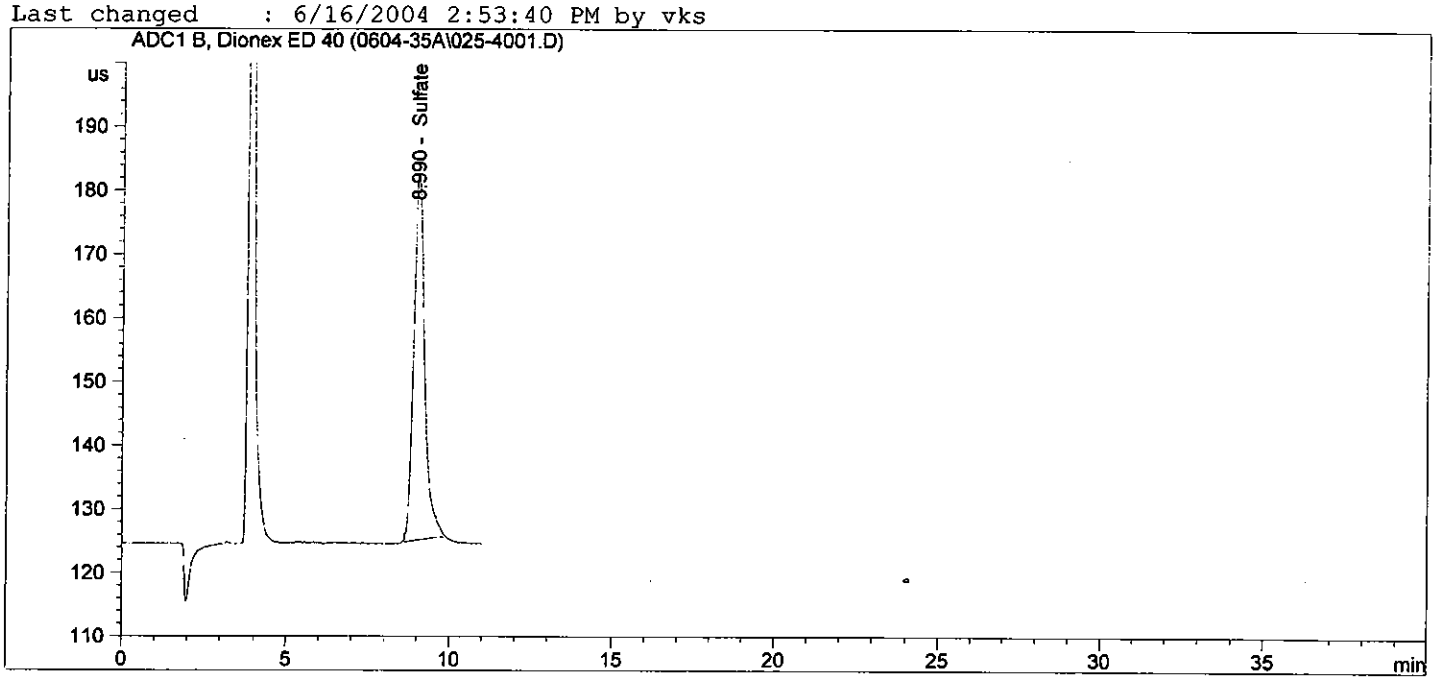
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.986 BB     1365.67273 1.70431e-2   23.27527     Sulfate

Totals :                                23.27527

 Results obtained with enhanced integrator!
==========================================================================
                          *** End of Report ***
```

```
Injection Date  : 6/16/2004 6:52:10 AM          Seq. Line :  40
Sample Name     : Standard5-H2O                  Location : Vial 25
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
Sequence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 6:50:46 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

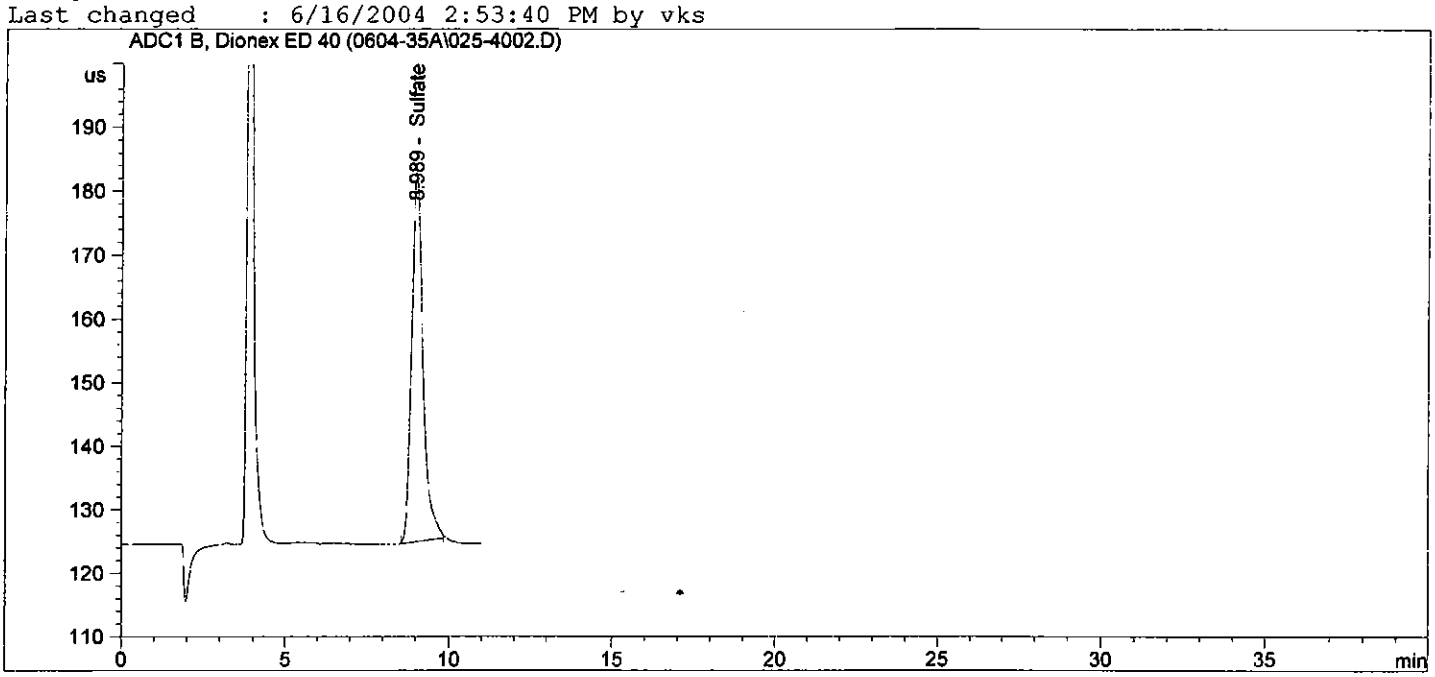
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]           [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.990 BB     1373.20374 1.70426e-2   23.40302     Sulfate

Totals :                               23.40302

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
==========================================================================
Injection Date  : 6/16/2004 7:04:52 AM          Seq. Line :  40
Sample Name     : Standard5-H2O                  Location : Vial 25
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 7:03:26 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

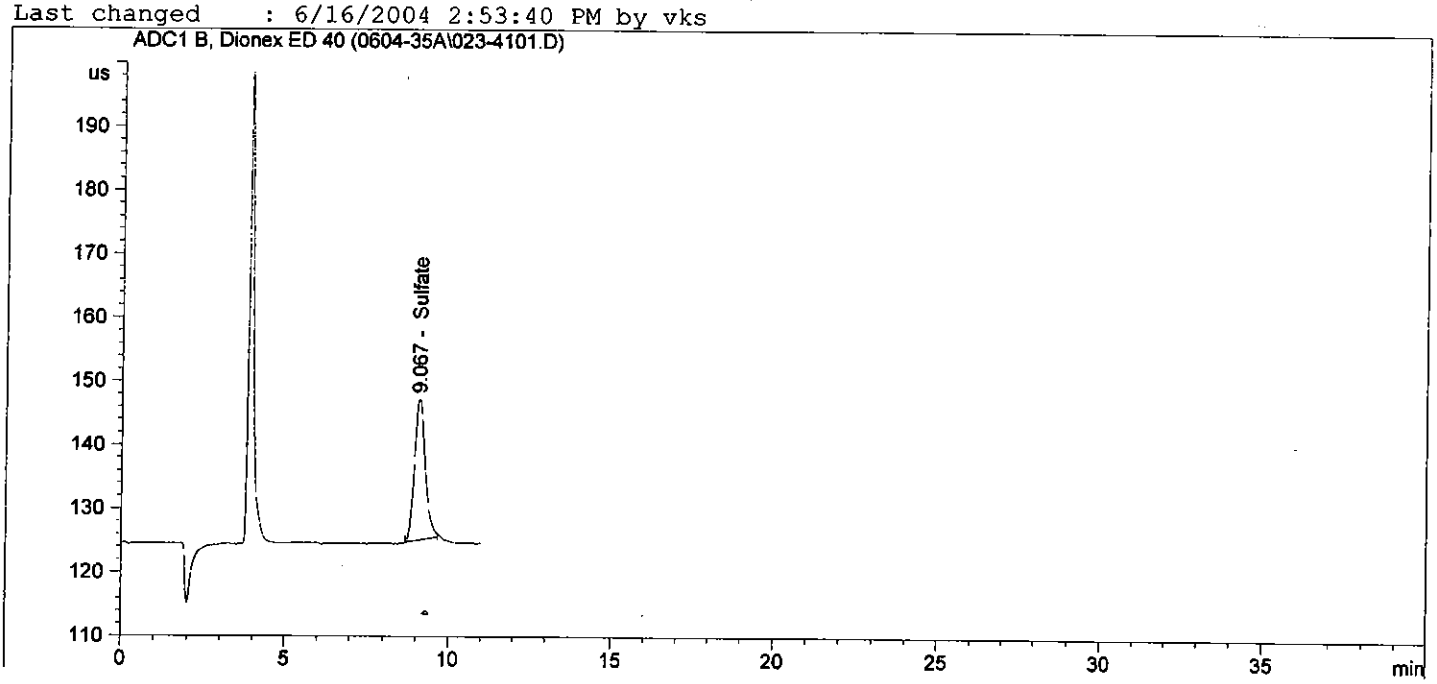
Signal 1: ADC1 B, Dionex ED 40

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  8.989 BB     1389.34204 1.70417e-2   23.67677    Sulfate

Totals :                                23.67677

 Results obtained with enhanced integrator!
==========================================================================
                        *** End of Report ***
```

```
Injection Date  : 6/16/2004 12:13:05 PM          Seq. Line :  41
Sample Name     : Standard 3-H2O                  Location : Vial 23
Acq. Operator   : vks                                Inj :   1
Acq. Instrument : Gonzo                        Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:09:44 PM by vks
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

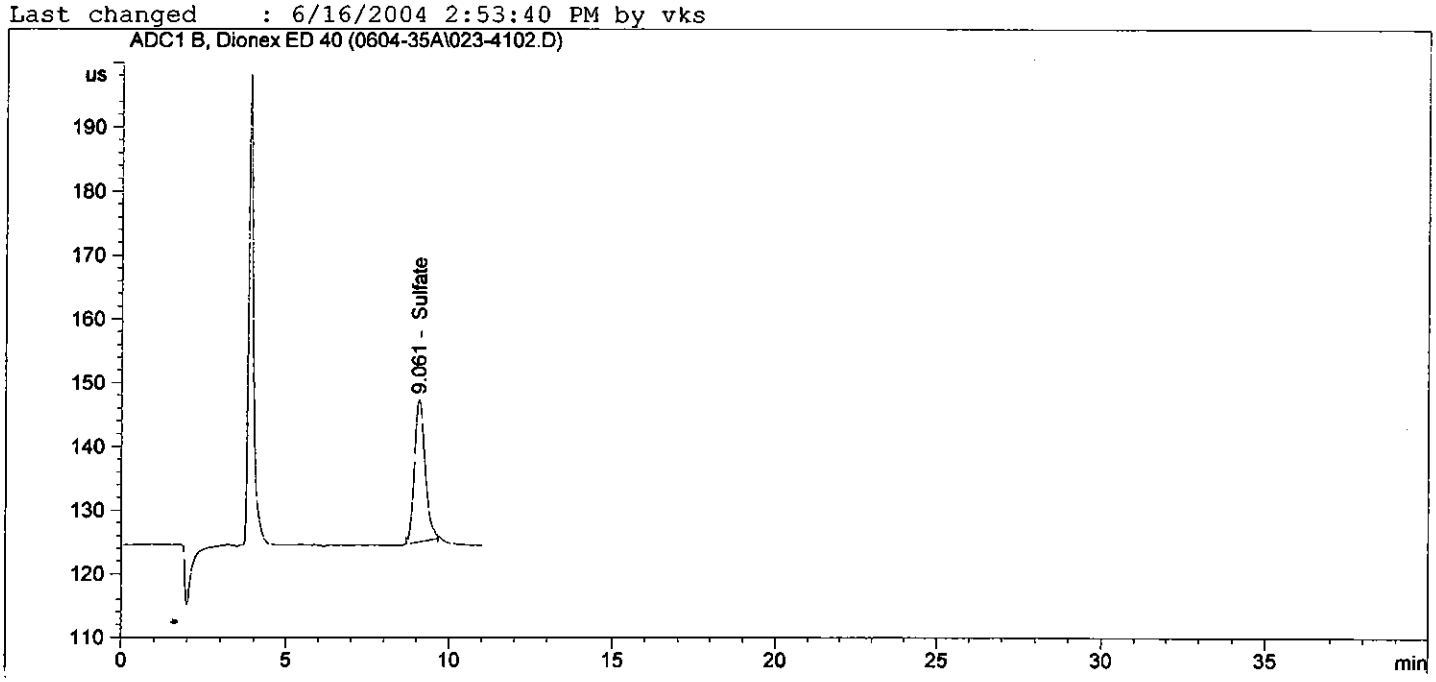
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.067 BB      515.87128 1.71755e-2    8.86034     Sulfate

Totals :                                8.86034

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 12:25:37 PM          Seq. Line :  41
Sample Name     : Standard 3-H2O                  Location : Vial 23
Acq. Operator   : vks                                 Inj :   2
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:09:44 PM by vks
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

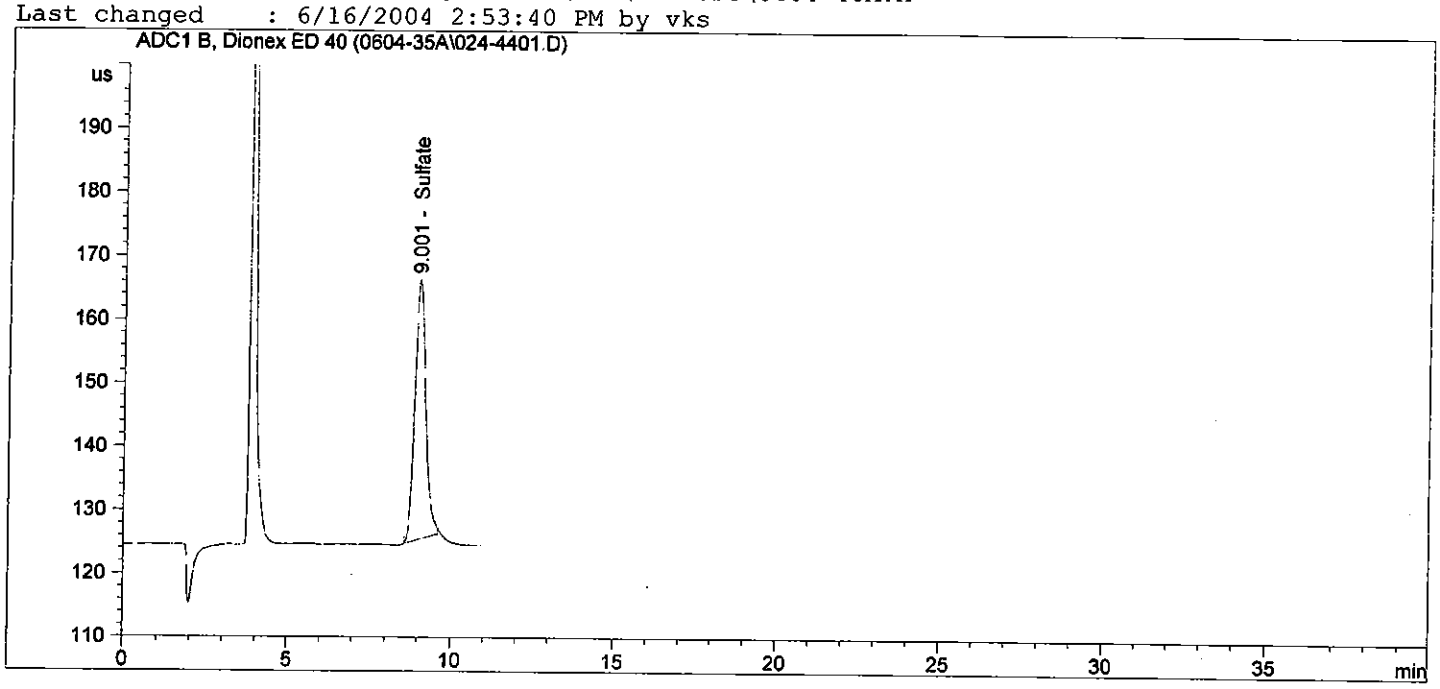
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [us*s]                [ug/mL]
-------|------|---------|----------|----------|--|------------------
  9.061 BB      517.34888 1.71749e-2    8.88541    Sulfate

Totals :                                8.88541

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 1:29:04 PM          Seq. Line :  44
Sample Name     : Standard 4-H2O                 Location : Vial 24
Acq. Operator   : vks                               Inj :   1
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 1:27:36 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

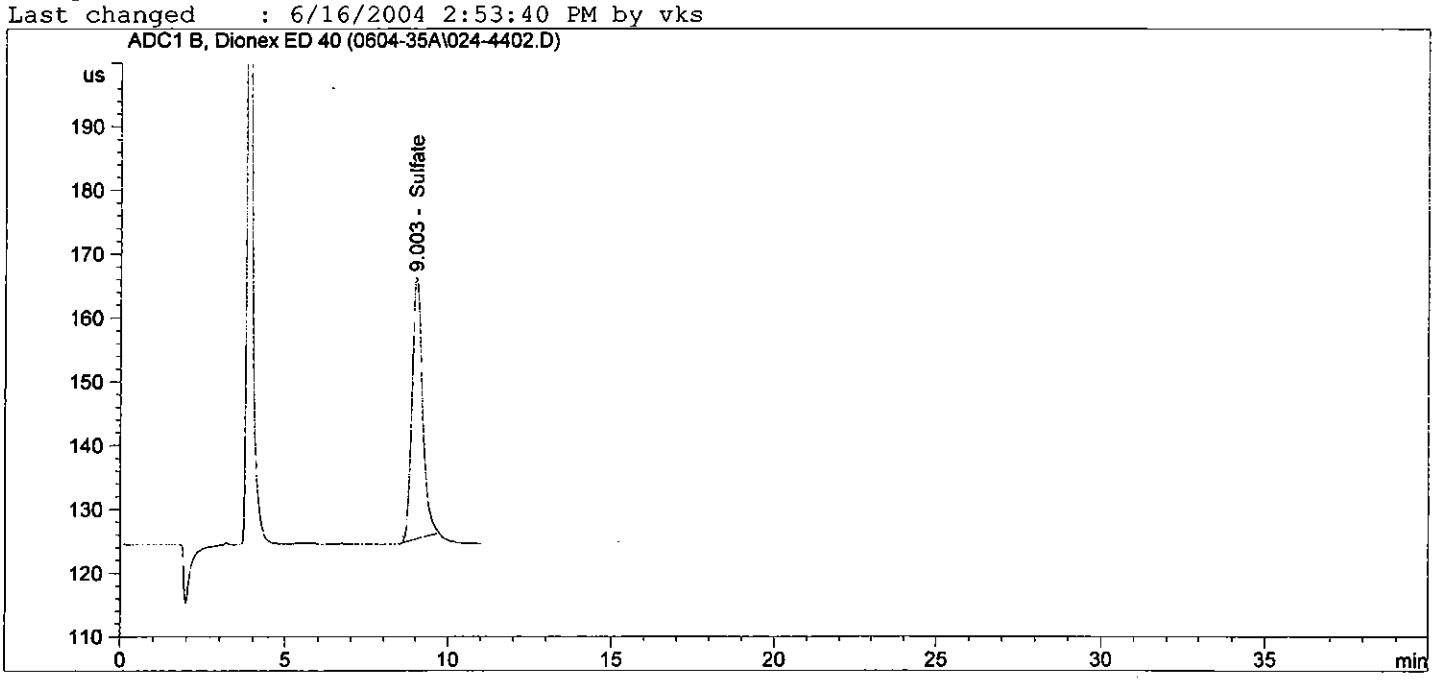
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [us*s]                [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.001 BB      940.54651 1.70794e-2   16.06398     Sulfate

Totals :                               16.06398

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 1:41:43 PM          Seq. Line :  44
Sample Name     : Standard 4-H2O                 Location : Vial 24
Acq. Operator   : vks                               Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 1:41:53 PM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40

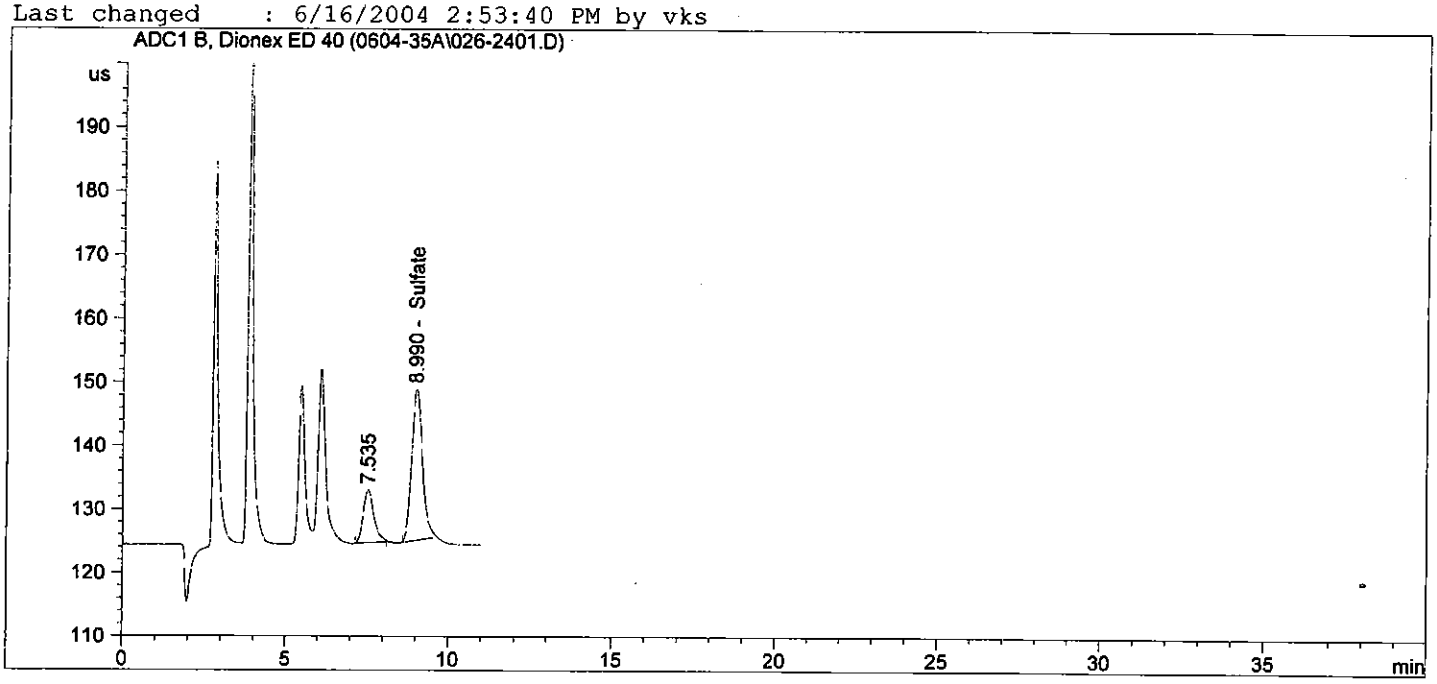
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [us*s]                 [ug/mL]
-------|------|----------|----------|----------|--|------------------
  9.003 BB      953.48206 1.70778e-2   16.28340     Sulfate

Totals :                               16.28340

 Results obtained with enhanced integrator!
```

*** End of Report ***

```
Injection Date  : 6/16/2004 12:06:38 AM          Seq. Line :  24
Sample Name     : S.S.Std-H2O                     Location : Vial 26
Acq. Operator   : vks                                 Inj :   1
Acq. Instrument : Gonzo                       Inj Volume : 25 µl
'equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:05:15 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

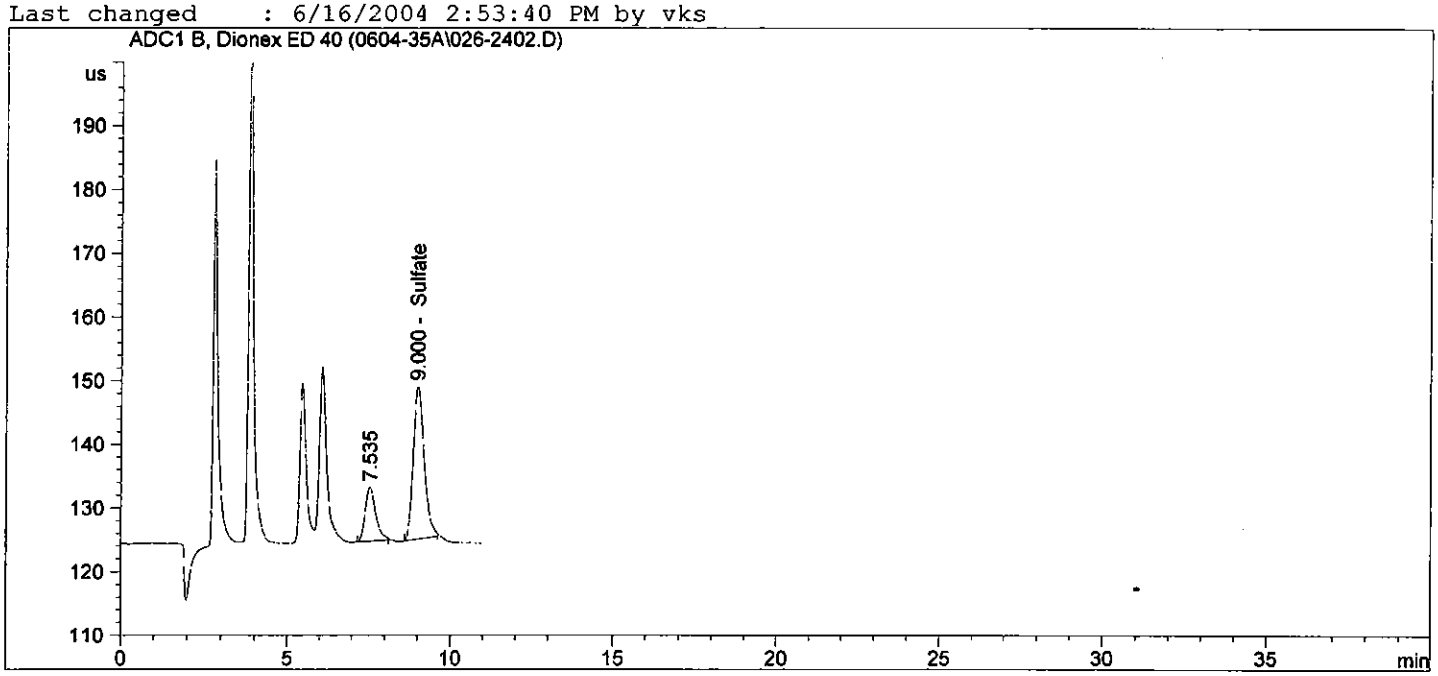
RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name	
8.990	BB	551.28632	1.71618e-2	9.46108		Sulfate	10.0

Totals : 9.46108

Results obtained with enhanced integrator!

*** End of Report ***

```
Injection Date  : 6/16/2004 12:19:18 AM          Seq. Line :  24
Sample Name     : S.S.Std-H2O                    Location : Vial 26
Acq. Operator   : vks                                Inj :   2
Acq. Instrument : Gonzo                      Inj Volume : 25 µl
 equence File   : I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S
Acq. Method     : H:\LC2004Q2\GONZO\JUN\METHODS\0604-35A.M
Last changed    : 6/16/2004 12:17:55 AM by vks
                  (modified after loading)
Analysis Method : I:\LC2004Q2\GONZO\JUN\METHODS\0604-40A.M
Last changed    : 6/16/2004 2:53:40 PM by vks
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Wednesday, June 16, 2004 2:51:47 PM
Multiplier            :      1.0000
Dilution              :      1.0000

Signal 1: ADC1 B, Dionex ED 40
```

RetTime [min]	Type	Area [us*s]	Amt/Area	Amount [ug/mL]	Grp	Name
9.000	BB	557.72876	1.71595e-2	9.57036		Sulfate

10.0

Totals : 9.57036

Results obtained with enhanced integrator!

*** End of Report ***

Sequence: I:\LC2004Q2\GONZO\JUN\SEQUENCE\0604-35A.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 1	Standard 1-OH	0604-35A	2	Sample		
2	Vial 2	Standard 2-OH	0604-35A	2	Sample		
3	Vial 3	Standard 3-OH	0604-35A	2	Sample		
4	Vial 4	Standard 4-OH	0604-35A	2	Sample		
5	Vial 5	Standard 5-OH	0604-35A	2	Sample		
6	Vial 6	S.S.Standard-OH	0604-35A	2	Sample		
7	Vial 7	LB	0604-35A	2	Sample		
8	Vial 8	BS/Chloride16	0604-35A	2	Sample		
9	Vial 9	Run1*401	0604-35B	2	Sample		
10	Vial 10	Run2*401	0604-35B	2	Sample		
11	Vial 11	Run3*401	0604-35B	2	Sample		
12	Vial 12	MS/Run3*401	0604-35B	2	Sample		
13	Vial 13	Blank*4.04	0604-35B	2	Sample		
14	Vial 1	Standard 1-OH	0604-35A	2	Sample		
15	Vial 2	Standard 2-OH	0604-35A	2	Sample		
16	Vial 3	Standard 3-OH	0604-35A	2	Sample		
17	Vial 4	Standard 4-OH	0604-35A	2	Sample		
18	Vial 5	Standard 5-OH	0604-35A	2	Sample		
19	Vial 21	Standard 1-H2O	0604-35A	2	Sample		
20	Vial 22	Standard 2-H2O	0604-35A	2	Sample		
21	Vial 23	Standard 3-H2O	0604-35A	2	Sample		
22	Vial 24	Standard 4-H2O	0604-35A	2	Sample		
23	Vial 25	Standard5-H2O	0604-35A	2	Sample		
24	Vial 26	S.S.Std-H2O	0604-35A	2	Sample		
25	Vial 27	LB	0604-35A	2	Sample		
26	Vial 28	BS/Sulfate11	0604-35A	2	Sample		
27	Vial 29	BS/Chloride17	0604-35A	2	Sample		
28	Vial 30	Run1Pre*2	0604-35A	2	Sample		
29	Vial 31	Run2Pre*2	0604-35A	2	Sample		
30	Vial 32	Run3Pre	0604-35A	2	Sample		
31	Vial 33	Audit/M1674	0604-35A	2	Sample		
32	Vial 34	Run1Post*10	0604-35A	2	Sample		
33	Vial 35	Run2Post*10	0604-35A	2	Sample		
34	Vial 36	MS/Run2Post*10	0604-35A	2	Sample		
35	Vial 37	Run3Post*10	0604-35A	2	Sample		
36	Vial 21	Standard 1-H2O	0604-35A	2	Sample		
37	Vial 22	Standard 2-H2O	0604-35A	2	Sample		
38	Vial 23	Standard 3-H2O	0604-35A	2	Sample		
39	Vial 24	Standard 4-H2O	0604-35A	2	Sample		
40	Vial 25	Standard5-H2O	0604-35A	2	Sample		
41	Vial 23	Standard 3-H2O	0604-35A	2	Sample		
42	Vial 38	Run3Post*25	0604-35A	2	Sample		
43	Vial 39	MS/Run3Post*25	0604-35A	2	Sample		
44	Vial 24	Standard 4-H2O	0604-35A	2	Sample		

Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, IN 46219

Project Number: 079 – PPFF Baghouse

Antimony, Arsenic, Barium,
Beryllium, Cadmium, Chromium,
Cobalt, Copper, Lead,
Manganese, Mercury, Nickel,
Phosphorus, Selenium,
Silver, Thallium, and Zinc

EPA Method 29 Analysis

Analytical Report
3361-M29

Element One, Inc.
5022-C Wrightsville Av., Wilmington, NC 28403
910-793-0128 FAX:910-792-6853 e1lab@hotmail.com

I have reviewed the following data for completeness, accuracy, adherence to method protocol, and compliance with quality assurance guidelines.

Quality assurance review by Bruce Hawks

Bruce Hawks 6/16/04

SUMMARY OF RESULTS

el1

Summary of Analysis

Summary of Mercury Analysis

Run Number		Average Total Catch, µg	Front half µg	H_2O_2 /HNO_3 µg	Empty Impinger µg	$KMnO_4$ µg
Run 1	# 1	3.95	< 0.1	2.72	< 0.2	1.19
	# 2		< 0.1	2.78	< 0.2	1.21
Run 2	# 1	4.77	< 0.1	4.03	< 0.2	0.69
	# 2		< 0.1	4.10	< 0.2	0.72
Run 3	# 1	7.58	0.53	3.98	< 0.2	3.10
	# 2		0.52	4.00	< 0.2	3.04
Blank	# 1	< 0.4	< 0.1	< 0.3	< 0.2	< 0.4
	# 2		< 0.1	< 0.3	< 0.2	< 0.4

Summary of Metals Analysis

Element	Run 1 Total µg	Run 2 Total µg	Run 2 Total µg	Run 3 Total µg
Antimony	< 0.5	< 0.5	< 0.5	0.77
Arsenic	< 0.5	< 0.5	< 0.5	< 0.5
Barium	6.69	5.93	5.86	5.45
Beryllium	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.61	0.37	0.35	0.31
Chromium	17.6	6.17	6.26	6.56
Cobalt	< 0.5	< 0.5	< 0.5	< 0.5
Copper	5.62	2.33	2.33	2.68
Lead	4.64	2.29	2.26	1.93
Manganese	40.4	13.9	13.9	12.6
Nickel	4.72	2.11	2.10	2.52
Phosphorus	38.1	29.3	30.8	29.6
Selenium	< 0.5	< 0.5	< 0.5	< 0.5
Silver	< 0.5	< 0.5	< 0.5	< 0.5
Thallium	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	93.5	40.4	41.0	45.7

ANALYTICAL NARRATIVE

el1

Element One Analytical Narrative

Client	Air Test Professionals, Inc.	Element One #:	3361
Client ID:	079 – PPFF Baghouse Nucor Steel	Analyst:	DBW, CML, BPL
Date Received	6/10/04	Method:	M29
Analytes	Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, Zn, & Hg	Dates Analyzed	6/11 - 16/04

Summary of Analysis

The Method 29 samples were digested, prepared, and analyzed according to Method 29 protocol. Samples were analyzed for mercury on a PerkinElmer FIMS-100 CVAA mercury analyzer. The other metals were analyzed on a PerkinElmer ELAN 6100 ICP-MS.

Detection Limits

The FIMS-100 CVAA instrument reporting limit for mercury was 0.004 µg per aliquot analyzed. The ICP-MS instrument reporting limits were 0.25 µg/L for beryllium, 1 µg/L for cadmium, 20 µg/L for phosphorus, and 2.5 µg/L for the other metals.

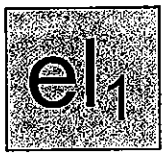
Analysis QA/QC

Duplicate analyses relative percent difference (RPD), spike sample recovery, and second source calibration verification data are summarized on the following pages. All QA/QC data was within the criteria of the method.

Additional Comments

The reported results have not been corrected for any blank values or spike recovery values. Nothing unusual was noticed with any of the samples or analyses.

QUALITY CONTROL SUMMARY



Summary of Quality Control Data

Mercury Duplicate Analysis RPD

Run Number	Front half	H_2O_2/HNO_3	Empty Imp	$KMnO_4$
Run 1	NA	2.1%	NA	2.0%
Run 2	NA	1.8%	NA	3.8%
Run 3	2.2%	0.5%	NA	2.1%
Blank	NA	NA	NA	NA

Metals Duplicate Analysis RPD and Spike Recoveries

Element	Run 2 RPD	Run 3 Recovery
Antimony	NA	103%
Arsenic	NA	96%
Barium	1.1%	101%
Beryllium	NA	96%
Cadmium	5.9%	88%
Chromium	1.5%	104%
Cobalt	NA	103%
Copper	0.3%	104%
Lead	1.2%	103%
Manganese	0.3%	105%
Nickel	0.4%	104%
Phosphorus	4.9%	96%
Selenium	NA	80%
Silver	NA	96%
Thallium	NA	103%
Zinc	1.4%	103%

Summary of Quality Control Data (continued)

Mercury Spike Recoveries

Run Number		Front half	H_2O_2/HNO_3	Empty Imp	KMnO4
Run 3	# 1	110%	103%	101%	91%
.	# 2	101%	106%	98%	92%

Second Source Calibration Check Recoveries

Element	0.25 ppb	1 ppb	10 ppb	50 ppb	500 ppb
Antimony		104%	103%	107%	107%
Arsenic		99%	102%	111%	108%
Barium		98%	98%	102%	98%
Beryllium	108%	102%	94%	111%	107%
Cadmium		96%	97%	98%	95%
Chromium		103%	95%	101%	109%
Cobalt		100%	99%	100%	106%
Copper		105%	103%	105%	100%
Lead		104%	104%	103%	99%
Manganese		98%	96%	100%	110%
Nickel		103%	99%	102%	103%
Phosphorus		96%		101%	99%
Selenium		93%	101%	103%	96%
Silver		100%	98%	97%	
Thallium		106%	105%	104%	100%
Zinc		116%	105%	115%	107%

ANALYTICAL DATA

el1

elementOne **AIR TESTING SAMPLE SUBMISSION FORM** Lab ID e3361

Changed per Carlos

Client ID/PO: 079 – PPFF Baghouse Nucor Steel		Date Received: 6/10/04	Page: 1	of 1
Customer: Air Test Professionals, Inc.		Results Requested: 6/24/04 6-21-04	Time Rec: 1045	
Address: 1201 N. Graham Av.		Contact: Carlos Brown	Rec by: BGH	
Indianapolis, IN 46219		Email: atp_stack@sbcglobal.net	Via:	
		Phone: 317-345-1723	Fax:	
HNO_3 Lot: 1103080	HF Lot: 5101124	HCl Lot: 4103101		
Volume Marked (Y) / N	Volume Loss Y / (N) ?	pH < 2.0 (Y) / N	Ref. Method: 29	

	Sample Identification		Sample Identification
1	Run 1		
2	Run 2		
3	Run 2 Duplicate		
4	Run 3		
5	Run 3 Spike		
6	Blank		

Elements to Analyze: Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, P, Se, Ag, Tl, Zn, & Hg FH/BH Combined

	Front Half		Back Half			HNO_3 (A)		$KMnO_4$ (B)		HCl (C)	
SAMPLE	BV, ml	FV, ml	BV, ml	Used	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml	BV, ml	FV, ml
1	98	100	320	160	50	104 mL	200 mL	390 mL	600 mL		
2/3	104	↓	320	160	↓	104 mL	↓	400 mL	500 mL		
4/5	94	↓	290	145	↓	104 mL	↓	405 mL	600 mL		
6	50	↓	100 H_2O 50 1N HNO_3	150	↓	200 mL	200 mL	27.7 ml H_2O 84 ml 4% $KMnO_4$	400 mL		
						6-10-04		6-10-04			
				FH · BLK · F.V. = 100 mL 6-11-04 JJS							
				BH · BLK · F.V. = ~~100 mL~~ 50 mL							
				FH · BLK · SPK @ 5 ug except for P is @ 20 ug							
				BH · BLK · SPK @ 2.5 ug except for P is @ 10 ug							
				Spk · lot : 021404 · A, B, C, F							
				6-11-04 JJS							

Comments: No 'C' Fraction, Recombined Digested filter w/ "B" Fraction and brought to Volume

elementOne

Method 29 / OHM Weight Worksheet

Lab ID # e 3361

Client:

ıte Digested: 6·15·04 Initials: IJJ Worksheet Prepared by: IJJ

Sample Lab ID	Sample Description	Sample Weight (g)	Weight Digested (g)	Spike	Prep Volume (ml)	Dilution Volume (ml)	Units
3361-1	FH·Filter	N/A	Full	N/A	100ml		ug/L
2/3	↓	↓	↓	↓	↓		↓
4/5	↓	↓	↓	↓	↓		↓
6	↓	↓	↓	↓	↓		↓

Dataset Report

Dph Woodman 6-15-04

r Name: dwoodman
Computer Name: ICPMS1
Dataset File Path: c:\elandata\dataset\061504-2\
Report Date/Time: Tuesday, June 15, 2004 15:49:43

Autosampler Position: 6

The Dataset

Time	Sample ID	Batch ID	Read Type	Description	Init. Quant	Prep. Vol.	Aliquot. Vol.	Diluted V
13:20:23 Tue 15-Jun-04	Blank		Blank					
13:23:25 Tue 15-Jun-04	Standard 1		Standard #1					
13:26:29 Tue 15-Jun-04	Standard 2		Standard #2					
13:29:33 Tue 15-Jun-04	Standard 3		Standard #3					
13:32:37 Tue 15-Jun-04	QC Std 1		QC Std #1					
13:35:41 Tue 15-Jun-04	QC Std 2		QC Std #2					
13:38:43 Tue 15-Jun-04	QC Std 3		QC Std #3					
13:41:45 Tue 15-Jun-04	QC Std 4		QC Std #4					
13:44:48 Tue 15-Jun-04	QC Std 5		QC Std #5					
13:47:52 Tue 15-Jun-04	QC Std 6		QC Std #6					
13:50:56 Tue 15-Jun-04	QC Std 7		QC Std #7					
13:54:00 Tue 15-Jun-04	QC Std 8		QC Std #8					
13:57:05 Tue 15-Jun-04	LRB		Sample	Air Test Professionals, Inc.				
14:00:10 Tue 15-Jun-04	LRB		Spike - 1	Air Test Professionals, Inc.				
14:03:14 Tue 15-Jun-04	3361-1		Sample	Air Test Professionals, Inc.				
06:16 Tue 15-Jun-04	3361-2		Sample	Air Test Professionals, Inc.				
:09:18 Tue 15-Jun-04	3361-2		QC Duplicate	Air Test Professionals, Inc.				
14:12:20 Tue 15-Jun-04	3361-4		Sample	Air Test Professionals, Inc.				
14:15:23 Tue 15-Jun-04	3361-4		Spike - 1	Air Test Professionals, Inc.				
14:18:26 Tue 15-Jun-04	3361-6		Sample	Air Test Professionals, Inc.				
14:21:28 Tue 15-Jun-04	QC Std 3		QC Std #3					
14:24:30 Tue 15-Jun-04	QC Std 4		QC Std #4					
14:48:05 Tue 15-Jun-04	LRB	x2	Sample	Air Test Professionals, Inc.				
14:51:08 Tue 15-Jun-04	LRB	x2	Spike - 2	Air Test Professionals, Inc.				
14:54:12 Tue 15-Jun-04	3361-1	x5	Sample	Air Test Professionals, Inc.				
14:57:15 Tue 15-Jun-04	QC Std 3		QC Std #3					
15:00:17 Tue 15-Jun-04	QC Std 4		QC Std #4					
15:12:37 Tue 15-Jun-04	LRB		Sample	Air Test Professionals, Inc.				
15:15:42 Tue 15-Jun-04	LRB		Spike - 1	Air Test Professionals, Inc.				
15:18:45 Tue 15-Jun-04	QC Std 3		QC Std #3					
15:21:48 Tue 15-Jun-04	QC Std 4		QC Std #4					
15:32:47 Tue 15-Jun-04	QC #1		QC Std #1					
15:35:51 Tue 15-Jun-04	QC #2		QC Std #2					
15:38:53 Tue 15-Jun-04	QC Std 3		QC Std #3					
15:41:55 Tue 15-Jun-04	QC Std 4		QC Std #4					

Sample/Batch Report

Daphne Woodman 6-15-04

r Name: dwoodman
Computer Name: ICPMS1
Sample File: C:\elandata\Sample\xxx.sam
Report Date/Time: Tuesday, June 15, 2004 15:49:50

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
12		LRB	Air Test Professionals, Inc.						
13		LRB	Air Test Profes	Spike - 1					
14		3361-1	Air Test Professionals, Inc.						
15		3361-2	Air Test Professionals, Inc.						
16		3361-2	Air Test Profes	QC Duplicate					
17		3361-4	Air Test Professionals, Inc.						
18		3361-4	Air Test Profes	Spike - 1					
19		3361-6	Air Test Professionals, Inc.						
20	x2	LRB	Air Test Professionals, Inc.						
21	x2	LRB	Air Test Profes	Spike - 2					
22	x5	3361-1	Air Test Professionals, Inc.						
23		LRB	Air Test Professionals, Inc.						
24		LRB	Air Test Profes	Spike - 1					
5		QC #1							
6		QC #2							

elementOne **ICP-MS RUN SHEET** **3361**

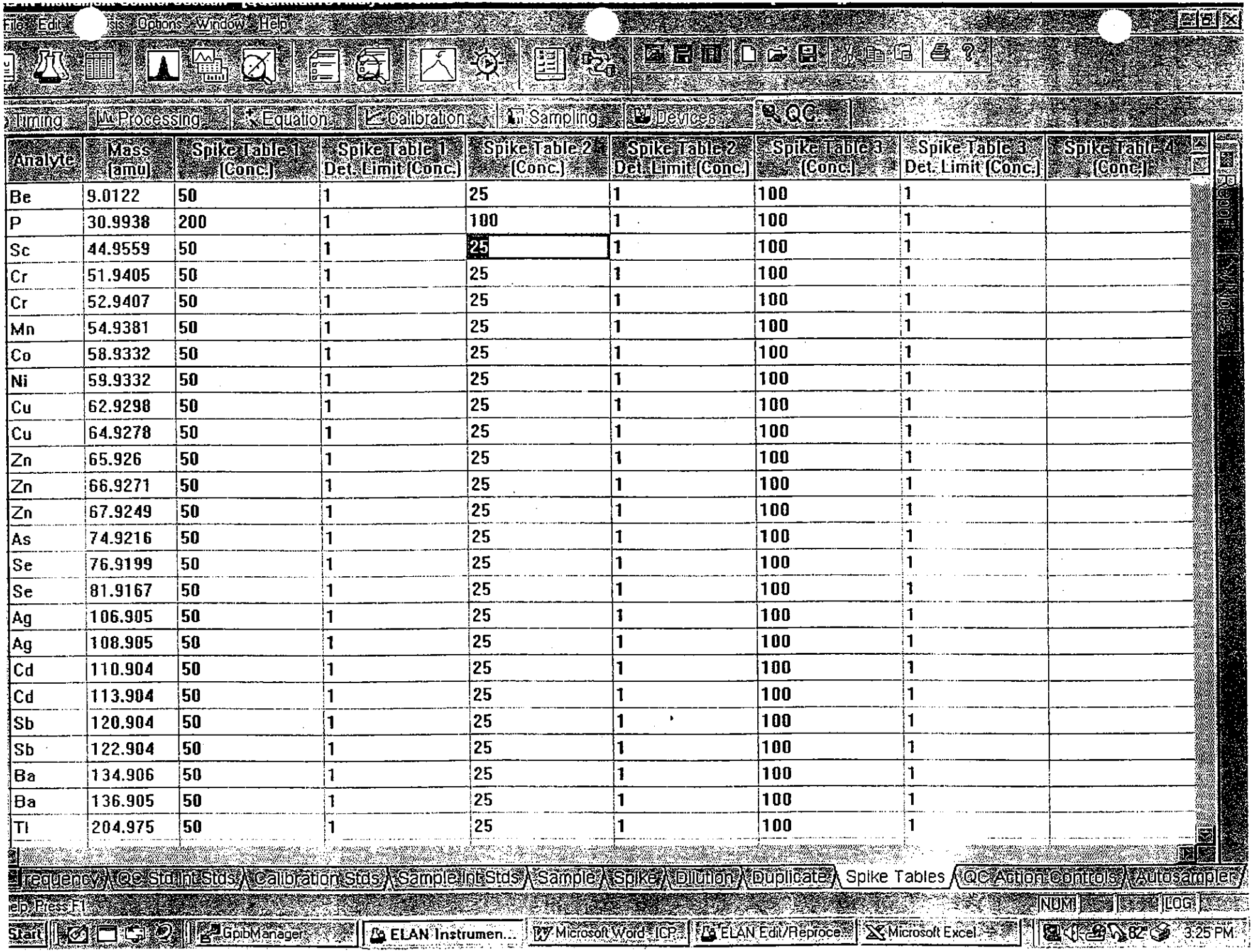
Daph Wood 6-15-04

Analyst: DBW Date: 06-15-04 **Solid Samples** ☐ / *Liquid Samples*

Loc	Batch # for sample sets	Sample Lab ID	Sample Description	Type Sample QC Spike QC Dup QC Reg Blank	Spike concentratio	Prep Volume (ml)	Aliquot (ml)	Diluted to Volume (ml)	Units
12			LRB	S		100X2			
13			LRB	SS	Table #1	100X2			
14			3361-1	S		100X2			
15			3361-2	S		100X2			
16			3361-2	SD		100X2			
17			3361-4	S		100X2			
18			3361-4	SS	Table #1	100X2			
19			3361-6	S		100X2			
Dilutions									
			LRB	S		100X2	5.0	10	
21			LRB	SS	Table #2	100X2	5.0	10	
22			3361-1	S		100X2	2.0	10	
23			LRB	S		100X2			
24			LRB*	SS	Table #1	100X2			
*1.0mL of HCl was added to the sample prep, to aid in the recovery of silver.									

Spikes are post at 0.02ml of 25ppm spiking solutions lot 021404-ABC & F in a final volume of 10ml.

Submitted for QC:	Date: 6-15-04	Time: DW ~~15:30~~ 15:55	By: DW	QC Review:	Date: 6/16/04	Time: 1800	By: BGA
Re-Test Required:	No:	Yes:	Comments:				
Resubmitted for QC:	Date:	Time:	By:	QC Review:	Date:	Time:	By:



File Edit sis Options Window Help

Timing | Processing | Equation | Calibration | Sampling | Devices | QC

Analyte	Mass (amu)	Spike Table 1 (Conc.)	Spike Table 1 Det. Limit (Conc.)	Spike Table 2 (Conc.)	Spike Table 2 Det. Limit (Conc.)	Spike Table 3 (Conc.)	Spike Table 3 Det. Limit (Conc.)	Spike Table 4 (Conc.)
Be	9.0122	50	1	25	1	100	1	
P	30.9938	200	1	100	1	100	1	
Sc	44.9559	50	1	25	1	100	1	
Cr	51.9405	50	1	25	1	100	1	
Cr	52.9407	50	1	25	1	100	1	
Mn	54.9381	50	1	25	1	100	1	
Co	58.9332	50	1	25	1	100	1	
Ni	59.9332	50	1	25	1	100	1	
Cu	62.9298	50	1	25	1	100	1	
Cu	64.9278	50	1	25	1	100	1	
Zn	65.926	50	1	25	1	100	1	
Zn	66.9271	50	1	25	1	100	1	
Zn	67.9249	50	1	25	1	100	1	
As	74.9216	50	1	25	1	100	1	
Se	76.9199	50	1	25	1	100	1	
Se	81.9167	50	1	25	1	100	1	
Ag	106.905	50	1	25	1	100	1	
Ag	108.905	50	1	25	1	100	1	
Cd	110.904	50	1	25	1	100	1	
Cd	113.904	50	1	25	1	100	1	
Sb	120.904	50	1	25	1	100	1	
Sb	122.904	50	1	25	1	100	1	
Ba	134.906	50	1	25	1	100	1	
Ba	136.905	50	1	25	1	100	1	
Tl	204.975	50	1	25	1	100	1	

Frequency | QC Std | Int Stds | Calibration Stds | Sample Int Stds | Sample | Spike | Dilution | Duplicate | Spike Tables | QC Action Controls | Autosampler

elp, Press F1 NUM LOG

Start | GpibManager | ELAN Instrumen... | Microsoft Word - ICP... | ELAN Edit/Reproce... | Microsoft Excel... | 82 | 3:25 PM

Method 6020 & 200.8 Metals Summary Report
Sample ID: Blank
Sample Date/Time: Tuesday, June 15, 2004 13:20:23
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	117114		ppb
|-	Be	9	7.7		ppb
|-	P	31	3722.1		ppb
|	Sc	45	122296.7		ppb
|	Cr	52	7387.1		ppb
|	Cr	53	656.4		ppb
|	Mn	55	374.3		ppb
|	Co	59	65.3		ppb
|	Ni	60	83.3		ppb
|	Cu	63	279.7		ppb
|	Cu	65	213		ppb
|	Zn	66	551.4		ppb
|	Zn	67	154.7		ppb
|	Zn	68	4469.5		ppb
|	As	75	-203		ppb
|	Se	77	168		ppb
|	Se	82	3.3		ppb
|>	Rh	103	355429.5		ppb
|	Ag	107	333.3		ppb
|	Ag	109	325.3		ppb
|	Cd	111	23.2		ppb
|-	Cd	114	52.8		ppb
|-	Sb	121	498		ppb
|	Sb	123	392.1		ppb
|	Ba	135	78.7		ppb
|	Ba	137	129.7		ppb
|>	Ho	165	803542.6		ppb
|	Tl	205	401.3		ppb
|-	Pb	208	3231.3		ppb
	Kr	83	76.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 1
Sample Date/Time: Tuesday, June 15, 2004 13:23:25
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	117474.7		ppb
|-	Be	9	1900.6	10.49585	ppb
|-	P	31	15638.9	50.03389	ppb
|	Sc	45	127963.3		ppb
|	Cr	52	67271	10.19349	ppb
|	Cr	53	7731	10.00711	ppb
|	Mn	55	86210	10.30032	ppb
|	Co	59	82663.3	10.25731	ppb
|	Ni	60	18645.3	10.11338	ppb
|	Cu	63	44154.1	10.32463	ppb
|	Cu	65	20968.7	10.26415	ppb
|	Zn	66	12136.2	10.40815	ppb
|	Zn	67	2140.3	10.43292	ppb
|	Zn	68	13199.4	10.35811	ppb
|	As	75	14105.2	10.20176	ppb
|	Se	77	1390.5	10.44319	ppb
|	Se	82	1551.5	10.13854	ppb
|>	Rh	103	354408.2		ppb
|	Ag	107	90720.1	10.16609	ppb
|	Ag	109	86997.8	10.21346	ppb
|	Cd	111	19640	10.09369	ppb
|-	Cd	114	45804.5	10.32851	ppb
|-	Sb	121	50597.5	8.91074	ppb
|	Sb	123	38910.3	8.91521	ppb
|	Ba	135	22368.4	10.19595	ppb
|	Ba	137	40118.4	10.31653	ppb
|>	Ho	165	801738.4		ppb
|	Tl	205	272182.2	10.38619	ppb
|-	Pb	208	360956.5	10.22785	ppb
	Kr	83	81.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 2
Sample Date/Time: Tuesday, June 15, 2004 13:26:29
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	115572		ppb
|-	Be	9	3732.5	20.99358	ppb
|-	P	31	51164.4	202.72381	ppb
|	Sc	45	127618.1		ppb
|	Cr	52	125177.8	20.41052	ppb
|	Cr	53	14704	20.22253	ppb
|	Mn	55	169607.4	20.65759	ppb
|	Co	59	163865.4	20.6909	ppb
|	Ni	60	37397.5	20.6858	ppb
|	Cu	63	86740.4	20.697	ppb
|	Cu	65	41138.3	20.58851	ppb
|	Zn	66	23699.4	21.15935	ppb
|	Zn	67	4133.3	21.27746	ppb
|	Zn	68	21810.7	21.001	ppb
|	As	75	28493.7	20.81263	ppb
|	Se	77	2526.7	20.51557	ppb
|	Se	82	3173.9	21.11568	ppb
|>	Rh	103	348370.3		ppb
|	Ag	107	180548.9	20.61752	ppb
|	Ag	109	171526.1	20.52091	ppb
|	Cd	111	39104	20.45818	ppb
|-	Cd	114	90099.7	20.67953	ppb
|-	Sb	121	111381.2	20.04855	ppb
|	Sb	123	84954.1	19.89977	ppb
|	Ba	135	44785.2	20.81057	ppb
|	Ba	137	78622.7	20.60979	ppb
|>	Ho	165	787815.5		ppb
|	Tl	205	541076.7	21.02809	ppb
|-	Pb	208	709982.1	20.56546	ppb
	Kr	83	84.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: Standard 3
Sample Date/Time: Tuesday, June 15, 2004 13:29:33
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	116003.2		ppb
|-	Be	9	17760.2	99.7517	ppb
|-	P	31	237941.7	999.45354	ppb
|	Sc	45	128800		ppb
|	Cr	52	584556.3	99.89855	ppb
|	Cr	53	70162.8	99.95478	ppb
|	Mn	55	818539.5	99.83845	ppb
|	Co	59	790590.2	99.83609	ppb
|	Ni	60	180231.6	99.8515	ppb
|	Cu	63	417423.5	99.82814	ppb
|	Cu	65	198781.1	99.85588	ppb
|	Zn	66	109729.1	99.72731	ppb
|	Zn	67	18812.6	99.70122	ppb
|	Zn	68	87185.7	99.76399	ppb
|	As	75	137445.2	99.8173	ppb
|	Se	77	11663.9	99.85257	ppb
|	Se	82	14986.3	99.76301	ppb
|>	Rh	103	348445.8		ppb
|	Ag	107	873452.4	99.85989	ppb
|	Ag	109	833710.6	99.87447	ppb
|	Cd	111	190887.3	99.89899	ppb
|-	Cd	114	434882.4	99.83124	ppb
|-	Sb	121	556395.5	100.09922	ppb
|	Sb	123	427692	100.12853	ppb
|	Ba	135	215501.2	99.81829	ppb
|	Ba	137	382115.8	99.84639	ppb
|>	Ho	165	791337.1		ppb
|	Tl	205	2577199.8	99.75576	ppb
|-	Pb	208	3451378.9	99.86412	ppb
	Kr	83	73		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 15, 2004 13:32:37
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
>	Li	6	114784.4		ppb
-	Be	9	1770.9	10.00456	ppb
-	P	31	3986.9	1.7946	ppb
|	Sc	45	123601.2		ppb
|	Cr	52	63720.9	9.99495	ppb
|	Cr	53	7354	9.8625	ppb
|	Mn	55	80138.6	9.93165	ppb
|	Co	59	77687.3	10.00055	ppb
|	Ni	60	17728.4	9.97947	ppb
|	Cu	63	41348.2	10.02983	ppb
|	Cu	65	19805.8	10.05547	ppb
|	Zn	66	11488.7	10.2114	ppb
|	Zn	67	2006.6	10.12549	ppb
|	Zn	68	12714.3	10.34598	ppb
|	As	75	13637.6	10.23402	ppb
|	Se	77	1304.1	10.1256	ppb
|	Se	82	1526.2	10.3466	ppb
>	Rh	103	341571.3		ppb
|	Ag	107	87198.5	10.13754	ppb
|	Ag	109	82586.6	10.05962	ppb
|	Cd	111	18552.1	9.89279	ppb
|-	Cd	114	42598.7	9.96524	ppb
|-	Sb	121	71061	13.15787	ppb
|	Sb	123	55226.4	13.30579	ppb
|	Ba	135	20759.6	9.9242	ppb
|	Ba	137	36911.5	9.95619	ppb
>	Ho	165	764287.8		ppb
|	Tl	205	251088.6	10.04963	ppb
|-	Pb	208	339583.3	10.09131	ppb
	Kr	83	72.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 15, 2004 13:35:41
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
>	Li	6	114682.1		ppb
-	Be	9	202.7	1.10908	ppb
-	P	31	8366.9	20.42865	ppb
|	Sc	45	123842.5		ppb
|	Cr	52	13246.8	1.05847	ppb
|	Cr	53	1345.1	1.02508	ppb
|	Mn	55	8526.8	1.00433	ppb
|	Co	59	7948.9	1.00423	ppb
|	Ni	60	1847.2	0.98747	ppb
|	Cu	63	4578.9	1.03942	ppb
|	Cu	65	2237.6	1.02955	ppb
|	Zn	66	1732.5	1.10208	ppb
|	Zn	67	345.3	1.0506	ppb
|	Zn	68	5279.9	1.13708	ppb
|	As	75	1279.8	1.0807	ppb
|	Se	77	296.7	1.16713	ppb
|	Se	82	172.1	1.13448	ppb
>	Rh	103	345561.7		ppb
|	Ag	107	9137	1.01639	ppb
|	Ag	109	8704.6	1.01373	ppb
|	Cd	111	1980.9	1.03389	ppb
|-	Cd	114	4391.5	1.00495	ppb
|-	Sb	121	8232.8	1.42032	ppb
|	Sb	123	6379.8	1.43083	ppb
|	Ba	135	2198.6	1.00041	ppb
|	Ba	137	3838.8	0.98743	ppb
>	Ho	165	777787		ppb
|	Tl	205	25723.9	0.99788	ppb
|-	Pb	208	37011.6	0.99843	ppb
	Kr	83	70		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 15, 2004 13:38:43
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	116204.4		ppb
|-	Be	9	6.7	-0.00509	ppb
|-	P	31	3535.7	-0.35535	ppb
|	Sc	45	124166.5		ppb
|	Cr	52	7372.7	0.03316	ppb
|	Cr	53	643.7	0.00799	ppb
|	Mn	55	381	0.00208	ppb
|	Co	59	70	0.00082	ppb
|	Ni	60	77	-0.00226	ppb
|	Cu	63	313	0.00989	ppb
|	Cu	65	208	0.00045	ppb
|	Zn	66	543.4	0.00656	ppb
|	Zn	67	150.7	0.00147	ppb
|	Zn	68	4387.4	0.05055	ppb
|	As	75	-132.9	0.04706	ppb
|	Se	77	169	0.04939	ppb
|	Se	82	19.3	0.10785	ppb
|>	Rh	103	345608.5		ppb
|	Ag	107	570.4	0.02841	ppb
|	Ag	109	562.7	0.02978	ppb
|	Cd	111	31.5	0.00471	ppb
|-	Cd	114	42.5	-0.00206	ppb
|-	Sb	121	1573.5	0.19974	ppb
|	Sb	123	1151.9	0.18394	ppb
|	Ba	135	85.7	0.00448	ppb
|	Ba	137	135	0.00252	ppb
|>	Ho	165	778107.6		ppb
|	Tl	205	405.7	0.00068	ppb
|-	Pb	208	3369.9	0.00713	ppb
	Kr	83	77.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 15, 2004 13:41:45
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	115558.9		ppb
|-	Be	9	9842.1	55.43794	ppb
|-	P	31	50066	201.88559	ppb
|	Sc	45	125119.7		ppb
|	Cr	52	294605	50.64755	ppb
|	Cr	53	35752.2	51.41269	ppb
|	Mn	55	403914.9	50.14542	ppb
|	Co	59	387895.4	49.86669	ppb
|	Ni	60	90723.7	51.16297	ppb
|	Cu	63	215004.1	52.32543	ppb
|	Cu	65	101225.7	51.72071	ppb
|	Zn	66	62126.2	57.28503	ppb
|	Zn	67	10498.2	56.31188	ppb
|	Zn	68	50736	56.9606	ppb
|	As	75	74960.6	55.49201	ppb
|	Se	77	5880	50.55297	ppb
|	Se	82	7560.3	51.25792	ppb
|>	Rh	103	342291.7		ppb
|	Ag	107	416166.2	48.43504	ppb
|	Ag	109	400748.7	48.86141	ppb
|	Cd	111	92187.6	49.10788	ppb
|-	Cd	114	212240.3	49.60288	ppb
|-	Sb	121	290825	53.54583	ppb
|	Sb	123	223290.8	53.50053	ppb
|	Ba	135	106716.3	50.59817	ppb
|	Ba	137	190853.5	51.04876	ppb
|>	Ho	165	772834.3		ppb
|	Tl	205	1306698.3	51.78587	ppb
|-	Pb	208	1741724.1	51.56112	ppb
	Kr	83	76		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 15, 2004 13:44:48
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	107436		ppb
|-	Be	9	88306.8	535.49424	ppb
|-	P	31	431142.1	1977.93111	ppb
|	Sc	45	123647.7		ppb
|	Cr	52	2905543.2	543.83099	ppb
|	Cr	53	326279.3	507.70644	ppb
|	Mn	55	4148489.7	548.72289	ppb
|	Co	59	3878976.1	531.00371	ppb
|	Ni	60	854730.5	513.51591	ppb
|	Cu	63	1925702.5	499.57952	ppb
|	Cu	65	930967.7	507.45176	ppb
|	Zn	66	540444.8	534.62931	ppb
|	Zn	67	92113.3	532.65868	ppb
|	Zn	68	410485.8	530.79132	ppb
|	As	75	686017.4	539.48414	ppb
|	Se	77	50778.9	476.59622	ppb
|	Se	82	66475.5	479.74399	ppb
|>	Rh	103	321399.2		ppb
|	Ag	107	1567283.1	194.27475	ppb
|	Ag	109	1582068.4	205.52404	ppb
|	Cd	111	840194.2	476.71233	ppb
|-	Cd	114	1914351.2	476.46707	ppb
|-	Sb	121	2771921.6	531.53583	ppb
|	Sb	123	2139887.8	533.9987	ppb
|	Ba	135	1000592.1	493.71694	ppb
|	Ba	137	1764844.4	491.25488	ppb
|>	Ho	165	742974.6		ppb
|	Tl	205	12114903.1	499.49648	ppb
|-	Pb	208	16047099	494.85844	ppb
	Kr	83	84.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 15, 2004 13:47:52
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	105666		ppb
|-	Be	9	19.3	0.07689	ppb
|-	P	31	11252143.8	56256.63374	ppb
|	Sc	45	123080.6		ppb
|	Cr	52	10785.2	0.9351	ppb
|	Cr	53	5412.3	8.20229	ppb
|	Mn	55	15125.7	2.11929	ppb
|	Co	59	8130.4	1.19566	ppb
|	Ni	60	4387.1	2.80553	ppb
|	Cu	63	6862	1.86007	ppb
|	Cu	65	3612.4	2.02542	ppb
|	Zn	66	5678.2	5.58744	ppb
|	Zn	67	1352.8	7.6636	ppb
|	Zn	68	6867	4.42107	ppb
|	As	75	510.7	0.57789	ppb
|	Se	77	816.7	6.88842	ppb
|	Se	82	20.3	0.13728	ppb
|>	Rh	103	297176.8		ppb
|	Ag	107	10844.3	1.41715	ppb
|	Ag	109	10242.2	1.40097	ppb
|	Cd	111	315.6	0.18201	ppb
|-	Cd	114	5956.4	1.59185	ppb
|-	Sb	121	18859.2	3.65619	ppb
|	Sb	123	14511.4	3.65936	ppb
|	Ba	135	972.7	0.46059	ppb
|	Ba	137	1646.8	0.44067	ppb
|>	Ho	165	718479.7		ppb
|	Tl	205	2597.7	0.09546	ppb
|-	Pb	208	14177.1	0.36008	ppb
	Kr	83	155		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 15, 2004 13:50:56
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	100927.7		ppb
|-	Be	9	4.7	-0.01246	ppb
|-	P	31	10128722.2	54220.75177	ppb
|	Sc	45	112739.6		ppb
|	Cr	52	58539.5	11.46296	ppb
|	Cr	53	11841.2	20.45013	ppb
|	Mn	55	81005.5	12.3636	ppb
|	Co	59	139619.2	22.12519	ppb
|	Ni	60	32951.3	22.87985	ppb
|	Cu	63	39241.2	11.72335	ppb
|	Cu	65	18927.5	11.84315	ppb
|	Zn	66	13475.8	14.95752	ppb
|	Zn	67	2918.8	18.76516	ppb
|	Zn	68	12334.5	13.37422	ppb
|	As	75	11257.2	10.39189	ppb
|	Se	77	1769.2	17.85615	ppb
|	Se	82	1058.8	8.82447	ppb
|>	Rh	103	277588.7		ppb
|	Ag	107	70129.8	10.03126	ppb
|	Ag	109	67182	10.06836	ppb
|	Cd	111	7208.8	4.72381	ppb
|-	Cd	114	22421.9	6.44999	ppb
|-	Sb	121	6526.4	1.32517	ppb
|	Sb	123	5034.7	1.32861	ppb
|	Ba	135	902.4	0.46703	ppb
|	Ba	137	1605.2	0.4712	ppb
|>	Ho	165	657912.9		ppb
|	Tl	205	737	0.01902	ppb
|-	Pb	208	9709.5	0.24607	ppb
	Kr	83	153.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 15, 2004 13:54:00
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	101778.3		ppb
|-	Be	9	49	0.27063	ppb
|-	P	31	4123	6.10607	ppb
|	Sc	45	100345.5		ppb
|	Cr	52	8210.5	0.4975	ppb
|	Cr	53	1495.8	1.72421	ppb
|	Mn	55	2252.3	0.2938	ppb
|	Co	59	1860.9	0.2815	ppb
|	Ni	60	443.7	0.25767	ppb
|	Cu	63	1223.8	0.29537	ppb
|	Cu	65	699	0.32817	ppb
|	Zn	66	546.4	0.12121	ppb
|	Zn	67	250.3	0.83731	ppb
|	Zn	68	4220	0.98566	ppb
|	As	75	213	0.33457	ppb
|	Se	77	209.3	0.81002	ppb
|	Se	82	54.2	0.42263	ppb
|>	Rh	103	282794.1		ppb
|	Ag	107	24512.3	3.40799	ppb
|	Ag	109	23145.9	3.37009	ppb
|	Cd	111	425	0.26226	ppb
|-	Cd	114	1004.4	0.27224	ppb
|-	Sb	121	2645.4	0.52566	ppb
|	Sb	123	2051.5	0.52908	ppb
|	Ba	135	178	0.0704	ppb
|	Ba	137	280.3	0.06107	ppb
|>	Ho	165	614051.3		ppb
|	Tl	205	6163.8	0.29223	ppb
|-	Pb	208	10063.3	0.28351	ppb
	Kr	83	55.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 13:57:05
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	108473.2		ppb
|-	Be	9	9	0.01161	ppb
|-	P	31	6503.1	17.47837	ppb
|	Sc	45	111951.8		ppb
|	Cr	52	7960.6	0.38717	ppb
|	Cr	53	1228.1	1.17761	ppb
|	Mn	55	1912.9	0.23324	ppb
|	Co	59	318.7	0.03989	ppb
|	Ni	60	482.4	0.27274	ppb
|	Cu	63	1194.8	0.27487	ppb
|	Cu	65	646	0.28185	ppb
|	Zn	66	1375.8	1.00295	ppb
|	Zn	67	329	1.28579	ppb
|	Zn	68	4870	1.70641	ppb
|	As	75	433.2	0.51919	ppb
|	Se	77	206	0.69971	ppb
|	Se	82	44.5	0.33314	ppb
|>	Rh	103	292718.2		ppb
|	Ag	107	1381.1	0.15098	ppb
|	Ag	109	1077.4	0.11577	ppb
|	Cd	111	526.5	0.31621	ppb
|-	Cd	114	154.6	0.03037	ppb
|-	Sb	121	63501.4	13.95537	ppb
|	Sb	123	49238.8	14.07892	ppb
|	Ba	135	432	0.20992	ppb
|	Ba	137	795.4	0.22201	ppb
|>	Ho	165	644570		ppb
|	Tl	205	1769.9	0.06882	ppb
|-	Pb	208	27035	0.86938	ppb
	Kr	83	60		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 14:00:10
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	110578.6		ppb
|-	Be	9	7479.5	44.01854	ppb
|-	P	31	41803.7	197.47578	ppb
|	Sc	45	111743.4		ppb
|	Cr	52	238749.3	48.11171	ppb
|	Cr	53	29000.8	48.89942	ppb
|	Mn	55	330262.3	48.10478	ppb
|	Co	59	326820.7	49.31608	ppb
|	Ni	60	77170.3	51.06505	ppb
|	Cu	63	177846.2	50.78249	ppb
|	Cu	65	85136.9	51.04305	ppb
|	Zn	66	45122.5	48.75452	ppb
|	Zn	67	7830.1	49.16902	ppb
|	Zn	68	38084.7	49.5475	ppb
|	As	75	56941.6	49.4781	ppb
|	Se	77	3871.5	38.7488	ppb
|	Se	82	4942.2	39.31374	ppb
|>	Rh	103	291643		ppb
|	Ag	107	179771.1	24.52997	ppb
|	Ag	109	170286.6	24.34746	ppb
|	Cd	111	66153.1	41.35821	ppb
|-	Cd	114	150952	41.396	ppb
|-	Sb	121	268087.5	58.25891	ppb
|	Sb	123	205533.6	58.12105	ppb
|	Ba	135	86643.9	48.48	ppb
|	Ba	137	154334	48.72035	ppb
|>	Ho	165	654763		ppb
|	Tl	205	1075185.3	50.28611	ppb
|-	Pb	208	1456406.8	50.88198	ppb
	Kr	83	67.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-1
Sample Date/Time: Tuesday, June 15, 2004 14:03:14
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	114531.1		ppb
|-	Be	9	20.7	0.07477	ppb
|-	P	31	42770.5	190.34355	ppb
|	Sc	45	122667.4		ppb
|	Cr	52	456487.8	87.78185	ppb
|	Cr	53	52587.2	84.42705	ppb
|	Mn	55	1466937.7	201.92553	ppb
|	Co	59	6238.2	0.88088	ppb
|	Ni	60	37799.1	23.60457	ppb
|	Cu	63	104314.1	28.10686	ppb
|	Cu	65	50261.8	28.41768	ppb
|	Zn	66	453996.2	467.46083	ppb
|	Zn	67	69476.3	418.12856	ppb
|	Zn	68	329685.1	443.00602	ppb
|	As	75	2244.2	1.9799	ppb
|	Se	77	220.3	0.72999	ppb
|	Se	82	34.1	0.23273	ppb
|>	Rh	103	308787.3		ppb
|	Ag	107	14837.9	1.87779	ppb
|	Ag	109	12328.1	1.62921	ppb
|	Cd	111	5164.4	3.03706	ppb
|-	Cd	114	5899.2	1.51541	ppb
|-	Sb	121	8737.3	1.68045	ppb
|	Sb	123	6774.2	1.69413	ppb
|	Ba	135	64030.6	33.31044	ppb
|	Ba	137	113907	33.43407	ppb
|>	Ho	165	703910.5		ppb
|	Tl	205	3767.9	0.14905	ppb
|-	Pb	208	715932.8	23.21536	ppb
	Kr	83	144		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-2
Sample Date/Time: Tuesday, June 15, 2004 14:06:16
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	115033.4		ppb
|-	Be	9	21	0.07644	ppb
|-	P	31	34354.1	146.54992	ppb
|	Sc	45	123866.7		ppb
|	Cr	52	167593.6	30.8317	ppb
|	Cr	53	20214.3	31.23436	ppb
|	Mn	55	514919.2	69.47319	ppb
|	Co	59	2844.8	0.38935	ppb
|	Ni	60	17287.6	10.55419	ppb
|	Cu	63	44186.6	11.63362	ppb
|	Cu	65	21472.9	11.84236	ppb
|	Zn	66	200612.8	202.22704	ppb
|	Zn	67	31061.3	182.7723	ppb
|	Zn	68	150044.5	194.68256	ppb
|	As	75	497	0.543	ppb
|	Se	77	207.3	0.56147	ppb
|	Se	82	-51.5	-0.40239	ppb
|>	Rh	103	314926.1		ppb
|	Ag	107	9371.3	1.14843	ppb
|	Ag	109	7411.8	0.94436	ppb
|	Cd	111	3252.1	1.87153	ppb
|-	Cd	114	1459.5	0.35923	ppb
|-	Sb	121	6279.2	1.16469	ppb
|	Sb	123	4812.8	1.15961	ppb
|	Ba	135	57782.6	29.64845	ppb
|	Ba	137	102390.6	29.63041	ppb
|>	Ho	165	713981.6		ppb
|	Tl	205	882.1	0.02256	ppb
|-	Pb	208	359147.1	11.43891	ppb
	Kr	83	215		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-2
Sample Date/Time: Tuesday, June 15, 2004 14:09:18
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	115774.8		ppb
|-	Be	9	20.3	0.0718	ppb
|-	P	31	36216.4	153.8675	ppb
|	Sc	45	126363.6		ppb
|	Cr	52	171447.4	31.29138	ppb
|	Cr	53	20488.6	31.3838	ppb
|	Mn	55	521080	69.69863	ppb
|	Co	59	2888.2	0.392	ppb
|	Ni	60	17370.8	10.51617	ppb
|	Cu	63	44683.3	11.6651	ppb
|	Cu	65	21756.9	11.89638	ppb
|	Zn	66	205266	205.1556	ppb
|	Zn	67	31631.6	184.51221	ppb
|	Zn	68	152862.1	196.70761	ppb
|	As	75	385.2	0.44999	ppb
|	Se	77	204.3	0.51568	ppb
|	Se	82	-24.2	-0.19906	ppb
|>	Rh	103	317666.8		ppb
|	Ag	107	8979.9	1.08909	ppb
|	Ag	109	7109.2	0.89631	ppb
|	Cd	111	3095	1.76502	ppb
|-	Cd	114	1899	0.46589	ppb
|-	Sb	121	6077.1	1.09307	ppb
|	Sb	123	4779.6	1.11864	ppb
|	Ba	135	58349	29.14825	ppb
|	Ba	137	103983	29.30427	ppb
|>	Ho	165	733064.2		ppb
|	Tl	205	688.7	0.01348	ppb
|-	Pb	208	364648.5	11.30785	ppb
	Kr	83	173.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-4
Sample Date/Time: Tuesday, June 15, 2004 14:12:20
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	118475.8		ppb
|-	Be	9	20.3	0.0688	ppb
|-	P	31	35532.3	148.02026	ppb
|	Sc	45	126147.5		ppb
|	Cr	52	182462.9	32.82048	ppb
|	Cr	53	21880.2	33.02915	ppb
|	Mn	55	477126.5	62.77972	ppb
|	Co	59	2663.8	0.35489	ppb
|	Ni	60	21102.7	12.57845	ppb
|	Cu	63	52223.5	13.41987	ppb
|	Cu	65	25347.9	13.64968	ppb
|	Zn	66	232454.6	228.66046	ppb
|	Zn	67	35329.9	202.88874	ppb
|	Zn	68	170206.7	216.0059	ppb
|	As	75	541.5	0.5689	ppb
|	Se	77	220.3	0.63382	ppb
|	Se	82	-6	-0.06242	ppb
|>	Rh	103	322897.9		ppb
|	Ag	107	9145	1.09137	ppb
|	Ag	109	7055.5	0.87415	ppb
|	Cd	111	2738.6	1.53417	ppb
|-	Cd	114	1284.6	0.30672	ppb
|-	Sb	121	20748.2	3.88472	ppb
|	Sb	123	15791.5	3.84378	ppb
|	Ba	135	55712.5	27.40694	ppb
|	Ba	137	98111.2	27.23405	ppb
|>	Ho	165	744273.5		ppb
|	Tl	205	412.7	0.00168	ppb
|-	Pb	208	316976.9	9.66861	ppb
	Kr	83	187		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-4
Sample Date/Time: Tuesday, June 15, 2004 14:15:23
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	112819.2		ppb
|-	Be	9	8323.9	48.02309	ppb
|-	P	31	73993.3	339.04698	ppb
|	Sc	45	121322.7		ppb
|	Cr	52	443563.6	84.97022	ppb
|	Cr	53	53381.9	85.29373	ppb
|	Mn	55	840392.5	115.16887	ppb
|	Co	59	363560.9	51.57233	ppb
|	Ni	60	104032.7	64.73041	ppb
|	Cu	63	244177.1	65.58176	ppb
|	Cu	65	117816.2	66.45671	ppb
|	Zn	66	273554.2	280.23886	ppb
|	Zn	67	42791.2	256.04824	ppb
|	Zn	68	203489.4	270.09185	ppb
|	As	75	58908.5	48.12899	ppb
|	Se	77	4373.4	41.2352	ppb
|	Se	82	5370.5	40.14844	ppb
|>	Rh	103	310171.1		ppb
|	Ag	107	381013	48.92498	ppb
|	Ag	109	361679.2	48.65139	ppb
|	Cd	111	77124.2	45.33797	ppb
|-	Cd	114	171640.1	44.26536	ppb
|-	Sb	121	275049.7	55.02802	ppb
|	Sb	123	212994.3	55.44778	ppb
|	Ba	135	149689.9	77.15315	ppb
|	Ba	137	267006.6	77.63109	ppb
|>	Ho	165	711144.7		ppb
|	Tl	205	1201065.9	51.71942	ppb
|-	Pb	208	1906384.8	61.35007	ppb
	Kr	83	179.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-6
Sample Date/Time: Tuesday, June 15, 2004 14:18:26
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	116421.1		ppb
|-	Be	9	18	0.058	ppb
|-	P	31	36612.3	157.25071	ppb
|	Sc	45	135501.9		ppb
|	Cr	52	111350.4	20.01697	ppb
|	Cr	53	11743.7	17.75441	ppb
|	Mn	55	244478.3	32.96001	ppb
|	Co	59	84130.4	11.74695	ppb
|	Ni	60	33755.2	20.64772	ppb
|	Cu	63	49523	13.04764	ppb
|	Cu	65	24033.3	13.26355	ppb
|	Zn	66	26358.4	26.13929	ppb
|	Zn	67	4489.2	25.72345	ppb
|	Zn	68	23626.6	26.20722	ppb
|	As	75	657.6	0.67171	ppb
|	Se	77	199.3	0.48353	ppb
|	Se	82	2.1	-0.00667	ppb
|>	Rh	103	315019.9		ppb
|	Ag	107	3536.4	0.41052	ppb
|	Ag	109	2032.6	0.23158	ppb
|	Cd	111	2572.7	1.47678	ppb
|-	Cd	114	618.1	0.14393	ppb
|-	Sb	121	8590.8	1.58234	ppb
|	Sb	123	6506.6	1.55615	ppb
|	Ba	135	60321.4	30.14483	ppb
|	Ba	137	108443	30.57465	ppb
|>	Ho	165	732911.6		ppb
|	Tl	205	355.3	-0.00044	ppb
|-	Pb	208	149385.8	4.57952	ppb
	Kr	83	109		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 15, 2004 14:21:28
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	110746		ppb
|-	Be	9	6.7	-0.00338	ppb
|-	P	31	3187.9	0.08606	ppb
|	Sc	45	102382.7		ppb
|	Cr	52	6501.7	0.04175	ppb
|	Cr	53	772.4	0.35296	ppb
|	Mn	55	393	0.01042	ppb
|	Co	59	89	0.00484	ppb
|	Ni	60	75	0.00254	ppb
|	Cu	63	239.7	0.00042	ppb
|	Cu	65	228.7	0.02731	ppb
|	Zn	66	537.4	0.07125	ppb
|	Zn	67	173.3	0.25617	ppb
|	Zn	68	3922.2	0.15945	ppb
|	As	75	-28.5	0.12043	ppb
|	Se	77	161.7	0.18594	ppb
|	Se	82	16.5	0.10455	ppb
|>	Rh	103	302763.8		ppb
|	Ag	107	520.4	0.03111	ppb
|	Ag	109	561	0.03921	ppb
|	Cd	111	18.8	-0.00055	ppb
|-	Cd	114	49.8	0.00127	ppb
|-	Sb	121	400	-0.00423	ppb
|	Sb	123	311.1	-0.00539	ppb
|	Ba	135	94	0.01494	ppb
|	Ba	137	147.7	0.01167	ppb
|>	Ho	165	678000.6		ppb
|	Tl	205	371	0.00147	ppb
|-	Pb	208	3159.9	0.01464	ppb
	Kr	83	57.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 15, 2004 14:24:30
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	108090.7		ppb
|-	Be	9	8588.1	51.72158	ppb
|-	P	31	41477.9	196.48534	ppb
|	Sc	45	106571.5		ppb
|	Cr	52	246362.3	49.83839	ppb
|	Cr	53	29569.3	50.04498	ppb
|	Mn	55	335858.3	49.08234	ppb
|	Co	59	332085	50.26094	ppb
|	Ni	60	78250.9	51.93211	ppb
|	Cu	63	187138.7	53.61012	ppb
|	Cu	65	89334.8	53.74607	ppb
|	Zn	66	54041	58.6722	ppb
|	Zn	67	9348.2	59.05866	ppb
|	Zn	68	44008.7	58.26212	ppb
|	As	75	64308.1	56.03232	ppb
|	Se	77	4954.4	50.13592	ppb
|	Se	82	6381.1	50.89092	ppb
|>	Rh	103	290742.2		ppb
|	Ag	107	353365.1	48.41077	ppb
|	Ag	109	335496.3	48.15021	ppb
|	Cd	111	77430.7	48.55825	ppb
|-	Cd	114	177852.2	48.92982	ppb
|-	Sb	121	237679.3	50.99571	ppb
|	Sb	123	185456.7	51.78097	ppb
|	Ba	135	90728.7	50.13626	ppb
|	Ba	137	159651	49.77011	ppb
|>	Ho	165	663042.4		ppb
|	Tl	205	1175531.2	54.29819	ppb
|-	Pb	208	1555888.4	53.68606	ppb
	Kr	83	61		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 14:48:05
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	112638.5		ppb
|-	Be	9	9.3	0.01127	ppb
|-	P	31	4774.6	8.35918	ppb
|	Sc	45	109922.7		ppb
|	Cr	52	6974.1	0.1652	ppb
|	Cr	53	673.4	0.21255	ppb
|	Mn	55	1142.4	0.119	ppb
|	Co	59	188	0.0198	ppb
|	Ni	60	288.7	0.14257	ppb
|	Cu	63	609.7	0.1058	ppb
|	Cu	65	387	0.12392	ppb
|	Zn	66	1018.1	0.59876	ppb
|	Zn	67	228	0.62279	ppb
|	Zn	68	4219.7	0.6953	ppb
|	As	75	102.1	0.23198	ppb
|	Se	77	156.3	0.16409	ppb
|	Se	82	34.8	0.25118	ppb
|>	Rh	103	296527.4		ppb
|	Ag	107	248.7	-0.004	ppb
|	Ag	109	224	-0.00671	ppb
|	Cd	111	86.3	0.04113	ppb
|-	Cd	114	106.3	0.01675	ppb
|-	Sb	121	33494.6	7.05179	ppb
|	Sb	123	25670.7	7.03091	ppb
|	Ba	135	242	0.09685	ppb
|	Ba	137	424	0.09783	ppb
|>	Ho	165	668483.8		ppb
|	Tl	205	941.7	0.02785	ppb
|-	Pb	208	15519.7	0.43993	ppb
	Kr	83	57		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 14:51:08
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	114479.9		ppb
|-	Be	9	4065.9	23.10013	ppb
|-	P	31	23211.8	97.88422	ppb
|	Sc	45	111683.3		ppb
|	Cr	52	125059.9	23.53732	ppb
|	Cr	53	14860.3	23.55725	ppb
|	Mn	55	171680.2	23.96248	ppb
|	Co	59	166847.9	24.13449	ppb
|	Ni	60	39539.9	25.06332	ppb
|	Cu	63	91819.1	25.10751	ppb
|	Cu	65	43925	25.20658	ppb
|	Zn	66	25762	26.46996	ppb
|	Zn	67	4498.5	26.71731	ppb
|	Zn	68	22767.7	26.14247	ppb
|	As	75	30293.6	25.30965	ppb
|	Se	77	2210	20.55369	ppb
|	Se	82	2719.9	20.72149	ppb
|>	Rh	103	304146.3		ppb
|	Ag	107	88361.6	11.54425	ppb
|	Ag	109	83333.8	11.40297	ppb
|	Cd	111	35745	21.42248	ppb
|-	Cd	114	82135.3	21.59798	ppb
|-	Sb	121	143784.2	29.95928	ppb
|	Sb	123	111148.5	30.13654	ppb
|	Ba	135	44934.6	24.12788	ppb
|	Ba	137	79421.5	24.0596	ppb
|>	Ho	165	681940.5		ppb
|	Tl	205	565666.2	25.39531	ppb
|-	Pb	208	767532.4	25.7079	ppb
	Kr	83	60.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: 3361-1
Sample Date/Time: Tuesday, June 15, 2004 14:54:12
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	115851.4		ppb
|-	Be	9	9	0.00785	ppb
|-	P	31	11262.1	39.39992	ppb
|	Sc	45	112297.8		ppb
|	Cr	52	89974.4	16.55977	ppb
|	Cr	53	10624.3	16.55077	ppb
|	Mn	55	290443.9	40.50868	ppb
|	Co	59	1259.8	0.17396	ppb
|	Ni	60	7553.9	4.74345	ppb
|	Cu	63	21916.6	5.93517	ppb
|	Cu	65	10594.3	5.98963	ppb
|	Zn	66	108688.3	113.10563	ppb
|	Zn	67	16555.6	100.39517	ppb
|	Zn	68	81676.6	107.27849	ppb
|	As	75	366	0.44834	ppb
|	Se	77	178	0.33934	ppb
|	Se	82	23.7	0.15888	ppb
|>	Rh	103	304549.9		ppb
|	Ag	107	4128.6	0.5029	ppb
|	Ag	109	3704.8	0.46964	ppb
|	Cd	111	978.1	0.57414	ppb
|-	Cd	114	1253	0.31725	ppb
|-	Sb	121	1893.9	0.30188	ppb
|	Sb	123	1407.2	0.28677	ppb
|	Ba	135	12838.5	6.76943	ppb
|	Ba	137	22972.9	6.835	ppb
|>	Ho	165	691825		ppb
|	Tl	205	3821.3	0.15493	ppb
|-	Pb	208	147151.8	4.78365	ppb
	Kr	83	77.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 15, 2004 14:57:15
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	108915.4		ppb
|-	Be	9	7.3	0.00124	ppb
|-	P	31	2956.2	-0.451	ppb
|	Sc	45	98787.3		ppb
|	Cr	52	6446.7	0.08415	ppb
|	Cr	53	647.4	0.19055	ppb
|	Mn	55	331.7	0.00378	ppb
|	Co	59	57.7	0.00064	ppb
|	Ni	60	60.7	-0.00496	ppb
|	Cu	63	225	-0.00106	ppb
|	Cu	65	195.3	0.01273	ppb
|	Zn	66	506.4	0.06081	ppb
|	Zn	67	153.3	0.17233	ppb
|	Zn	68	3842.2	0.2706	ppb
|	As	75	-173.1	-0.00606	ppb
|	Se	77	155	0.18336	ppb
|	Se	82	5.8	0.02532	ppb
|>	Rh	103	290695.5		ppb
|	Ag	107	440.3	0.02298	ppb
|	Ag	109	424.3	0.02277	ppb
|	Cd	111	20	0.00062	ppb
|-	Cd	114	47.5	0.00123	ppb
|-	Sb	121	349	-0.01242	ppb
|	Sb	123	280	-0.0112	ppb
|	Ba	135	79.3	0.0085	ppb
|	Ba	137	120	0.00454	ppb
|>	Ho	165	655235		ppb
|	Tl	205	681	0.01654	ppb
|-	Pb	208	3108.2	0.01655	ppb
	Kr	83	59.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 15, 2004 15:00:17
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	106939.6		ppb
|-	Be	9	8322.9	50.67204	ppb
|-	P	31	39729	193.34058	ppb
|	Sc	45	102767.5		ppb
|	Cr	52	238222.9	49.55686	ppb
|	Cr	53	28652.7	49.8625	ppb
|	Mn	55	325814.2	48.97116	ppb
|	Co	59	320143.3	49.82828	ppb
|	Ni	60	75527.5	51.55045	ppb
|	Cu	63	179315.5	52.82626	ppb
|	Cu	65	87111.3	53.90008	ppb
|	Zn	66	52963	59.1405	ppb
|	Zn	67	8952.2	58.1456	ppb
|	Zn	68	42549.8	57.90034	ppb
|	As	75	62354.5	55.8778	ppb
|	Se	77	4898.7	51.0062	ppb
|	Se	82	6205.6	50.90858	ppb
|>	Rh	103	282689.6		ppb
|	Ag	107	342712.5	48.28735	ppb
|	Ag	109	327763.8	48.3789	ppb
|	Cd	111	74596.1	48.11457	ppb
|-	Cd	114	172229.5	48.7354	ppb
|-	Sb	121	231357.6	51.50968	ppb
|	Sb	123	178675.5	51.77094	ppb
|	Ba	135	87488.2	50.17618	ppb
|	Ba	137	154617.7	50.02396	ppb
|>	Ho	165	638949.8		ppb
|	Tl	205	1142490.2	54.77132	ppb
|-	Pb	208	1493768.1	53.49205	ppb
	Kr	83	70.7		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 15:12:37
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	114343		ppb
|-	Be	9	8.3	0.00482	ppb
|-	P	31	6011.4	13.7963	ppb
|	Sc	45	113691.1		ppb
|	Cr	52	7653.6	0.26391	ppb
|	Cr	53	706	0.23818	ppb
|	Mn	55	2022.9	0.23803	ppb
|	Co	59	331	0.0398	ppb
|	Ni	60	548.4	0.3031	ppb
|	Cu	63	1033.1	0.21764	ppb
|	Cu	65	604	0.24297	ppb
|	Zn	66	1412.8	0.98481	ppb
|	Zn	67	295	0.99807	ppb
|	Zn	68	4531.2	0.97443	ppb
|	As	75	374.5	0.45501	ppb
|	Se	77	178	0.34032	ppb
|	Se	82	32.1	0.22292	ppb
|>	Rh	103	304213.9		ppb
|	Ag	107	285.3	-0.00002	ppb
|	Ag	109	254.3	-0.00333	ppb
|	Cd	111	116.7	0.058	ppb
|-	Cd	114	158.6	0.02979	ppb
|-	Sb	121	64415.4	13.25514	ppb
|	Sb	123	49664.1	13.29746	ppb
|	Ba	135	418.3	0.18708	ppb
|	Ba	137	725	0.18458	ppb
|>	Ho	165	687946		ppb
|	Tl	205	1956.6	0.07182	ppb
|-	Pb	208	28497.4	0.85718	ppb
	Kr	83	62		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: LRB
Sample Date/Time: Tuesday, June 15, 2004 15:15:42
Sample Description: Air Test Professionals, Inc.
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	113612.5		ppb
|-	Be	9	7602.9	43.55313	ppb
|-	P	31	41851.6	191.35263	ppb
|	Sc	45	114576.7		ppb
|	Cr	52	243565.1	47.58516	ppb
|	Cr	53	55679.6	91.87569	ppb
|	Mn	55	336538.3	47.54439	ppb
|	Co	59	324307.9	47.4531	ppb
|	Ni	60	75980.3	48.74841	ppb
|	Cu	63	174333.7	48.27461	ppb
|	Cu	65	84089	48.89891	ppb
|	Zn	66	45738.9	47.91865	ppb
|	Zn	67	9170.4	55.97117	ppb
|	Zn	68	37904.9	47.63496	ppb
|	As	75	55208.2	46.53308	ppb
|	Se	77	6548.8	64.46777	ppb
|	Se	82	4893.9	37.73727	ppb
|>	Rh	103	300730.6		ppb
|	Ag	107	167757.8	22.19847	ppb
|	Ag	109	160910.2	22.30812	ppb
|	Cd	111	66312.1	40.20823	ppb
|-	Cd	114	153258.6	40.75881	ppb
|-	Sb	121	273945.6	56.84281	ppb
|	Sb	123	210480.6	56.83588	ppb
|	Ba	135	87575	46.79357	ppb
|	Ba	137	156123.5	47.06068	ppb
|>	Ho	165	685692.1		ppb
|	Tl	205	1091846.4	48.76631	ppb
|-	Pb	208	1488732.6	49.66426	ppb
	Kr	83	62.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 15, 2004 15:18:45
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	107229.7		ppb
|-	Be	9	6.7	-0.00203	ppb
|-	P	31	2970.5	0.04562	ppb
|	Sc	45	95333.5		ppb
|	Cr	52	6281.6	0.08584	ppb
|	Cr	53	2998.9	4.39835	ppb
|	Mn	55	343.3	0.0068	ppb
|	Co	59	79.3	0.00429	ppb
|	Ni	60	70.7	0.003	ppb
|	Cu	63	255.7	0.00977	ppb
|	Cu	65	214.7	0.02799	ppb
|	Zn	66	532.7	0.10555	ppb
|	Zn	67	429	2.01806	ppb
|	Zn	68	3781.2	0.33338	ppb
|	As	75	-130.3	0.02827	ppb
|	Se	77	206.7	0.78196	ppb
|	Se	82	10.8	0.06677	ppb
|>	Rh	103	282886.4		ppb
|	Ag	107	696.7	0.06097	ppb
|	Ag	109	651.7	0.05813	ppb
|	Cd	111	21.2	0.00176	ppb
|-	Cd	114	58.6	0.00469	ppb
|-	Sb	121	348	-0.00987	ppb
|	Sb	123	251.3	-0.01673	ppb
|	Ba	135	79	0.00999	ppb
|	Ba	137	133.7	0.01038	ppb
|>	Ho	165	631701.2		ppb
|	Tl	205	4756	0.21608	ppb
|-	Pb	208	3169.3	0.02292	ppb
	Kr	83	61		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 15, 2004 15:21:48
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	105829.1		ppb
|-	Be	9	8240.5	50.68498	ppb
|-	P	31	38942.3	191.77632	ppb
|	Sc	45	102373.8		ppb
|	Cr	52	232704.2	49.00553	ppb
|	Cr	53	29038.6	51.19447	ppb
|	Mn	55	314816.2	47.90553	ppb
|	Co	59	313725.1	49.44419	ppb
|	Ni	60	74076.4	51.19783	ppb
|	Cu	63	177382.1	52.92217	ppb
|	Cu	65	85317	53.45369	ppb
|	Zn	66	51510.7	58.23552	ppb
|	Zn	67	8995.9	59.17994	ppb
|	Zn	68	42212.9	58.1917	ppb
|	As	75	61815.7	56.09713	ppb
|	Se	77	4844	51.07389	ppb
|	Se	82	6135.6	50.96123	ppb
|>	Rh	103	279146.8		ppb
|	Ag	107	336606	48.01669	ppb
|	Ag	109	319513.3	47.75333	ppb
|	Cd	111	73750.5	48.17063	ppb
|-	Cd	114	168613.2	48.31125	ppb
|-	Sb	121	227624	51.77439	ppb
|	Sb	123	174736.4	51.72782	ppb
|	Ba	135	84734.6	49.66051	ppb
|	Ba	137	151803.8	50.18892	ppb
|>	Ho	165	625272.9		ppb
|	Tl	205	1112547.4	54.50172	ppb
|-	Pb	208	1470228.3	53.80109	ppb
	Kr	83	72		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC #1
Sample Date/Time: Tuesday, June 15, 2004 15:32:47
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	105399.7		ppb
|-	Be	9	1533.8	9.44085	ppb
|-	P	31	3011.5	0.48236	ppb
|	Sc	45	96907.5		ppb
|	Cr	52	49968.1	9.54204	ppb
|	Cr	53	6210.5	10.22745	ppb
|	Mn	55	63011.6	9.55701	ppb
|	Co	59	62597.7	9.86371	ppb
|	Ni	60	14341.8	9.87941	ppb
|	Cu	63	34646.9	10.28789	ppb
|	Cu	65	16669.4	10.363	ppb
|	Zn	66	9653.6	10.51723	ppb
|	Zn	67	1774.9	11.03411	ppb
|	Zn	68	10518.9	10.54384	ppb
|	As	75	11122.9	10.21888	ppb
|	Se	77	1078.4	10.26452	ppb
|	Se	82	1213.6	10.06943	ppb
|>	Rh	103	279090.7		ppb
|	Ag	107	68954.2	9.81158	ppb
|	Ag	109	65434	9.75268	ppb
|	Cd	111	14792.1	9.65306	ppb
|-	Cd	114	34080.6	9.75851	ppb
|-	Sb	121	45342.6	10.30875	ppb
|	Sb	123	34769.5	10.28451	ppb
|	Ba	135	16717.2	9.82805	ppb
|	Ba	137	29693	9.84959	ppb
|>	Ho	165	621442.4		ppb
|	Tl	205	214005	10.53429	ppb
|-	Pb	208	284292.2	10.39183	ppb
	Kr	83	63		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC #2
Sample Date/Time: Tuesday, June 15, 2004 15:35:51
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	107156.1		ppb
|-	Be	9	174.7	1.01895	ppb
|-	P	31	6563.1	19.27726	ppb
|	Sc	45	99282.3		ppb
|	Cr	52	10587.6	1.02713	ppb
|	Cr	53	1449.1	1.66837	ppb
|	Mn	55	6714.2	0.97501	ppb
|	Co	59	6418.3	1.00069	ppb
|	Ni	60	1558.1	1.02961	ppb
|	Cu	63	3762.1	1.05494	ppb
|	Cu	65	1849.9	1.05287	ppb
|	Zn	66	1457.1	1.16275	ppb
|	Zn	67	348.7	1.50868	ppb
|	Zn	68	4466.8	1.41911	ppb
|	As	75	937	0.99011	ppb
|	Se	77	249.3	1.26512	ppb
|	Se	82	114.8	0.92975	ppb
|>	Rh	103	279958.2		ppb
|	Ag	107	7300	1.00181	ppb
|	Ag	109	6900.7	0.99106	ppb
|	Cd	111	1498.1	0.96397	ppb
|-	Cd	114	3482.9	0.98331	ppb
|-	Sb	121	4943.4	1.04137	ppb
|	Sb	123	3805.2	1.04117	ppb
|	Ba	135	1732.8	0.98296	ppb
|	Ba	137	3062.5	0.98238	ppb
|>	Ho	165	623628.2		ppb
|	Tl	205	21916.9	1.06141	ppb
|-	Pb	208	30889.2	1.04308	ppb
	Kr	83	63.3		ppb

Method 6020 & 200.8 Metals Summary Report
Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 15, 2004 15:38:53
Sample Description:
Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
|>	Li	6	106380.5		ppb
|-	Be	9	7	0.00039	ppb
|-	P	31	2794.1	-0.66202	ppb
|	Sc	45	98287.3		ppb
|	Cr	52	6195.8	0.08747	ppb
|	Cr	53	885.1	0.66607	ppb
|	Mn	55	318.7	0.00387	ppb
|	Co	59	60	0.00139	ppb
|	Ni	60	68	0.00182	ppb
|	Cu	63	218	-0.00036	ppb
|	Cu	65	198	0.01949	ppb
|	Zn	66	475	0.04869	ppb
|	Zn	67	180.7	0.39601	ppb
|	Zn	68	3761.1	0.38741	ppb
|	As	75	-143.1	0.01493	ppb
|	Se	77	147.3	0.16917	ppb
|	Se	82	12.5	0.08307	ppb
|>	Rh	103	278674.3		ppb
|	Ag	107	445	0.02625	ppb
|	Ag	109	426.3	0.02564	ppb
|	Cd	111	22.2	0.00266	ppb
|-	Cd	114	52.5	0.00319	ppb
|-	Sb	121	511	0.0296	ppb
|	Sb	123	384.7	0.02511	ppb
|	Ba	135	85	0.01469	ppb
|	Ba	137	126	0.00892	ppb
|>	Ho	165	617297.3		ppb
|	Tl	205	553	0.01215	ppb
|-	Pb	208	2908.2	0.01582	ppb
	Kr	83	56.7		ppb

Method 6020 & 200.8 Metals Summary Report

Sample ID: QC Std 4

Sample Date/Time: Tuesday, June 15, 2004 15:41:55

Sample Description:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Conc. Mean	Report Unit
Li	6	105029.4		ppb
Be	9	8256.8	51.1701	ppb
P	31	38438.5	190.08888	ppb
Sc	45	100019		ppb
Cr	52	230672	48.82083	ppb
Cr	53	28263.5	50.05676	ppb
Mn	55	312500.4	47.78854	ppb
Co	59	311219.8	49.29178	ppb
Ni	60	73878.1	51.31794	ppb
Cu	63	175312.2	52.56917	ppb
Cu	65	83737.4	52.7244	ppb
Zn	66	51037.1	57.98202	ppb
Zn	67	8754	57.85545	ppb
Zn	68	41603.7	57.58967	ppb
As	75	60589	55.26268	ppb
Se	77	4670.9	49.44975	ppb
Se	82	5998.9	50.07857	ppb
Rh	103	277764.7		ppb
Ag	107	333224	47.76969	ppb
Ag	109	318424.4	47.83093	ppb
Cd	111	72427.5	47.54172	ppb
Cd	114	167349.3	48.18436	ppb
Sb	121	225787.6	52.0123	ppb
Sb	123	174870	52.42783	ppb
Ba	135	84290.8	50.02997	ppb
Ba	137	149983.5	50.21447	ppb
Ho	165	617326.6		ppb
Tl	205	1099004.5	54.52809	ppb
Pb	208	1441577.1	53.42833	ppb
Kr	83	60.7		ppb

Mercury Perkin-Elmer AAWinLab

ID #	Sample_ID	Sam_Date	Sam_Time	Mean_Sig	Mean_ST	Mean_SA	Units	Wt	Dilu
1	Calib Blank	6/11/2004	12:39:58	8.15E-05			mg/L	1	
	STD1=.04ug	6/11/2004	12:41:02	0.008887			mg/L	2	
3	STD2=.08ug	6/11/2004	12:42:06	0.018055			mg/L	3	
4	STD3=.12ug	6/11/2004	12:43:11	0.026582			mg/L	4	
5	STD4=.16ug	6/11/2004	12:44:17	0.036754			mg/L	5	
6	STD5=.2ug	6/11/2004	12:45:24	0.044488			mg/L	6	
7	Reagent Blank	6/11/2004	12:47:01	5.08E-05	0.000228	0.000228	mg/L	1	
8	0.004 = DL	6/11/2004	12:48:06	0.000896	0.004019	0.004019	mg/L	7	
9	0.080 = QC STD 2	6/11/2004	12:49:13	0.018633	0.083215	0.083215	mg/L	5	
10	0.080 = QC STD 3	6/11/2004	12:50:19	0.017809	0.079549	0.079549	mg/L	6	
11	REAGENT BLANK	6/11/2004	12:51:24	-9.82E-05	-0.00044	-0.00044	mg/L	1	
12	3361-1-A	6/11/2004	12:52:57	-2.05E-05	-9.2E-05	-0.00461	mg/L	9	200
13	3361-2/3-A	6/11/2004	12:54:31	-7E-07	-3.3E-06	-0.00017	mg/L	10	200
14	3361-4-A	6/11/2004	12:56:06	-2.77E-05	-0.00012	-0.00623	mg/L	11	200
15	3361-5-A-SPK	6/11/2004	12:57:41	0.017794	0.079483	3.974161	mg/L	12	200
16	3361-6-A	6/11/2004	12:59:18	1.07E-06	4.8E-06	0.00024	mg/L	13	200
17	3361-1-B	6/11/2004	13:00:55	0.001782	0.007988	1.198252	mg/L	14	600
18	3361-2/3-B	6/11/2004	13:02:33	0.001263	0.005663	0.707897	mg/L	15	500
19	3361-4-B	6/11/2004	13:04:13	0.004568	0.020468	3.070224	mg/L	16	600
20	3361-5-B-SPK	6/11/2004	13:05:49	0.020926	0.093403	14.01039	mg/L	17	600
21	3361-6-B	6/11/2004	13:07:21	0.000171	0.000765	0.076492	mg/L	18	400
	0.004 = DL	6/11/2004	13:08:26	0.00084	0.003767	0.003767	mg/L	7	400
23	0.080 = QC STD 2	6/11/2004	13:09:33	0.017923	0.080056	0.080056	mg/L	5	400
24	REAGENT BLANK	6/11/2004	13:10:38	-8.67E-05	-0.00039	-0.00039	mg/L	1	400
25	Calib Blank	6/16/2004	10:02:28	0.000164			mg/L	1	
26	STD1=.04ug	6/16/2004	10:03:31	0.009311			mg/L	2	
27	STD2=.08ug	6/16/2004	10:04:35	0.018597			mg/L	3	
28	STD3=.12ug	6/16/2004	10:05:40	0.027207			mg/L	4	
29	STD4=.16ug	6/16/2004	10:06:46	0.034684			mg/L	5	
30	STD5=.2ug	6/16/2004	10:07:53	0.044932			mg/L	6	
31	Reagent Blank	6/16/2004	10:10:00	7.62E-05	0.000322	0.000322	mg/L	1	
32	0.004 = DL	6/16/2004	10:11:05	0.000913	0.003864	0.003864	mg/L	7	
33	0.080 = QC STD 2	6/16/2004	10:12:12	0.019404	0.084558	0.084558	mg/L	5	
34	0.080 = QC STD 3	6/16/2004	10:13:18	0.018757	0.081652	0.081652	mg/L	6	
35	REAGENT BLANK	6/16/2004	10:14:21	4.99E-05	0.000211	0.000211	mg/L	1	
36	3361-1-FH	6/16/2004	10:25:32	0.000161	0.000681	0.017036	mg/L	9	100
37	3361-2/3-FH	6/16/2004	10:27:05	0.000132	0.000556	0.013912	mg/L	10	100
38	3361-4/5-FH	6/16/2004	10:28:39	0.004906	0.020898	0.522451	mg/L	11	100
39	3361-4/5-FH-SPK	6/16/2004	10:30:14	0.023959	0.105168	2.629198	mg/L	12	100
40	0.004 = DL	6/16/2004	10:31:20	0.000995	0.004214	0.004214	mg/L	7	100
41	0.080 = QC STD 2	6/16/2004	10:32:26	0.019169	0.083501	0.083501	mg/L	5	100
	REAGENT BLANK	6/16/2004	10:33:30	0.000109	0.000461	0.000461	mg/L	1	100
43	3361-6-FH	6/16/2004	10:35:04	9.64E-05	0.000408	0.010195	mg/L	13	100

ID #	Sig 1	Std_U 1	Smp_U 1	Sig 2	Std_U 2	Smp_U 2
1	0.00008153					
	0.00888746					
3	0.01805501					
4	0.02658208					
5	0.03675401					
6	0.04448763					
7	-0.0000033	-0.0000149	-0.0000149	0.00010502	0.0004711	0.0004711
8	0.00089613	0.00401859	0.00401859			
9	0.01863318	0.08321466	0.08321466			
10	0.01780898	0.07954901	0.07954901			
11	-0.0000982	-0.0004407	-0.0004407			
12	-0.0000589	-0.0002645	-0.0132259	0.00001786	8.014E-05	0.0040074
13	-0.000023	-0.0001035	-0.0051779	0.00002158	0.0000968	0.0048402
14	-0.0000218	-0.000098	-0.0049035	-0.0000336	-0.0001511	-0.0075573
15	0.01810345	0.08085885	4.04294254	0.01748497	0.0781076	3.9053786
16	-0.0000039	-0.0000175	-0.0008795	0.00000606	0.0000272	0.0013603
17	0.00176429	0.00791009	1.18651387	0.00179921	0.0080666	1.2099911
18	0.00123929	0.00555699	0.69462379	0.00128667	0.0057694	0.7211708
19	0.00461598	0.02068178	3.1022674	0.00452052	0.0202545	3.0381797
20	0.02086338	0.09312653	13.9689807	0.02098766	0.0936786	14.05179
21	0.00013335	0.0005981	0.05981023	0.00020774	0.0009317	0.093173
	0.00084012	0.00376745	0.00376745			
23	0.01792292	0.08005587	0.08005587			
24	-0.0000867	-0.000389	-0.000389			
25	0.00016406					
26	0.00931062					
27	0.01859707					
28	0.02720668					
29	0.03468363					
30	0.04493234					
31	0.00008851	0.00037427	0.00037427	0.00006391	0.0002703	0.0002703
32	0.00091262	0.00386382	0.00386382			
33	0.01940445	0.08455756	0.08455756			
34	0.01875691	0.08165213	0.08165213			
35	0.00004991	0.00021106	0.00021106			
36	0.00016783	0.00070977	0.01774435	0.00015444	0.0006531	0.0163279
37	0.0001329	0.00056201	0.01405049	0.00013028	0.0005509	0.013773
38	0.00495954	0.02112893	0.52822332	0.00485196	0.0206672	0.5166791
39	0.02469107	0.10850244	2.71256116	0.02322757	0.1018334	2.5458354
40	0.0009951	0.00421354	0.00421354			
41	0.01916915	0.08350111	0.08350111			
	0.00010895	0.00046072	0.00046072			
43	0.00009241	0.00039075	0.00976885	0.00010046	0.0004248	0.0106202

Mercury Perkin-Elmer AAWinLab

ID #	Sample_ID	Sam_Date	Sam_Time	Mean_Sig	Mean_ST	Mean_SA	Units	Wt	Dilu
44	3361-FH-BLK	6/16/2004	10:36:41	0.000119	0.000503	0.012564	mg/L	14	100
	3361-FH-BLK-SPK	6/16/2004	10:38:20	0.015631	0.06771	1.69275	mg/L	15	100
46	0.004 = DL	6/16/2004	10:50:33	0.000933	0.003952	0.003952	mg/L	7	400
47	0.080 = QC STD 2	6/16/2004	10:51:40	0.018594	0.080921	0.080921	mg/L	5	400
48	REAGENT BLANK	6/16/2004	10:52:44	6.83E-05	0.000289	0.000289	mg/L	1	400
49	0.004 = DL	6/16/2004	11:48:02	0.000987	0.00418	0.00418	mg/L	7	400
50	0.080 = QC STD 2	6/16/2004	11:49:10	0.019071	0.083059	0.083059	mg/L	5	400
51	REAGENT BLANK	6/16/2004	11:50:17	9.53E-05	0.000403	0.000403	mg/L	1	400
52	3361-1-BH	6/16/2004	11:51:55	0.008028	0.034365	2.749192	mg/L	53	320
53	3361-2/3-BH	6/16/2004	11:53:33	0.011792	0.050776	4.062064	mg/L	54	320
54	3361-4-BH	6/16/2004	11:55:14	0.01275	0.054981	3.986122	mg/L	55	290
55	3361-5-BH-SPK	6/16/2004	11:56:53	0.031167	0.13839	10.0333	mg/L	56	290
56	3361-6-BH	6/16/2004	11:58:32	0.000388	0.001642	0.123114	mg/L	57	300
57	0.004 = DL	6/16/2004	12:00:51	0.001036	0.004387	0.004387	mg/L	7	300
58	0.080 = QC STD 3	6/16/2004	12:02:01	0.018849	0.082066	0.082066	mg/L	6	300
59	REAGENT BLANK	6/16/2004	12:03:10	0.00017	0.000719	0.000719	mg/L	1	300

ID #	Sig 1	Std_U 1	Smp_U 1	Sig 2	Std_U 2	Smp_U 2
44	0.00012919	0.0005463	0.01365766	0.00010849	0.0004588	0.0114699
	0.01563841	0.06774279	1.69356988	0.01562363	0.0676772	1.6919301
46	0.00093344	0.00395211	0.00395211			
47	0.01859379	0.08092117	0.08092117			
48	0.00006832	0.00028891	0.00028891			
49	0.00098717	0.00417992	0.00417992			
50	0.01907069	0.08305928	0.08305928			
51	0.00009526	0.00040283	0.00040283			
52	0.00794445	0.03400241	2.72019355	0.00811172	0.0347274	2.7781904
53	0.01168987	0.05032584	4.02606793	0.01189508	0.0512257	4.0980591
54	0.01272112	0.05485393	3.97691002	0.0127789	0.055108	3.9953331
55	0.03091355	0.13720892	9.94764679	0.03142025	0.1395719	10.118961
56	0.00039557	0.00167344	0.12550859	0.00038049	0.0016096	0.1207192
57	0.00103598	0.00438693	0.00438693			
58	0.0188493	0.08206632	0.08206632			
59	0.00017005	0.00071915	0.00071915			

ATP - Air Test Professionals, Inc.

1201 North Graham Avenue
Indianapolis, Indiana 46219

Phone (317) 345-1723
Fax (317) 351-0411
Email: atp_stack@sbcglobal.net

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 079

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	No. OF CONTAINERS	US EPA METHOD 5						REMARKS / PRECAUTIONS
RUN 1	Sample Filter - PM	05/19/04		Filter	Bag		1	X						
RUN 2	Sample Filter - PM	05/21/04		Filter	Bag		1	X						
RUN 3	Sample Filter - PM	05/21/04		Filter	Bag		1	X						
RUN 1	Acetone Rinse	05/19/04		AQ	4 oz		1	X						
RUN 2	Acetone Rinse	05/21/04		AQ	4 oz		1	X						
RUN 3	Acetone Rinse	05/21/04		AQ	4 oz		1	X						
BLANK	Acetone - Blank	05/21/04		AQ	4 oz		1	X						

LAB JOB NO.

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO.

REQUIRED TURNAROUND: *

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	05/21/04	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP - CARLOS BROWN	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:		SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME

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CHAIN OF CUSTODY RECORD

COMPANY: ATP	PROJECT NAME/NUMBER: Nucor Steel - PPFF Baghouse
SEND REPORT TO: Carlos Brown	BILLING INFORMATION
ADDRESS: 1201 N. Graham Ave.	BILL TO:
Indianapolis, Indiana 46219	ADDRESS: Same
PHONE: (317) 345-1723	PHONE:
FAX: (317) 351-0411	FAX: PO NO: 079

LAB JOB NO.

								EPA Methods 202								
RUN 1	MeCl2 - Rinse	05/21/04		AQ	4 oz		1	X								
RUN 2	MeCl2 - Rinse	05/21/04		AQ	4 oz		1	X								* Perform Sulfate Correction
RUN 3	MeCl2 - Rinse	05/21/04		AQ	4 oz		1	X								
RUN 1	DI H2O - Rinse	05/21/04		AQ	1000 ml		1	X								
RUN 2	DI H2O - Rinse	05/21/04		AQ	1000 ml		1	X								
RUN 3	DI H2O - Rinse	05/21/04		AQ	1000 ml		1	X								
BLANK	MeCl2 BLANK	05/21/04		AQ	4 oz		1	X								
BLANK	DI H2O BLANK	05/21/04		AQ	1000 ml		1	X								

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND:

SIGNATURE:	DATE: 05/21/04	SIGNATURE:	DATE:	SIGNATURE:	DATE:
PRINTED NAME/COMPANY:	TIME:	PRINTED NAME/COMPANY:	TIME:	PRINTED NAME/COMPANY:	TIME:
SIGNATURE:	DATE: 6/1/04	SIGNATURE:	DATE:	SIGNATURE:	DATE:
PRINTED NAME/COMPANY: Craig Mefford / Entech	TIME: 3:00	PRINTED NAME/COMPANY:	TIME:	PRINTED NAME/COMPANY:	TIME:

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CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF Baghouse
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 079

SAMPLE NO	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV	No. of Containers	EPA Method 29	REMARKS / PRECAUTIONS
BLANK	Filter BLANK (12)	05/21/04		Filter	Bag		1	X	* Analyze for 16 Metals + Mercury

LAB JOB NO.

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND: *

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE		
SIGNATURE:	05/21/04	SIGNATURE:		SIGNATURE:			
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME		
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE		
SIGNATURE:	6/10/04	SIGNATURE:		SIGNATURE:			
PRINTED NAME/COMPANY: EL Bruce Hawks	TIME 1045	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME		

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CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF Baghouse
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 079

SAMPLE NO	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER SIZE	PRESERV	NO. OF CONTAINERS	EPA METHOD 29							REMARKS/PRECAUTIONS
Run 1	0.1N HNO3 Rinse (Container 5A)	05/21/04		AQ	1000 ml		1	X							* Analyze for 16 Metals + Mercury
Run 2	0.1N HNO3 Rinse (Container 5A)	05/21/04		AQ	1000 ml		1	X							
Run 3	0.1N HNO3 Rinse (Container 5A)	05/21/04		AQ	1000 ml		1	X							
Run 1	KMNO4 (Container 5B)	05/21/04		AQ	1000 ml		1	X							
Run 2	KMNO4 (Container 5B)	05/21/04		AQ	1000 ml		1	X							
Run 3	KMNO4 (Container 5B)	05/21/04		AQ	1000 ml		1	X							
BLANK	0.1N HNO3 BLANK (8A)	05/21/04		AQ	~~1000 ml~~ 4 oz @2		2	X							
BLANK	H2O BLANK (8B)	05/21/04		AQ	~~1000 ml~~ 4 oz @2		2	X							
BLANK	HNO3/H202 BLANK (9)	05/21/04		AQ	1000 ml		1	X							
BLANK	KMNO4 BLANK (10)	05/21/04		AQ	1000 ml		1	X							

LAB JOB NO.

SAMPLER: Carlos Brown

SHIPMENT METHOD:

AIRBILL NO:

REQUIRED TURNAROUND: *

RELINQUISHED BY	DATE	RECEIVED BY	DATE	RELINQUISHED BY	DATE
SIGNATURE:	05/21/04	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME
RECEIVED BY	DATE	RECEIVED BY	DATE	RECEIVED BY	DATE
SIGNATURE:	6/10/04	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Bruce Hawks Element One	TIME 1045	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY	TIME

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CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ATP	PROJECT NAME/NUMBER:	Nucor Steel - PPFF Baghouse
SEND REPORT TO:	Carlos Brown	BILLING INFORMATION	
ADDRESS:	1201 N. Graham Ave.	BILL TO:	
	Indianapolis, Indiana 46219	ADDRESS:	Same
PHONE:	(317) 345-1723	PHONE:	
FAX:	(317) 351-0411	FAX:	PO NO: 079

LAB JOB NO.:

Analysis: EPA Method 29

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	No. OF CONTAINERS	EPA Method 29	REMARKS / PRECAUTIONS
Run 1	Filter (Container 1)	05/21/04		Filter	Bag		1	X	
Run 2	Filter (Container 1)	05/21/04		Filter	Bag		1	X	* Analyze for 16 Metals + Mercury
Run 3	Filter (Container 1)	05/21/04		Filter	Bag		1	X	
Run 1	0.1N HNO3 Rinse (Container 3)	05/21/04		AQ	1000 ml		1	X	
Run 2	0.1N HNO3 Rinse (Container 3)	05/21/04		AQ	1000 ml		1	X	
Run 3	0.1N HNO3 Rinse (Container 3)	05/21/04		AQ	1000 ml		1	X	
Run 1	HNO3/H202 (Container 4)	05/21/04		AQ	1000 ml		1	X	
Run 2	HNO3/H202 (Container 4)	05/21/04		AQ	1000 ml		1	X	
Run 3	HNO3/H202 (Container 4)	05/21/04		AQ	1000 ml		1	X	

SAMPLER: Carlos Brown | SHIPMENT METHOD: | AIRBILL NO:

REQUIRED TURNAROUND: *

1. RELINQUISHED BY	DATE	2. RELINQUISHED BY	DATE	3. RELINQUISHED BY	DATE
SIGNATURE: [signature]	05/21/04	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: ATP	TIME	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY	DATE	2. RECEIVED BY	DATE	3. RECEIVED BY	DATE
SIGNATURE: [signature]	6/10/04	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Bruce Faust EI	TIME 1045	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

n 726.1

CALIBRATION CHECK

(Post Test) per EMTIC Guideline GD-26

Company: Nucor Steel
Date: May 19, 21, 2004
Source: PPFF Baghouse - METALS
Location: Crawfordsville, Indiana

	Run 1	Run 2	Run 3	Average
Y qa =	1.005	0.957	0.991	0.984

Average result must be within 5% of Y

Result (%) **0.59**

PASSED POST CAL

Dry Gas Meter Box:

ID: A-1
Y: 0.99
Delta H: 1.829

Run 1	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.060375	88	88
2		0.060375	87	88
3		0.060375	89	88
4		0.060375	88	88
5		0.060375	88	88
6		0.060375	89	89
7		0.060375	89	89
8		0.060375	86	86
9		0.060375	83	84
10		0.060375	82	83
11		0.060375	82	83
12		0.060375	82	82
13		0.060375	83	84
14		0.060375	82	84
15		0.060375	82	82
16		0.060375	82	82
17		0.060375	82	82
18		0.060375	82	82
19		0.060375	82	82
20		0.060375	82	82
21		0.060375	82	82
22		0.060375	82	82
23		0.060375	82	82
24		0.060375	82	82
25		0.060375	81	82
26		0.060375	82	82
27		0.060375	82	82
28		0.060375	82	82
29		0.060375	82	81
30		0.060375	82	81
31		0.060375	82	81
32		0.060375	82	82
33		0.060375	84	82
34		0.060375	83	82
35		0.060375	83	82
36		0.060375	83	82
37		0.060375	83	83
38		0.060375	83	83
39		0.060375	83	83
40		0.060375	83	83
41		0.060375	83	82
42		0.060375	85	84
43		0.060375	86	87
44		0.060375	88	88
45	917.17	0.060375	88	87
46	878.276	0.060375	88	88
47		0.060375	87	87
48		0.060375	87	87

Volume	Delta H	Meter Temp
36.894	0.060	83.93

Barometric Pressure	Test Time
30.08	288.0

Y qa: 1.005

Run 2	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.06	80	81
2		0.06	81	81
3		0.06	81	81
4		0.06	82	81
5		0.06	82	81
6		0.06	83	82
7		0.06	83	83
8		0.06	85	84
9		0.06	86	84
10		0.06	87	85
11		0.06	88	86
12		0.06	89	86
13		0.06	90	86
14		0.06	90	88
15		0.06	90	89
16		0.06	91	90
17		0.06	91	90
18		0.06	91	90
19		0.06	92	91
20		0.06	92	91
21		0.06	93	91
22		0.06	93	92
23		0.06	93	92
24		0.06	93	92
25		0.06	94	93
26		0.06	94	93
27		0.06	94	94
28		0.06	95	94
29		0.06	95	94
30		0.06	96	95
31		0.06	97	96
32		0.06	97	97
33		0.06	98	97
34		0.06	98	97
35		0.06	98	98
36		0.06	99	98
37		0.06	100	99
38		0.06	100	99
39		0.06	100	99
40		0.06	100	100
41		0.06	101	101
42		0.06	101	101
43		0.06	102	102
44		0.06	102	102
45	958.47	0.06	102	102
46	917.32	0.06	102	102
47		0.06	102	102
48		0.06	103	102

Volume	Delta H	Meter Temp
41.15	0.060	92.81

Barometric Pressure	Test Time
30.08	288.0

Y qa: 0.957

Run 3	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.06	102	102
2		0.06	102	102
3		0.06	102	102
4		0.06	102	102
5		0.06	102	102
6		0.06	102	102
7		0.06	102	102
8		0.06	102	102
9		0.06	102	102
10		0.06	102	103
11		0.06	103	103
12		0.06	103	103
13		0.06	103	103
14		0.06	102	102
15		0.06	104	103
16		0.06	104	103
17		0.06	104	103
18		0.06	104	103
19		0.06	104	103
20		0.06	104	103
21		0.06	106	105
22		0.06	106	105
23		0.06	106	105
24		0.06	106	105
25		0.06	106	105
26		0.06	106	105
27		0.06	105	105
28		0.06	105	105
29		0.06	104	104
30		0.06	104	104
31		0.06	103	103
32		0.06	103	103
33		0.06	103	103
34		0.06	103	102
35		0.06	102	102
36		0.06	102	102
37		0.06	102	102
38		0.06	102	102
39		0.06	102	102
40		0.06	102	102
41		0.06	102	102
42		0.06	102	102
43		0.06	102	102
44		0.06	102	102
45	988.86	0.06	102	102
46	958.73	0.06	102	102
47		0.06	102	102
48		0.06	102	102

Volume	Delta H	Meter Temp
40.128	0.060	102.98

Barometric Pressure	Test Time
30.08	288.0

Y qa: 0.991

CALIBRATION CHECK

(Post Test) per EMTIC Guideline GD-26

Company: Nucor Steel
Date: May 19, 21, 2004
Source: PPFF Baghouse - **PM/PM10**
Location: Crawfordsville, Indiana

	Run 1	Run 2	Run 3	Average
Y qa =	0.982	0.973	0.967	0.974

Average result must be within 5% of Y

Result (%) **2.80**

PASSED POST CAL

Dry Gas Meter Box:

ID: A-1
Y: 1.002
Delta H: 1.72

Run 1	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.966	92	92
2		0.966	93	92
3		0.966	94	92
4		0.966	94	92
5		0.966	95	92
6		0.966	94	93
7		0.966	95	93
8		0.966	91	91
9		0.966	86	88
10		0.966	85	86
11		0.966	86	85
12		0.966	86	85
13		0.966	85	85
14		0.966	86	85
15		0.966	87	85
16		0.966	87	85
17		0.966	87	85
18		0.966	87	84
19		0.966	86	84
20		0.966	86	84
21		0.966	86	84
22		0.966	86	84
23		0.966	86	84
24		0.966	86	84
25		0.966	85	84
26		0.966	86	84
27		0.966	86	84
28		0.966	86	84
29		0.966	86	84
30		0.966	86	84
31		0.966	85	84
32		0.966	86	84
33		0.966	87	84
34		0.966	88	84
35		0.966	88	85
36		0.966	89	86
37		0.966	88	85
38		0.966	89	86
39		0.966	89	86
40		0.966	89	86
41		0.966	89	86
42		0.966	92	87
43		0.966	94	89
44		0.966	95	91
45	557.558	0.966	95	91
46	393.07	0.966	95	91
47		0.966	94	91
48		0.966	94	91

Volume	Delta H	Meter Temp
164.488	0.966	87.82

Barometric Pressure	Test Time
30.08	288.0

Y qa: 0.982

Run 2	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.97	82	81
2		0.97	83	81
3		0.97	84	82
4		0.97	85	83
5		0.97	85	83
6		0.97	85	83
7		0.97	89	85
8		0.97	90	86
9		0.97	90	86
10		0.97	90	88
11		0.97	90	88
12		0.97	90	89
13		0.97	91	89
14		0.97	93	91
15		0.97	95	91
16		0.97	96	92
17		0.97	96	92
18		0.97	96	92
19		0.97	96	92
20		0.97	96	93
21		0.97	97	93
22		0.97	97	94
23		0.97	97	94
24		0.97	97	94
25		0.97	98	94
26		0.97	98	94
27		0.97	98	95
28		0.97	99	95
29		0.97	99	95
30		0.97	100	96
31		0.97	101	96
32		0.97	101	97
33		0.97	102	98
34		0.97	102	99
35		0.97	102	99
36		0.97	103	99
37		0.97	103	100
38		0.97	103	100
39		0.97	103	100
40		0.97	103	100
41		0.97	103	100
42		0.97	104	100
43		0.97	104	101
44		0.97	104	101
45	724.95	0.97	104	101
46	557.78	0.97	105	101
47		0.97	105	102
48		0.97	105	102

Volume	Delta H	Meter Temp
167.17	0.966	95.06

Barometric Pressure	Test Time
30.08	288.0

Y qa: 0.973

Run 3	Volume	Delta H	DGM Inlet	DGM Outlet
1		0.98	102	101
2		0.98	102	101
3		0.98	103	102
4		0.98	103	102
5		0.98	104	102
6		0.98	105	102
7		0.98	105	103
8		0.98	106	103
9		0.98	106	103
10		0.98	106	103
11		0.98	106	103
12		0.98	106	103
13		0.98	106	103
14		0.98	106	103
15		0.98	107	104
16		0.98	108	105
17		0.98	108	105
18		0.98	108	105
19		0.98	108	105
20		0.98	108	105
21		0.98	111	106
22		0.98	110	107
23		0.98	110	108
24		0.98	111	108
25		0.98	110	107
26		0.98	110	108
27		0.98	110	108
28		0.98	110	107
29		0.98	109	107
30		0.98	109	107
31		0.98	108	106
32		0.98	108	106
33		0.98	108	105
34		0.98	108	105
35		0.98	107	105
36		0.98	107	105
37		0.98	107	105
38		0.98	106	104
39		0.98	106	104
40		0.98	106	104
41		0.98	106	104
42		0.98	106	104
43		0.98	106	104
44		0.98	106	104
45	893.90	0.98	106	103
46	723.16	0.98	106	103
47		0.98	106	103
48		0.98	106	103

Volume	Delta H	Meter Temp
170.749	0.977	105.68

Barometric Pressure	Test Time
30.08	288.0

Y qa: 0.967

Meter Box Post-Test Calibration

APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: Orifice Calibration

Box ID#: **A-1**

Date: ----------> 01/20/04
Barometric Pressure: ----> 29.98 in Hg
Critical Orifice Vacuum:-> 20 in Hg

IMPORTANT!!! For valid test results, the Critical Orifice Vacuum must be equal to or higher than the value shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					-- Ambient Temperature --		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.38	14.08	216	221	5.00	95	93	96	94	**AT-15**	**0.265**	20	88	88	88
0.38	14.08	221	226	5.00	96	94	97	95	**AT-15**	**0.265**	20	88	88	88
0.38	14.08	226	231	5.00	97	95	98	95	**AT-15**	**0.265**	20	88	88	88

********** RESULTS **********

--- DRY GAS METER ---		----- ORIFICE -----		-- DRY GAS METER --		---------- ORIFICE ----------		
				CALIBRATION FACTOR Y		CALIBRATION FACTOR dH@		
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	Value (number)	Variation (number)	Value (in H2O)	Value (mm H2O)	Variation (in H2O)
4.7731297	135.175	4.77848116	135.32659	1.00112	-0.0017	1.7248317	43.81073	0.00826
4.7645372	134.9317	4.77848116	135.32659	1.00293	0.00015	1.7155279	43.57441	-0.001
4.7581131	134.7498	4.77848116	135.32659	1.00428	0.0015	1.7093635	43.41783	-0.0072
		Average Y ------->		**1.00278**		**1.717**	43.60099	<------- Average dH@

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

Calibrated by: Carlos Brown Date: January 20, 2004

Meter Box Post-Test Calibration

APEX INSTRUMENTS
EPA Method 5
522 Series Meter Box Calibration
Post-Test Orifice Method
English Meter Box Units, English K' Factor

Filename: Orifice Calibration

Box ID#: **A-2**

Date: ----------> 02/02/04
Barometric Pressure: ----> 29.95 in Hg
Critical Orifice Vacuum:-> 20 in Hg

IMPORTANT!!! For valid test results, the Critical Orifice Vacuum must be equal to or higher than the value shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

---------- DRY GAS METER READINGS ----------							CRITICAL ORIFICE READINGS							
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Vacuum (in Hg)	-- Ambient Temperature -- Initial (deg F)	Final (deg F)	Average (deg F)
0.39	14.30	216	221	5.00	72	70	72	70	**AT-15**	**0.265**	20	71	71	71
0.39	14.30	221	226	5.00	72	70	73	71	**AT-15**	**0.265**	20	71	71	71
0.39	14.29	226	231	5.00	73	71	74	72	**AT-15**	**0.265**	20	71	71	71

********** RESULTS **********

--- DRY GAS METER ---		----- ORIFICE -----		-- DRY GAS METER --		--------- ORIFICE ---------			
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	CALIBRATION FACTOR Y Value (number)	Variation (number)	CALIBRATION FACTOR dH@ Value (in H2O)	Value (mm H2O)	Variation (in H2O)	
4.979509	141.0197	4.92528627	139.48411	0.98911	-0.001	1.836041	46.63544	0.00689	
4.9748246	140.887	4.92528627	139.48411	0.99004	-8E-05	1.8308609	46.50387	0.00171	
4.9654822	140.6225	4.92184201	139.38657	0.99121	0.00109	1.8205591	46.2422	-0.0086	
		Average Y ------->		**0.99012**		**1.829**	46.4605	<------- Average dH@	

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

Calibrated by: Carlos Brown Date: February 2, 2004

ATP – Air Test Professionals, Inc.

Pitot Tube Calibration

Reference: 40 CFR 60, Appendix A, Method 2, Section 2.1

Probe Length/ID.: **12 ft.** (w/2ft ext.) **Type-S**

External Tubing Diameter: 0.375" inches

Base to Opening Plane Distance (Pa): 0.470" inches

Base to Opening Plane Distance (Pa): 0.470" inches

	Measured	Allowable
Pa/Dt	1.25"	1.05 – 1.50 inches
Pb/Dt	1.25"	1.05 – 1.50 inches
Angle α 1	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle α 2	0 deg	$\alpha 1$ and $\alpha 2 \leq 10.0$
Angle β 1	0 deg	$\beta 1$ and $\beta 2 \leq 10.0$
Angle β 2	0 deg	$\beta 1$ and $\beta 2 \leq 10.0$
z (inches)	0.0"	0.125 inches
w (inches)	0.0"	0.031 inches
	If all criteria are met, Pitot Coefficient is 0.84	Pitot Coefficient: **0.84**

Calibrated By: Carlos Brown Date Calibrated: February 16, 2004

ATP - Air Test Professionals, Inc.

Thermocouple Calibration

Probe Length/ID: **12 ft. Type-S** Dry Gas Meter ID: A-1

Standard Used: Mercury Thermometer Temperature Scale: Degrees F

Temperature Range	Mercury Thermometer	Probe Thermometer
Hot Bath	425 deg	425 deg
Room Temperature	72 deg	72 deg
Ice Bath	30 deg	30 deg

Calibrated By: Carlos Brown Date Calibrated: February 16, 2004

ATP - Air Test Professionals, Inc.

Thermocouple Calibration

Probe Length/ID: **10 in. Hand-held** Dry Gas Meter ID: Extech Pyrometer

Standard Used: Mercury Thermometer Temperature Scale: Degrees F

Temperature Range	Mercury Thermometer	Probe Thermometer
Hot Bath	425 deg	425 deg
Room Temperature	72 deg	72 deg
Ice Bath	30 deg	30 deg

Calibrated By: Carlos Brown Date Calibrated: February 16, 2004

CARL KOONTZ ASSOCIATES

of Nashville, Tennessee

This is to acknowledge that

ANDREW YOUNG

successfully participated in Visible Emissions training on MAR 2 2 2004 and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.

Carl Koontz

Instructor

CARL KOONTZ ASSOCIATES

of Nashville, Tennessee

This is to acknowledge that

CARLOS BROWN

successfully participated in Visible Emissions training on MAR 2 2 2004 and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.

Carl Koontz

Instructor

CARL KOONTZ ASSOCIATES

of Nashville, Tennessee

This is to acknowledge that

REX KELSEY

successfully participated in Visible Emissions training on MAR 18 2004 and is qualified to evaluate Visible Emissions for a period of six (6) months from the date of certification.

Carl Koontz

Instructor

Visible Emissions Observations Form

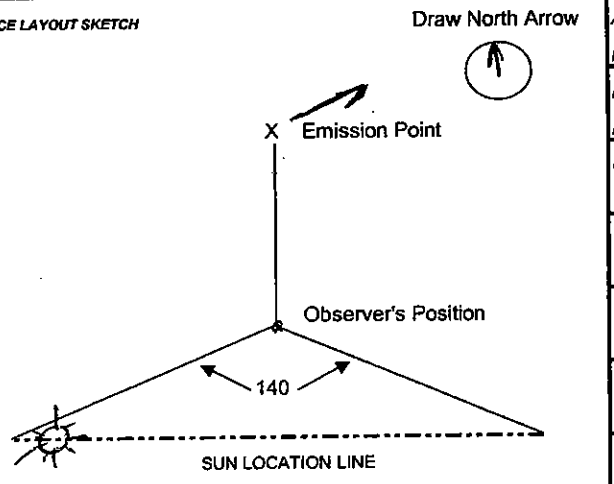
RUN NUMBER: 1

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/19/04	START TIME: 0411	END TIME: 1111
ADDRESS			
CITY / STATE / ZIP			
PHONE / SOURCE ID NUMBER			
PROCESS EQUIPMENT: Melt Shop / OPERATING MODE			
CONTROL EQUIPMENT / OPERATING MODE			
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent			
HEIGHT ABOVE GROUND LEVEL: START ~100' STOP ~100'	HEIGHT RELATIVE TO OBSERVER: START ~100' STOP ~100'		
DISTANCE FROM OBSERVER: START ~400' STOP ~400'	DIRECTION FROM OBSERVER: START NNE STOP NNE		
DESCRIBE EMISSIONS: START none	STOP none		
EMISSION COLOR: START — STOP —	PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT		
WATER DROPLETS PRESENT: (NO) YES	IF WATER DROPLET PLUME: ATTACHED / DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof Vent exit	STOP Roof vent exit		
DESCRIBE BACKGROUND: START Grey Cloudy Sky	STOP Dark Grey Sky		
BACKGROUND COLOR: START Grey STOP Dark Grey	SKY CONDITIONS: START Cloudy STOP Dark Cloudy		
WIND SPEED (MPH): START 5 STOP 5	WIND DIRECTION: START SW STOP SW		
AMBIENT TEMPERATURE (F): START 80 STOP 75	WET BULB TEMP / R.H. PERCENT		

Melt Shop Roof Vent

sec min	0	15	30	45	sec min
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	34
5	0	0	0	0	35
6	0	0	0	0	36
7	0	0	0	0	37
8	0	0	0	0	38
9	0	0	0	0	39
10	0	0	0	0	40
11	0	0	0	0	41
12	0	0	0	0	42
13	0	0	0	0	43
14	0	0	0	0	44
15	0	0	0	0	45
16	0	0	0	0	46
17	0	0	0	0	47
18	0	0	0	0	48
19	0	0	0	0	49
20	0	0	0	0	50
21	0	0	0	0	51
22	0	0	0	0	52
23	0	0	0	0	53
24	0	0	0	0	54
25	0	0	0	0	55
26	0	0	0	0	56
27	0	0	0	0	57
28	0	0	0	0	58
29	0	0	0	0	59
30	0	0	0	0	60

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; 0 = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Knoll DATE:

Comments:

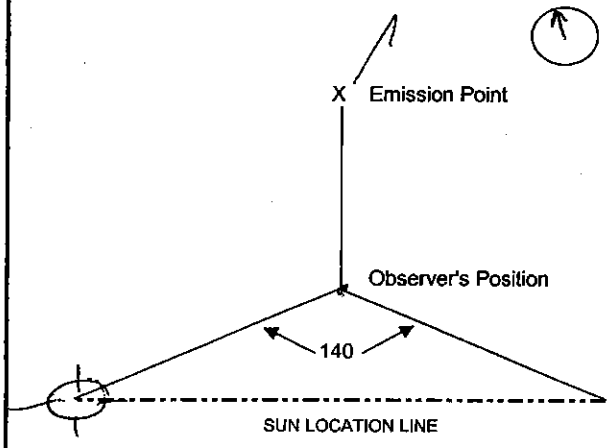
Visible Emissions Observations Form

RUN NUMBER 2

SOURCE NAME	Nucor Steel
OBSERVATION DATE	5/19/04
START TIME	0541
STOP TIME	0641
ADDRESS	
CITY / STATE / ZIP	
PHONE / SOURCE ID NUMBER	
PROCESS EQUIPMENT	Melt Shop
OPERATING MODE	
CONTROL EQUIPMENT	
OPERATING MODE	
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Roof Vent
HEIGHT ABOVE GROUND LEVEL START ~100' STOP ~100'	HEIGHT RELATIVE TO OBSERVER START ~100' STOP ~100'
DISTANCE FROM OBSERVER START ~400' STOP ~400'	DIRECTION FROM OBSERVER START NNE STOP NNE
DESCRIBE EMISSIONS START none	STOP none
EMISSION COLOR START — STOP —	PLUME TYPE: CONTINUOUS (FUGITIVE) INTERMITTENT
WATER DROPLETS PRESENT (NO) YES	IF WATER DROPLET PLUME: ATTACHED DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof Vent Exit STOP Roof vent exit	
DESCRIBE BACKGROUND START Blue-White Sky STOP Light blue Sky	
BACKGROUND COLOR START blue/white STOP light blue	SKY CONDITIONS START Cloudy STOP Mostly Cloudy
WIND SPEED (MPH) START 5 STOP 5	WIND DIRECTION START SW STOP S
AMBIENT TEMPERATURE (F) START 70 STOP 70	WET BULB TEMP. R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point → = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS
MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Andrew Young

OBSERVER'S SIGNATURE Andrew Young DATE 5/19/04

ORGANIZATION
ATP - Air Test Professionals, Inc.

CERTIFIED BY Carl Koontz DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER: 3

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 5/19/04

START TIME: 0641

STOP TIME: 0741

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: Melt Shop | OPERATING MODE

CONTROL EQUIPMENT | OPERATING MODE

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent

HEIGHT ABOVE GROUND LEVEL: START 100' STOP 100' | HEIGHT RELATIVE TO OBSERVER: START 100' STOP 100'

DISTANCE FROM OBSERVER: START 400' STOP 400' | DIRECTION FROM OBSERVER: START NNE STOP NNE

DESCRIBE EMISSIONS: START none STOP none

EMISSION COLOR: START — STOP — | PLUME TYPE: CONTINUOUS (FUGITIVE) INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof vent exit STOP Roof Vent Exit

DESCRIBE BACKGROUND: START lt. blue sky STOP Lt. blue sky

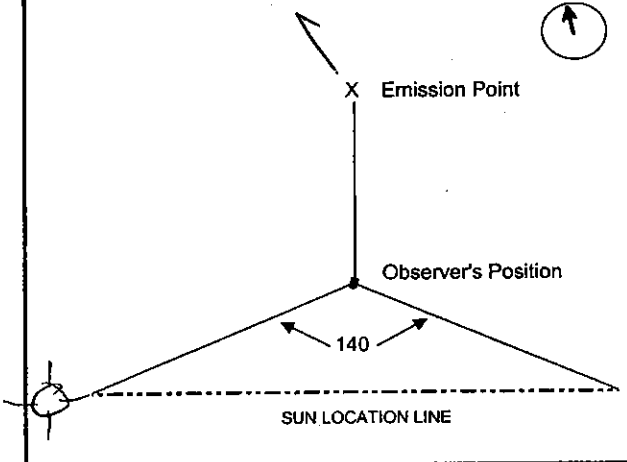
BACKGROUND COLOR: START lt.blue STOP lt.blue | SKY CONDITIONS: START Cloudy STOP Partly cloudy

WIND SPEED (MPH): START 5 STOP 0-5 | WIND DIRECTION: START SE STOP SE

AMBIENT TEMPERATURE (F): START 70 STOP 70 | WET BULB TEMP | R.H. PERCENT

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE | DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz | DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1A

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/19/04	START TIME: 0411	STOP TIME: 0511
ADDRESS			
CITY / STATE / ZIP			
PHONE / SOURCE ID NUMBER			
PROCESS EQUIPMENT: EAF Furnaces & AOD	OPERATING MODE		
CONTROL EQUIPMENT: Baghouse - East	OPERATING MODE: Normal		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent			
HEIGHT ABOVE GROUND LEVEL START ~75' STOP ~75'	HEIGHT RELATIVE TO OBSERVER START ~75' STOP ~75'		
DISTANCE FROM OBSERVER START ~500' STOP ~500'	DIRECTION FROM OBSERVER START N STOP N		
DESCRIBE EMISSIONS START none	STOP none		
EMISSION COLOR START — STOP —	PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT		
WATER DROPLETS PRESENT (NO) YES	IF WATER DROPLET PLUME: ATTACHED / DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof Vent exit STOP Roof vent exit			
DESCRIBE BACKGROUND START Grey Cloudy Sky STOP Dark Grey Sky			
BACKGROUND COLOR START Grey STOP Dark Grey	SKY CONDITIONS START Cloudy STOP Dark Cloudy		
WIND SPEED (MPH) START 5 STOP 5	WIND DIRECTION START SW STOP SW		
AMBIENT TEMPERATURE (F) START 80 STOP 75	WET BULB TEMP. / R.H. PERCENT		

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
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16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
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19	0	0	0	0	49	0	0	0	0
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22	0	0	0	0	52	0	0	0	0
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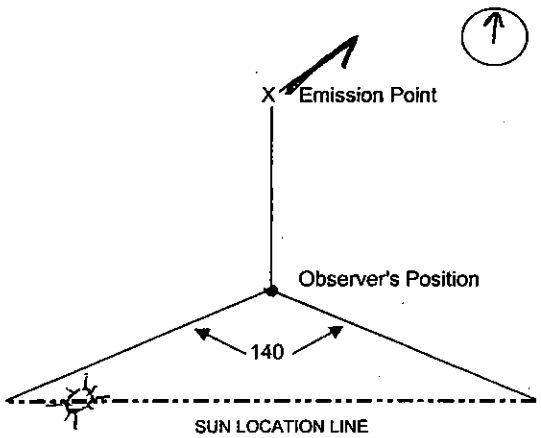
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kontz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1A

SOURCE NAME: NUCOR STEEL

OBSERVATION DATE: 5/19/04

START TIME: 0411

STOP TIME: 0511

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnaces & AOD | OPERATING MODE

CONTROL EQUIPMENT: Baghouse - West | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Monitor/Vent

HEIGHT ABOVE GROUND LEVEL: START ~75' STOP ~75' | HEIGHT RELATIVE TO OBSERVER: START ~75' STOP ~75'

DISTANCE FROM OBSERVER: START ~500' STOP ~500' | DIRECTION FROM OBSERVER: START N STOP N

DESCRIBE EMISSIONS: START none STOP none

EMISSION COLOR: START — STOP — | PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED / DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof vent exit STOP Roof Vent Exit

DESCRIBE BACKGROUND: START Grey Cloudy sky STOP Dark Grey sky

BACKGROUND COLOR: START Grey STOP Dark Grey | SKY CONDITIONS: START Cloudy STOP Dark & Cloudy

WIND SPEED (MPH): START 5 STOP 5 | WIND DIRECTION: START SW STOP SW

AMBIENT TEMPERATURE (F): START 80 STOP 75 | WET BULB TEMP. | R.H. PERCENT

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
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23	0	0	0	0	53	0	0	0	0
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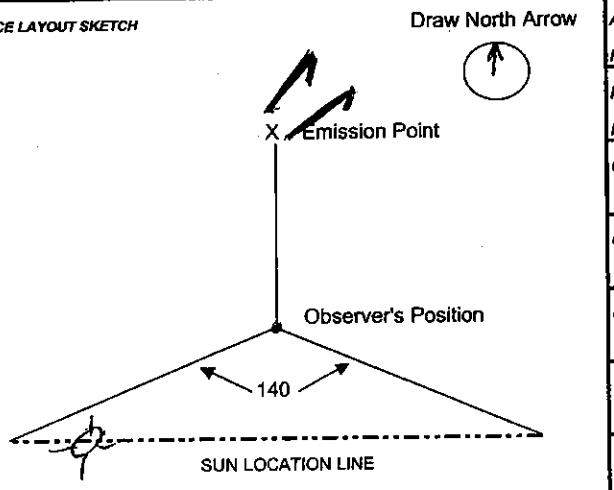
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

o = Observer's Position | = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young | DATE 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kountz | DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1B

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/19/04	START TIME: 0541	STOP TIME: 0641
ADDRESS			
CITY / STATE / ZIP			
PHONE / SOURCE ID NUMBER			
PROCESS EQUIPMENT: EAF Furnaces + AOD	OPERATING MODE		
CONTROL EQUIPMENT: Baghouse - EAST	OPERATING MODE: Normal		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent			
HEIGHT ABOVE GROUND LEVEL START ~75' STOP ~75'	HEIGHT RELATIVE TO OBSERVER START ~75' STOP ~75'		
DISTANCE FROM OBSERVER START ~500' STOP ~500'	DIRECTION FROM OBSERVER START N STOP N		
DESCRIBE EMISSIONS START none	STOP none		
EMISSION COLOR START — STOP —	PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT		
WATER DROPLETS PRESENT: (NO) YES	IF WATER DROPLET PLUME: ATTACHED DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof vent exit STOP Roof Vent Exit			
DESCRIBE BACKGROUND START blue/white sky	STOP Lt. blue sky		
BACKGROUND COLOR START blue/white STOP lt. blue	SKY CONDITIONS START cloudy STOP mostly cloudy		
WIND SPEED (MPH) START 5 STOP 5	WIND DIRECTION START SW STOP S		
AMBIENT TEMPERATURE (F) START 70 STOP 70	WET BULB TEMP. / R.H. PERCENT		

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
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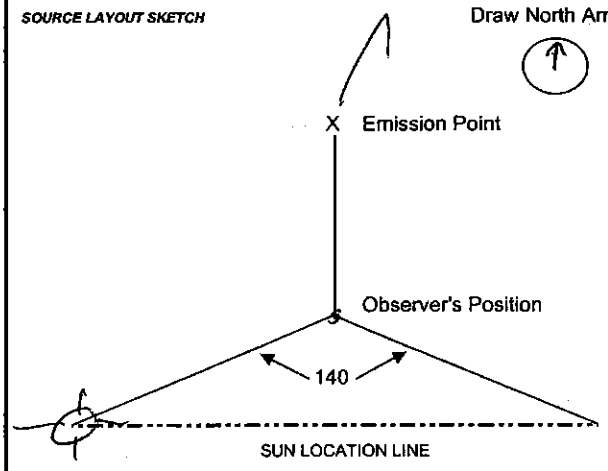
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; → = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Yorio

OBSERVER'S SIGNATURE: Andrew Yorio DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz DATE:

Comments:

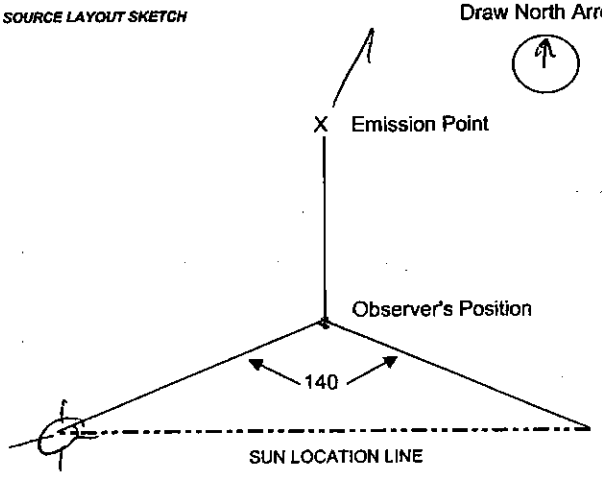
Visible Emissions Observations Form

RUN NUMBER: 1 B

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/19/04	START TIME: 0541	STOP TIME: 0641
ADDRESS			
CITY / STATE / ZIP			
PHONE / SOURCE ID NUMBER			
PROCESS EQUIPMENT: EAF Furnaces & AOD	OPERATING MODE:		
CONTROL EQUIPMENT: Baghouse - West	OPERATING MODE: Normal		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent			
HEIGHT ABOVE GROUND LEVEL START ~75' STOP ~75'	HEIGHT RELATIVE TO OBSERVER START ~75' STOP ~75'		
DISTANCE FROM OBSERVER START ~500' STOP ~500'	DIRECTION FROM OBSERVER START N STOP N		
DESCRIBE EMISSIONS START none STOP —			
EMISSION COLOR START — STOP —	PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT		
WATER DROPLETS PRESENT (NO) YES	IF WATER DROPLET PLUME: ATTACHED DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof vent ex.t STOP Roof Vent Ex.t			
DESCRIBE BACKGROUND START Blue/white Sky STOP Light blue Sky			
BACKGROUND COLOR START blue/white STOP lt. blue	SKY CONDITIONS START Cloudy STOP Mostly Cloudy		
WIND SPEED (MPH) START 5 STOP 5	WIND DIRECTION START SW STOP S		
AMBIENT TEMPERATURE (F) START 70 STOP 70	WET BULB TEMP. / R.H. PERCENT		

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Observer's Position; = Sun; = Wind; = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1C

SOURCE NAME	Nucor Steel
ADDRESS	
CITY / STATE / ZIP	
PHONE / SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF Furnaces & AOD
OPERATING MODE	
CONTROL EQUIPMENT	Baghouse - EAST
OPERATING MODE	Normal
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Roof Vent
HEIGHT ABOVE GROUND LEVEL START / STOP	75' / 75'
HEIGHT RELATIVE TO OBSERVER START / STOP	75' / 75'
DISTANCE FROM OBSERVER START / STOP	400' / 400'
DIRECTION FROM OBSERVER START / STOP	N / N
DESCRIBE EMISSIONS START / STOP	none / none
EMISSION COLOR START / STOP	— / —
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT	(NO) YES
IF WATER DROPLET PLUME: ATTACHED / DETACHED	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	Roof vent exit / Roof vent exit
DESCRIBE BACKGROUND START / STOP	lt. blue sky / lt blue sky
BACKGROUND COLOR START / STOP	lt blue / lt blue
SKY CONDITIONS START / STOP	Cloudy / Partly Cloudy
WIND SPEED (MPH) START / STOP	5 / 0-5
WIND DIRECTION START / STOP	SE / SE
AMBIENT TEMPERATURE (F) START / STOP	70 / 70
WET BULB TEMP. / R.H. PERCENT	

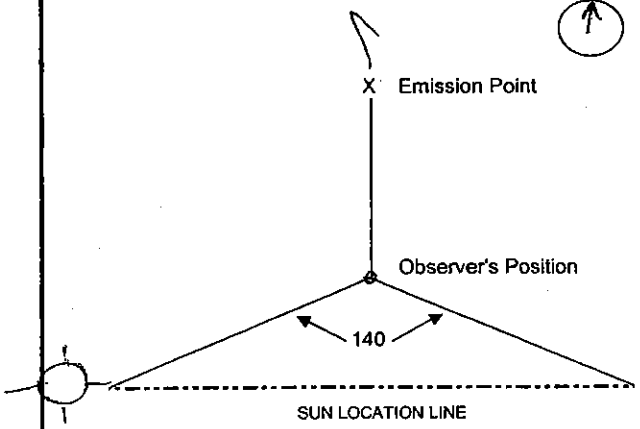
OBSERVATION DATE: 5/19/04

START TIME: 0641

STOP TIME: 0741

min	0	15	30	45	min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; O = Observer's Position; Sun = Sun; Wind = Wind; Plume = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kontz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1C

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/19/04	START TIME: 0641	STOP TIME: 0741

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnaces & AOD | OPERATING MODE

CONTROL EQUIPMENT: Baghouse - WEST | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent

HEIGHT ABOVE GROUND LEVEL: START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER: START 75' STOP 75'

DISTANCE FROM OBSERVER: START 400' STOP 400' | DIRECTION FROM OBSERVER: START N STOP N

DESCRIBE EMISSIONS: START none STOP none

EMISSION COLOR: START — STOP — | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof vent exit STOP Roof Vent Exit

DESCRIBE BACKGROUND: START lt. blue sky STOP lt. blue sky

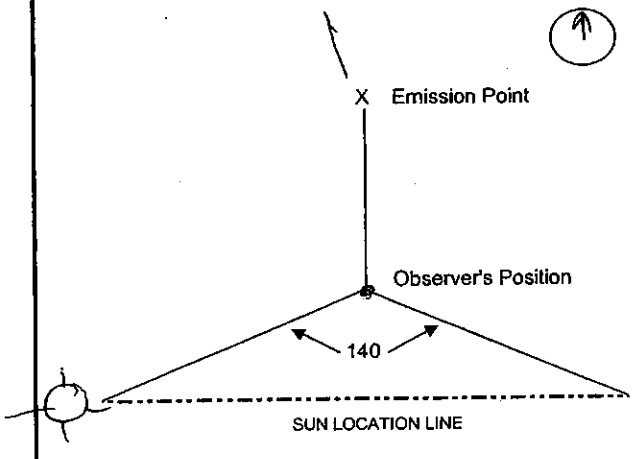
BACKGROUND COLOR: START lt blue STOP lt blue | SKY CONDITIONS: START Partly cloudy STOP cloudy

WIND SPEED (MPH): START 5 STOP 0-5 | WIND DIRECTION: START SE STOP SE

AMBIENT TEMPERATURE (F): START 70 STOP 70 | WET BULB TEMP. | R.H. PERCENT

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; → = Wind; Observer's Position = Plume; Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE | DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz | DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER | 1 D

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 5/19/09

START TIME: 0741

STOP TIME: 0827

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnace + AOD | OPERATING MODE

CONTROL EQUIPMENT: Baghouse - West | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'

DISTANCE FROM OBSERVER START 400' STOP 400' | DIRECTION FROM OBSERVER START NE STOP NE

DESCRIBE EMISSIONS START none STOP none

EMISSION COLOR START — STOP — | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof vent exit STOP Roof Vent Exit

DESCRIBE BACKGROUND START lt blue sky STOP

BACKGROUND COLOR START lt blue STOP | SKY CONDITIONS START Pt. Cldy STOP

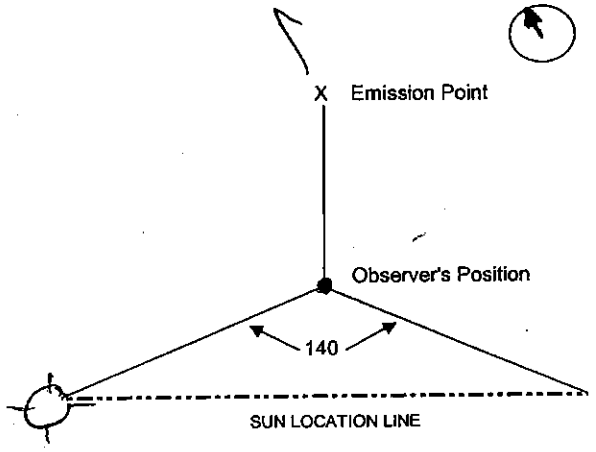
WIND SPEED (MPH) START 0-5 STOP | WIND DIRECTION START S STOP

AMBIENT TEMPERATURE (F) START 70 STOP | WET BULB TEMP | RH PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

Darkness

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE | DATE 5/19/09

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kontz | DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER: 1D

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 5/19/04

START TIME: 7:41

STOP TIME: 8:27

ADDRESS:

CITY | STATE | ZIP:

PHONE | SOURCE ID NUMBER:

PROCESS EQUIPMENT: EAF Furnace & AQD | OPERATING MODE:

CONTROL EQUIPMENT: Baghouse - EAST | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'

DISTANCE FROM OBSERVER START 400' STOP 400' | DIRECTION FROM OBSERVER START NE STOP NE

DESCRIBE EMISSIONS START none STOP

EMISSION COLOR START — STOP | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof vent exit STOP

DESCRIBE BACKGROUND START lt blue sky STOP

BACKGROUND COLOR START lt blue STOP | SKY CONDITIONS START Pt. Cloudy STOP

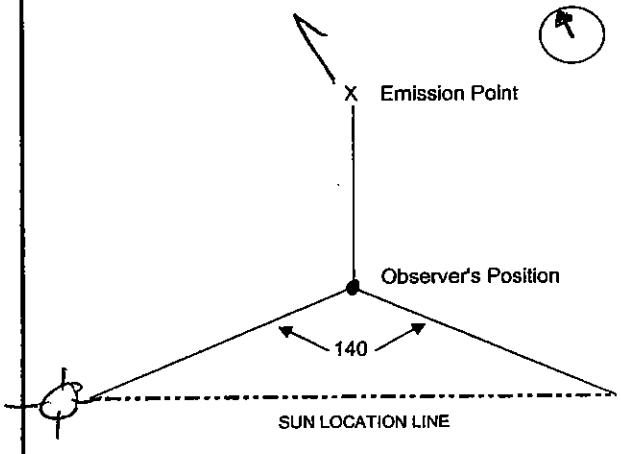
WIND SPEED (MPH) START 0-5 STOP | WIND DIRECTION START S STOP

AMBIENT TEMPERATURE (F) START 70 STOP | WET BULB TEMP | R.H. REQ'D

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

Darkness

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind

= Observer's Position; = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM:

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: | DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz | DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER	2A

SOURCE NAME	OBSERVATION DATE	START TIME	STOP TIME
Nucor Steel	5/21/04	0716	0816

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnaces & AOD | OPERATING MODE:

CONTROL EQUIPMENT: Baghouse - EAST | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof vent

HEIGHT ABOVE GROUND LEVEL: START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER: START 75' STOP 75'

DISTANCE FROM OBSERVER: START ~300' STOP ~300' | DIRECTION FROM OBSERVER: START S STOP S

DESCRIBE EMISSIONS: START none STOP none

EMISSION COLOR: START — STOP — | PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED / DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Vent exit STOP Vent Exit

DESCRIBE BACKGROUND: START Overcast sky STOP Dark overcast sky

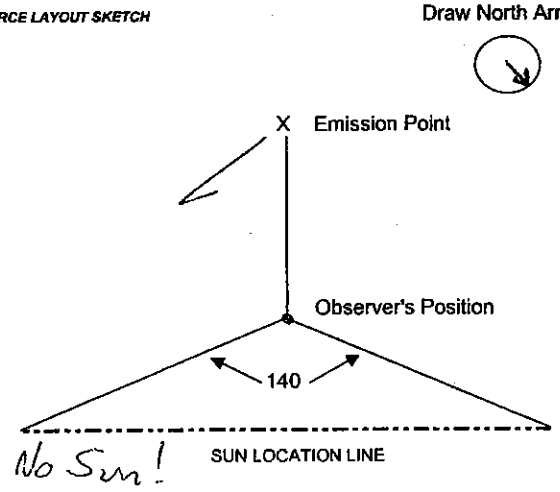
BACKGROUND COLOR: START white STOP Grey | SKY CONDITIONS: START Overcast STOP Dark overcast

WIND SPEED (MPH): START 0-5 STOP 5 | WIND DIRECTION: START W STOP W

AMBIENT TEMPERATURE (F): START 75 STOP 75 | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD: 0 | NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young | DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz | DATE:

Comments:

X = Emission Point | = Wind

= Observer's Position | = Plume

= Sun

Visible Emissions Observations Form

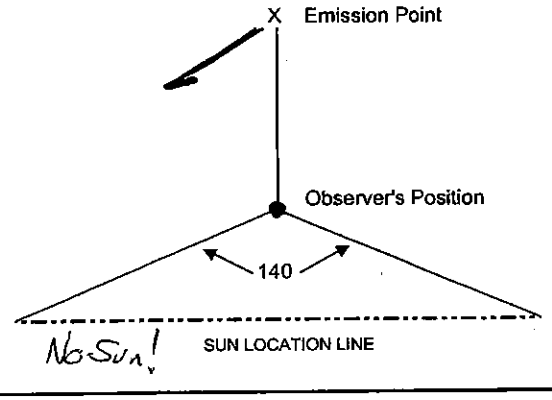
RUN NUMBER 2A

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/21/04	START TIME: 0716	STOP TIME: 0816
ADDRESS:			
CITY:	STATE:	ZIP:	
PHONE:	SOURCE ID NUMBER:		
PROCESS EQUIPMENT: EAF Furnace & AOD	OPERATING MODE:		
CONTROL EQUIPMENT: Baghouse - WEST	OPERATING MODE: Normal		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof vent			
HEIGHT ABOVE GROUND LEVEL: START 75' STOP 75'	HEIGHT RELATIVE TO OBSERVER: START 75' STOP 75'		
DISTANCE FROM OBSERVER: START ~300' STOP ~300'	DIRECTION FROM OBSERVER: START S STOP S		
DESCRIBE EMISSIONS: START none	STOP none		
EMISSION COLOR: START — STOP —	PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT		
WATER DROPLETS PRESENT: (NO) YES	IF WATER DROPLET PLUME: ATTACHED / DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof vent exit STOP Vent exit			
DESCRIBE BACKGROUND: START Overcast sky STOP Dark Overcast sky			
BACKGROUND COLOR: START White STOP Grey	SKY CONDITIONS: START Overcast STOP Dark Overcast		
WIND SPEED (MPH): START 0-5 STOP 5	WIND DIRECTION: START W STOP W		
AMBIENT TEMPERATURE (F): START 75 STOP 75	WET BULB TEMP / R.H. PERCENT		

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH

Draw North Arrow



X = Emission Point; = Wind; ● = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER 2B

SOURCE NAME	Nucor Steel
ADDRESS	
CITY / STATE / ZIP	
PHONE / SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF Furnaces + AOD
OPERATING MODE	
CONTROL EQUIPMENT	Baghouse - EAST
OPERATING MODE	Normal
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Roof vent
HEIGHT ABOVE GROUND LEVEL START / STOP	75' / 75'
HEIGHT RELATIVE TO OBSERVER START / STOP	75' / 75'
DISTANCE FROM OBSERVER START / STOP	~300' / ~300'
DIRECTION FROM OBSERVER START / STOP	S / S
DESCRIBE EMISSIONS START / STOP	none / none
EMISSION COLOR START / STOP	— / —
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT	(NO) YES
IF WATER DROPLET PLUME: ATTACHED / DETACHED	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	VENT EXIT / VENT EXIT
DESCRIBE BACKGROUND START / STOP	Dark Overcast Sky / Overcast sky
BACKGROUND COLOR START / STOP	Grey / Grey
SKY CONDITIONS START / STOP	Dark Overcast / Overcast
WIND SPEED (MPH) START / STOP	5 / 5
WIND DIRECTION START / STOP	W / W
AMBIENT TEMPERATURE (F) START / STOP	75 / 75
WET BULB TEMP. / R.H. PERCENT	

OBSERVATION DATE	START TIME	STOP TIME
5/21/04	0816	0916

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
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13	0	0	0	0	43	0	0	0	0
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15	0	0	0	0	45	0	0	0	0
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17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
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22	0	0	0	0	52	0	0	0	0
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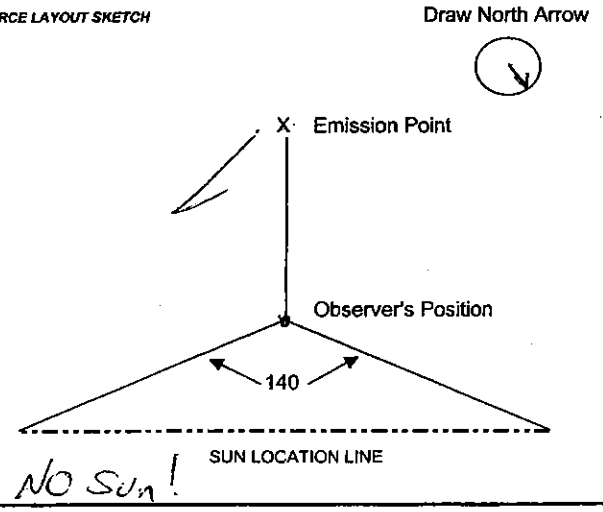
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X	= Emission Point	→	= Wind
	= Observer's Position		= Plume
	= Sun		

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kontz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 2B

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 5/21/04

START TIME: 0816

STOP TIME: 0916

ADDRESS:

CITY | STATE | ZIP:

PHONE | SOURCE ID NUMBER:

PROCESS EQUIPMENT: EAF Furnaces + AOD | OPERATING MODE:

CONTROL EQUIPMENT: Baghouse - WEST | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof vent

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'

DISTANCE FROM OBSERVER START ~300' STOP ~300' | DIRECTION FROM OBSERVER START S STOP S

DESCRIBE EMISSIONS START None STOP None

EMISSION COLOR START — STOP — | PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Vent exit STOP Vent Exit

DESCRIBE BACKGROUND START Dark overcast sky STOP Overcast sky

BACKGROUND COLOR START Grey STOP Grey | SKY CONDITIONS START Dk overcast STOP Overcast

WIND SPEED (MPH) START 5 STOP 5 | WIND DIRECTION START W STOP W

AMBIENT TEMPERATURE (F) START 75 STOP 75 | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
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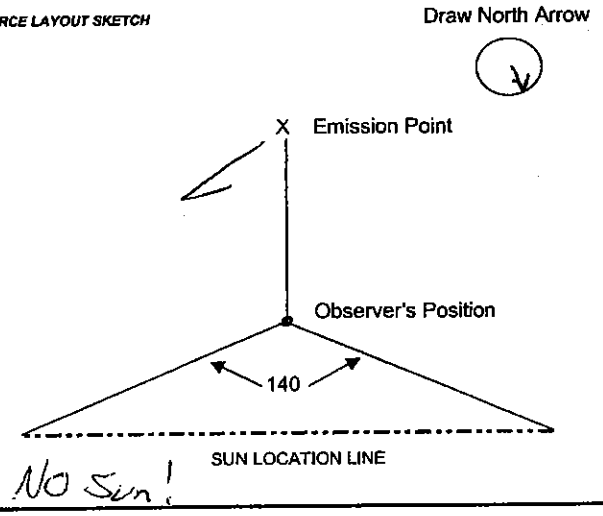
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

= Observer's Position | = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young | DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz | DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 2C

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/21/04	START TIME: 0916 — STOP TIME: 1021
ADDRESS		
CITY / STATE / ZIP		
PHONE / SOURCE ID NUMBER		
PROCESS EQUIPMENT: EAF Furnaces + AOD / OPERATING MODE		
CONTROL EQUIPMENT: Baghouse — East / OPERATING MODE: Normal		
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof vent		
HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' / HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'		
DISTANCE FROM OBSERVER START 300' STOP 300' / DIRECTION FROM OBSERVER START S STOP S		
DESCRIBE EMISSIONS START None STOP none		
EMISSION COLOR START — STOP — / PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT		
WATER DROPLETS PRESENT: (NO) YES / IF WATER DROPLET PLUME: ATTACHED DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Vent Exit STOP vent exit		
DESCRIBE BACKGROUND START Overcast sky STOP overcast sky		
BACKGROUND COLOR START Grey STOP grey / SKY CONDITIONS START overcast STOP Cloudy		
WIND SPEED (MPH) START 5 STOP 5-10 / WIND DIRECTION START W STOP W		
AMBIENT TEMPERATURE (F) START 75 STOP 80 / WET BULB TEMP. / R.H. PERCENT		

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
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12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
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17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
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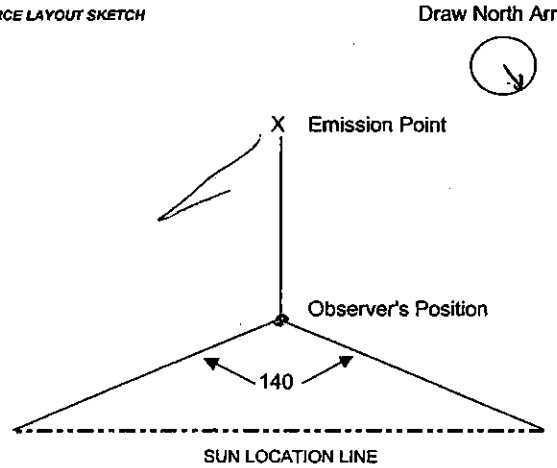
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young — DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kuntz — DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 2C

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/21/04	START TIME: 0916	STOP TIME: 1021
ADDRESS			
CITY / STATE / ZIP			
PHONE / SOURCE ID NUMBER			
PROCESS EQUIPMENT: EAF Furnaces + AOD / OPERATING MODE			
CONTROL EQUIPMENT: Baghouse - West / OPERATING MODE: Normal			
DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vent			
HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' / HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'			
DISTANCE FROM OBSERVER START 300' STOP 300' / DIRECTION FROM OBSERVER START S STOP S			
DESCRIBE EMISSIONS START None STOP none			
EMISSION COLOR START — STOP — / PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT			
WATER DROPLETS PRESENT: (NO) YES / IF WATER DROPLET PLUME: ATTACHED DETACHED			
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Vent Exit STOP vent exit			
DESCRIBE BACKGROUND START Overcast Sky STOP Mostly Cloudy sky			
BACKGROUND COLOR START Grey STOP white/grey / SKY CONDITIONS START Overcast STOP Mostly cloudy			
WIND SPEED (MPH) START 5 STOP 5-10 / WIND DIRECTION START W STOP W			
AMBIENT TEMPERATURE (F) START 75 STOP 80 / WET BULB TEMP. / R.H. PERCENT			

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
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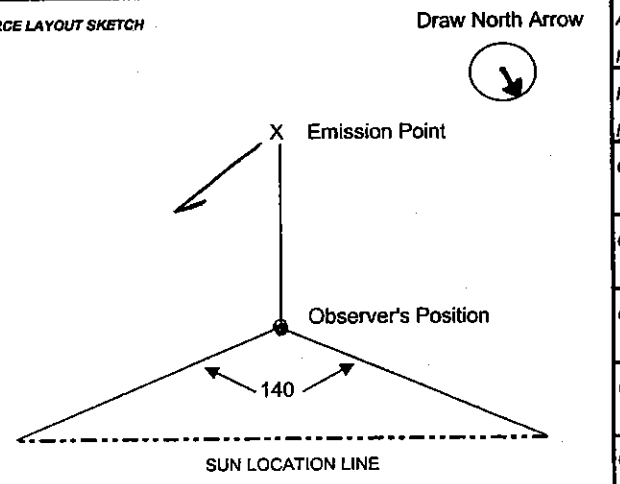
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Wind; = Observer's Position; = Plume; = Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kountz DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER: 2D

SOURCE NAME: Nucor Steel	OBSERVATION DATE: 5/21/04	START TIME: 1030	STOP TIME: 1130

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnaces & AOD | OPERATING MODE:

CONTROL EQUIPMENT: Baghouse - East | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vents

HEIGHT ABOVE GROUND LEVEL: START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER: START 75' STOP 75'

DISTANCE FROM OBSERVER: START ~400' STOP ~400' | DIRECTION FROM OBSERVER: START N STOP N

DESCRIBE EMISSIONS: START None STOP none

EMISSION COLOR: START — STOP — | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED: START Roof vent exit STOP Vent exit

DESCRIBE BACKGROUND: START Mostly Cloudy sky STOP Mostly Cloudy sky

BACKGROUND COLOR: START White/grey STOP grey | SKY CONDITIONS: START Mostly Cloudy STOP Mostly Cloudy

WIND SPEED (MPH): START 5-10 STOP 5-10 | WIND DIRECTION: START W STOP W

AMBIENT TEMPERATURE (F): START 80 STOP 80 | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
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25	0	0	0	0	55	0	0	0	0
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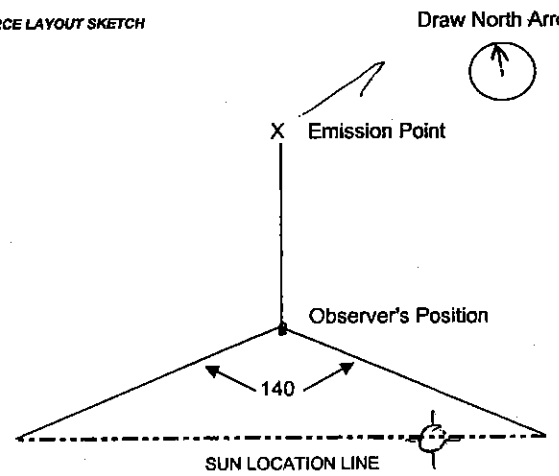
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD: 0 | NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young | DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kuntz | DATE:

Comments:

X = Emission Point; = Wind

= Observer's Position; = Plume

= Sun

Visible Emissions Observations Form

RUN NUMBER: 2D

SOURCE NAME: Nucor Steel

OBSERVATION DATE: 5/21/04

START TIME: 10 30

STOP TIME: 1130

ADDRESS

CITY | STATE | ZIP

PHONE | SOURCE ID NUMBER

PROCESS EQUIPMENT: EAF Furnaces & AOD | OPERATING MODE

CONTROL EQUIPMENT: Baghouse - West | OPERATING MODE: Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions): Roof Vents

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' | HEIGHT RELATIVE TO OBSERVER START 75' STOP 75'

DISTANCE FROM OBSERVER START ~400' STOP ~400' | DIRECTION FROM OBSERVER START N STOP N

DESCRIBE EMISSIONS START None STOP none

EMISSION COLOR START — STOP — | PLUME TYPE: (CONTINUOUS) FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT: (NO) YES | IF WATER DROPLET PLUME: ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof vent exit STOP vent exit

DESCRIBE BACKGROUND START Mostly Cloudy sky STOP mostly cloudy sky

BACKGROUND COLOR START white/grey STOP grey | SKY CONDITIONS START Mostly Cloudy STOP Cloudy

WIND SPEED (MPH) START 5-10 STOP 5-10 | WIND DIRECTION START W STOP W

AMBIENT TEMPERATURE (F) START 80 STOP 80 | WET BULB TEMP. | R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
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22	0	0	0	0	52	0	0	0	0
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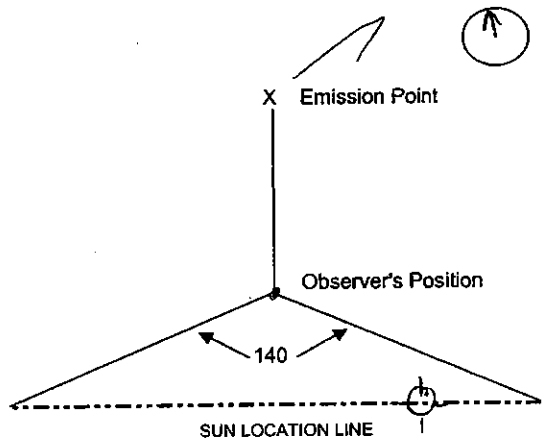
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point | = Wind

= Observer's Position | = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): Andrew Young

OBSERVER'S SIGNATURE: Andrew Young | DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Kountz | DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER 3A

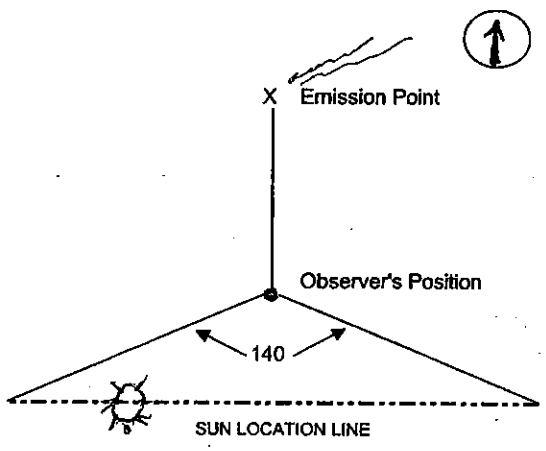
SOURCE NAME	NUCOR STEEL
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF & AOD
OPERATING MODE	NORMAL
CONTROL EQUIPMENT	BAGHOUSE - EAST
OPERATING MODE	NORMAL
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	ROOF MONITORS
HEIGHT ABOVE GROUND LEVEL START	75' STOP 75'
HEIGHT RELATIVE TO OBSERVER START	75' STOP 75'
DISTANCE FROM OBSERVER START	200yd STOP 200yd
DIRECTION FROM OBSERVER START	NE STOP NE
DESCRIBE EMISSIONS START	N/A STOP N/A
EMISSION COLOR START	N/A STOP N/A
PLUME TYPE:	CONTINUOUS FUGITIVE INTERMITTENT
WATER DROPLETS PRESENT	(NO) YES
IF WATER DROPLET PLUME:	ATTACHED DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	ROOF MONITOR STOP ROOF MONITOR
DESCRIBE BACKGROUND START	Mostly Cloudy Sky STOP Mostly Cloudy Sky
BACKGROUND COLOR START	Gray STOP Gray
SKY CONDITIONS START	MC STOP MC
WIND SPEED (MPH) START	5 mph STOP 5mph
WIND DIRECTION START	E STOP E
AMBIENT TEMPERATURE (F) START	85 STOP 85
WET BULB TEMP.	R.H. PERCENT

OBSERVATION DATE 05 - 21 - 04

START TIME 1320 **STOP TIME** 1420

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

= Observer's Position = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) CARLOS BROWN

OBSERVER'S SIGNATURE [signature] DATE 05 - 21 - 04

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY CARL KOONTZ DATE

Comments:

Visible Emissions Observations Form

RUN NUMBER 3A

SOURCE NAME	NUCOR STEEL
ADDRESS	
CITY	New Forensville
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & AOD
OPERATING MODE	Normal
CONTROL EQUIPMENT	(WEST) PPFF BAGHOUSE
OPERATING MODE	Normal
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Roof Monitors
HEIGHT ABOVE GROUND LEVEL START	75' STOP 75'
HEIGHT RELATIVE TO OBSERVER START	75' STOP 75'
DISTANCE FROM OBSERVER START / STOP	
DIRECTION FROM OBSERVER START	NE STOP NE
DESCRIBE EMISSIONS START	N/A STOP N/A
EMISSION COLOR START	N/A STOP N/A
PLUME TYPE:	CONTINUOUS / FUGITIVE / INTERMITTENT
WATER DROPLETS PRESENT	(NO) / YES
IF WATER DROPLET PLUME:	ATTACHED / DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	Roof Monitors STOP Roof Monitors
DESCRIBE BACKGROUND START	Cloudy Sky STOP Cloudy Sky
BACKGROUND COLOR START	Gray STOP Gray
SKY CONDITIONS START	Cloudy STOP Cloudy
WIND SPEED (MPH) START	5 STOP 5
WIND DIRECTION START	E STOP E
AMBIENT TEMPERATURE (F) START	85 STOP 85
WET BULB TEMP	RH PERCENT

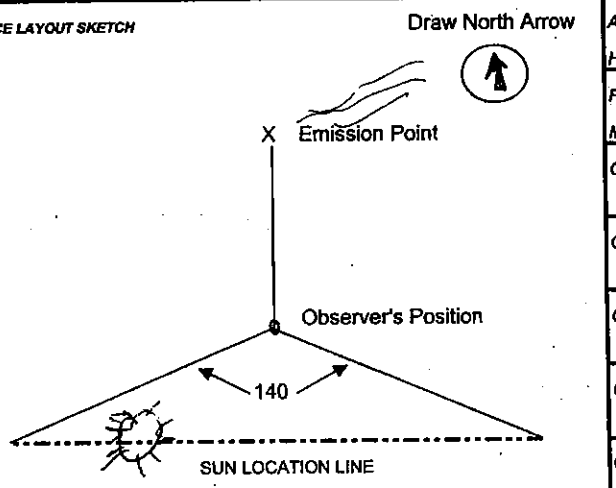
OBSERVATION DATE 05 - 21 - 04

START TIME 1320

STOP TIME 1420

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

= Observer's Position = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Amos Brown

OBSERVER'S SIGNATURE

DATE 05 - 21 - 04

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY Art Koontz

DATE 05-2

Comments:

Visible Emissions Observations Form

RUN NUMBER 3B

SOURCE NAME	NUCOR STEEL
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & AOD
OPERATING MODE	NORMAL
CONTROL EQUIPMENT	BAGHOUSE - EAST
OPERATING MODE	NORMAL
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	ROOF MONITORS
HEIGHT ABOVE GROUND LEVEL START	75' STOP 75'
HEIGHT RELATIVE TO OBSERVER START	75' STOP 75'
DISTANCE FROM OBSERVER START	2000yd STOP 2000yd
DIRECTION FROM OBSERVER START	NE STOP NE
DESCRIBE EMISSIONS START	N/A STOP N/A
EMISSION COLOR START	N/A STOP N/A
PLUME TYPE:	CONTINUOUS / FUGITIVE / INTERMITTENT
WATER DROPLETS PRESENT	(NO) / YES
IF WATER DROPLET PLUME:	ATTACHED / DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	ROOF MONITOR STOP ROOF Monitor
DESCRIBE BACKGROUND START	Cloudy STOP Cloudy
BACKGROUND COLOR START	GRAY STOP GRAY
SKY CONDITIONS START	Cloudy STOP Cloudy
WIND SPEED (MPH) START	5 STOP 5
WIND DIRECTION START	E STOP E
AMBIENT TEMPERATURE (F) START	85 STOP 85
WET BULB TEMP.	(F) PERCENT

OBSERVATION DATE	START TIME	STOP TIME
05 -21 -04	1422	1522

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
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18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
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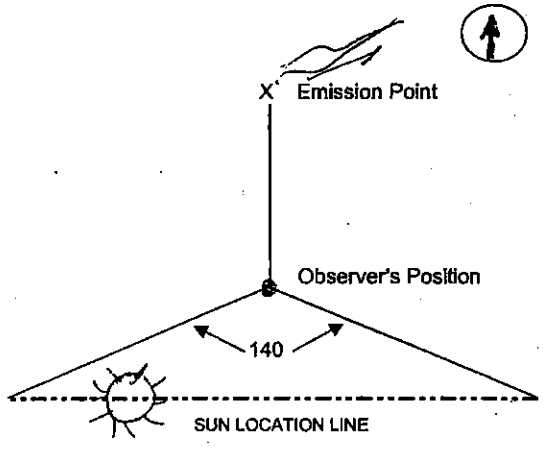
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X	= Emission Point	=	Wind
	= Observer's Position	=	Plume
☼	= Sun		

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE: 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): CARLOS BROWN

OBSERVER'S SIGNATURE: [signature] DATE: 05-21-04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: CARL KOONTZ DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER 3B

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 05 - 21 - 04	**START TIME** 1422	**STOP TIME** 1522

ADDRESS

CITY Crawfordsville **STATE** IN **ZIP**

PHONE **SOURCE ID NUMBER**

PROCESS EQUIPMENT EAF's & AOD **OPERATING MODE** Normal

CONTROL EQUIPMENT BAGHOUSE - WEST **OPERATING MODE**

DESCRIBE EMISSION POINT (Stack Exit Dimensions) ROOF MONITORS

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' **HEIGHT RELATIVE TO OBSERVER** START 75' STOP 75'

DISTANCE FROM OBSERVER START 200 yd STOP 200 yd **DIRECTION FROM OBSERVER** START NE STOP NE

DESCRIBE EMISSIONS START N/A STOP N/A

EMISSION COLOR START N/A STOP N/A **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START ROOF MONITOR STOP ROOF MONITOR

DESCRIBE BACKGROUND START Mostly Cloudy Sky STOP Cloudy Sky

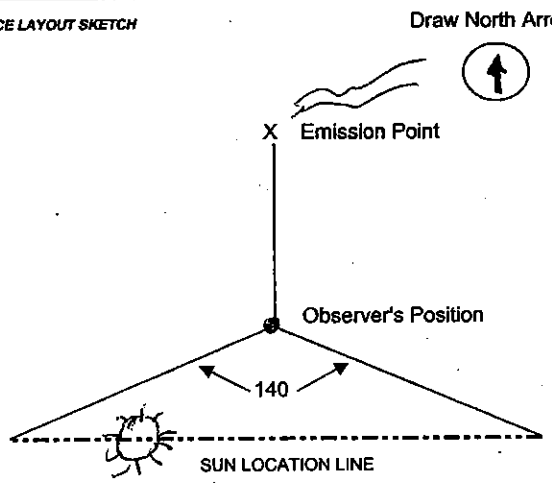
BACKGROUND COLOR START Gray STOP Gray **SKY CONDITIONS** START Cloudy STOP Cloudy

WIND SPEED (MPH) START 5 STOP 5 **WIND DIRECTION** START E STOP E

AMBIENT TEMPERATURE (F) START 85 STOP 85 WET BULB TEMP. R.H. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Chris Brown

OBSERVER'S SIGNATURE [signature] **DATE** 05 -21 -04

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY Carl Koontz **DATE**

Comments:

Visible Emissions Observations Form

RUN NUMBER 3C

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 05-21-04	**START TIME** 1524	**STOP TIME** 1624

ADDRESS

CITY Crawfordsville **STATE** IN **ZIP**

PHONE **SOURCE ID NUMBER**

PROCESS EQUIPMENT EAF's & AOD **OPERATING MODE** Normal

CONTROL EQUIPMENT Baghouse - West **OPERATING MODE** Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions) Roof Monitors

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' **HEIGHT RELATIVE TO OBSERVER** START 75' STOP 75'

DISTANCE FROM OBSERVER START 200 yd STOP 200 yd **DIRECTION FROM OBSERVER** START NE STOP NE

DESCRIBE EMISSIONS START N/A STOP N/A

EMISSION COLOR START N/A STOP N/A **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT NO YES **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof Monitors STOP Roof Monitors

DESCRIBE BACKGROUND START Cloudy STOP Cloudy

BACKGROUND COLOR START Gray STOP Gray **SKY CONDITIONS** START Cloudy STOP Cloudy

WIND SPEED (MPH) START 5 STOP 5 **WIND DIRECTION** START E STOP E

AMBIENT TEMPERATURE (F) START 85 STOP 85 **WET BULB TEMP** **REL. HUMIDITY**

min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
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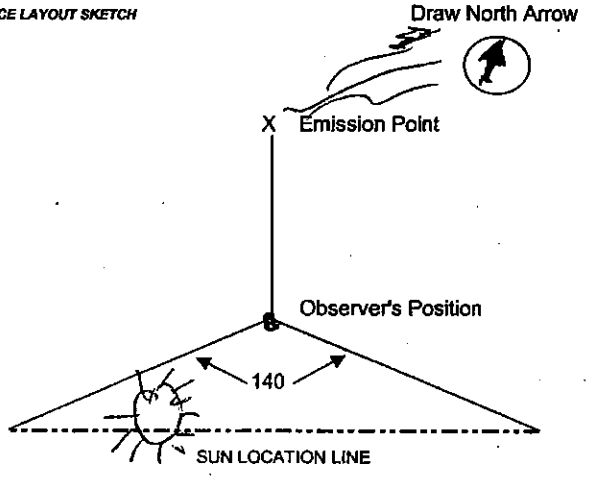
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

= Observer's Position = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Carlos Brown

OBSERVER'S SIGNATURE [signature] **DATE** 05-21-04

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY Carl Koontz **DATE**

Comments:

Visible Emissions Observations Form

RUN NUMBER 3C

SOURCE NAME	Nucor Steel
ADDRESS	
CITY	Crawfordsville
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & AOD
OPERATING MODE	Normal
CONTROL EQUIPMENT	Baghouse - East
OPERATING MODE	Normal
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Roof Monitors
HEIGHT ABOVE GROUND LEVEL START / STOP	75' / 75'
HEIGHT RELATIVE TO OBSERVER START / STOP	75' / 75'
DISTANCE FROM OBSERVER START / STOP	200yd / 200yd
DIRECTION FROM OBSERVER START / STOP	NE / NE
DESCRIBE EMISSIONS START / STOP	N/A / N/A
EMISSION COLOR START / STOP	N/A / N/A
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT: (NO) / YES	
IF WATER DROPLET PLUME: ATTACHED / DETACHED	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	Roof Monitor / Roof Monitor
DESCRIBE BACKGROUND START / STOP	Cloudy / Cloudy
BACKGROUND COLOR START / STOP	Gray / Gray
SKY CONDITIONS START / STOP	Cloudy / Cloudy
WIND SPEED (MPH) START / STOP	5 / 5
WIND DIRECTION START / STOP	E / E
AMBIENT TEMPERATURE (F) START / STOP	85 / 85
WET BULB TEMP.	
R.H. PERCENT	

OBSERVATION DATE	START TIME	STOP TIME
05 - 21 - 04	1524	1624

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Carlos Brown

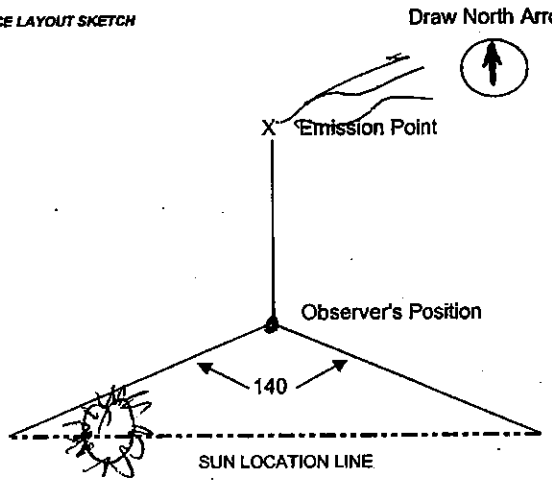
OBSERVER'S SIGNATURE: [signature] DATE: 05 - 21 - 04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz DATE:

Comments:

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

= Observer's Position = Plume

= Sun

Visible Emissions Observations Form

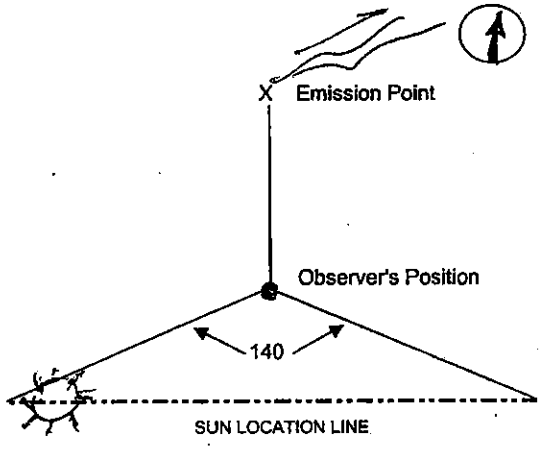
RUN NUMBER 3 D

SOURCE NAME	NUCOR STEEL
ADDRESS	
CITY	CRAWFORDSVILLE
STATE	IN
ZIP	
PHONE	
SOURCE ID NUMBER	
PROCESS EQUIPMENT	EAF's & AOD
OPERATING MODE	NORMAL
CONTROL EQUIPMENT	BAGHOUSE - EAST
OPERATING MODE	NORMAL
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	ROOF MONITORS
HEIGHT ABOVE GROUND LEVEL START / STOP	75' / 75'
HEIGHT RELATIVE TO OBSERVER START / STOP	75' / 75'
DISTANCE FROM OBSERVER START / STOP	200yd / 206 yd
DIRECTION FROM OBSERVER START / STOP	NE / NE
DESCRIBE EMISSIONS START / STOP	N/A / N/A
EMISSION COLOR START / STOP	N/A / N/A
PLUME TYPE	CONTINUOUS / FUGITIVE / INTERMITTENT
WATER DROPLETS PRESENT	(NO) / YES
IF WATER DROPLET PLUME:	ATTACHED / DETACHED
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	ROOF MONITORS / ROOF MONITORS
DESCRIBE BACKGROUND START / STOP	CLOUDY / CLOUDY
BACKGROUND COLOR START / STOP	GRAY / GRAY
SKY CONDITIONS START / STOP	CLOUDY / CLOUDY
WIND SPEED (MPH) START / STOP	5 / 5
WIND DIRECTION START / STOP	E / E
AMBIENT TEMPERATURE (F) START / STOP	82 / 82
WET BULB TEMP	
R.H. PERCENT	

OBSERVATION DATE	START TIME	STOP TIME
05 - 21 - 04	1625	1725

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE 0 WERE 0

RANGE OF OPACITY READINGS MINIMUM: 0 MAXIMUM: 0

OBSERVER'S NAME (PRINT): DARIUS BROWN

OBSERVER'S SIGNATURE: [signature] DATE: 05 - 21 - 04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: ARL KOONTZ DATE:

Comments:

Visible Emissions Observations Form

RUN NUMBER 3D

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 05-21-04	**START TIME** 1625	**STOP TIME** 1725

ADDRESS

CITY Crawfordsville **STATE** IN **ZIP**

PHONE **SOURCE ID NUMBER**

PROCESS EQUIPMENT EAF's & AOD **OPERATING MODE** Normal

CONTROL EQUIPMENT Baghouse - West **OPERATING MODE** Normal

DESCRIBE EMISSION POINT (Stack Exit Dimensions) Roof Monitors

HEIGHT ABOVE GROUND LEVEL START 75' STOP 75' **HEIGHT RELATIVE TO OBSERVER** START 75' STOP 75'

DISTANCE FROM OBSERVER START 200 yd STOP 200 yd **DIRECTION FROM OBSERVER** START NE STOP NE

DESCRIBE EMISSIONS START N/A STOP N/A

EMISSION COLOR START N/A STOP N/A **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT (NO) YES **IF WATER DROPLET PLUME:** ATTACHED DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Roof Monitors STOP Roof Monitors

DESCRIBE BACKGROUND START Cloudy STOP Cloudy

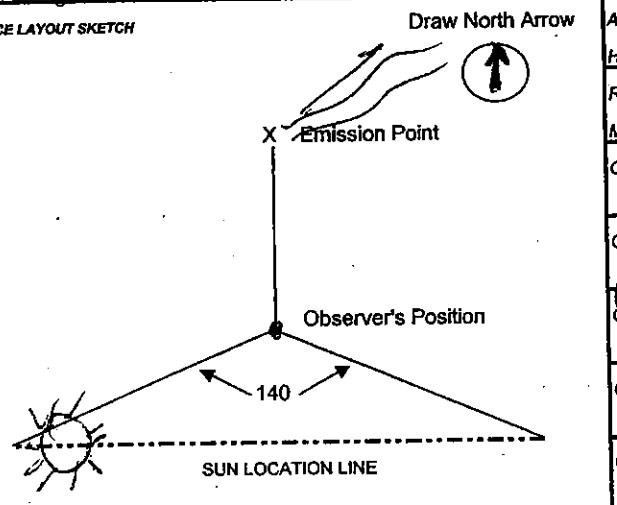
BACKGROUND COLOR START Gray STOP Gray **SKY CONDITIONS** START Cloudy STOP Cloudy

WIND SPEED (MPH) START 5 STOP 5 **WIND DIRECTION** START E STOP E

AMBIENT TEMPERATURE (F) START 82 STOP 82 **WET BULB TEMP.** **RH PERCENT**

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind

= Observer's Position = Plume

= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0 **NUMBER OF READINGS ABOVE** 0 **WERE** 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT) Carlos Brown

OBSERVER'S SIGNATURE **DATE** 05-21-04

ORGANIZATION ATP - Air Test Professionals, Inc.

CERTIFIED BY Carl Koontz **DATE**

Comments:

Visible Emissions Observations Form

RUN NUMBER 1 - A

SOURCE NAME	Nucor Steel
ADDRESS	4537 S. Nucor Rd.
CITY	Crawfordsville
STATE	IN
ZIP	47933
PHONE	765-364-1373
SOURCE ID NUMBER	00038
PROCESS EQUIPMENT	Old Silo Bin Vent
OPERATING MODE	Run
CONTROL EQUIPMENT	Bin Vent
OPERATING MODE	Run
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Bin Vent Port
HEIGHT ABOVE GROUND LEVEL START	80FT
HEIGHT ABOVE GROUND LEVEL STOP	80FT
HEIGHT RELATIVE TO OBSERVER START	75FT
HEIGHT RELATIVE TO OBSERVER STOP	75FT
DISTANCE FROM OBSERVER START	150FT
DISTANCE FROM OBSERVER STOP	150FT
DIRECTION FROM OBSERVER START	SE
DIRECTION FROM OBSERVER STOP	SE
DESCRIBE EMISSIONS START	None
DESCRIBE EMISSIONS STOP	None
EMISSION COLOR START	—
EMISSION COLOR STOP	—
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT: NO / YES	NA
IF WATER DROPLET PLUME: ATTACHED / DETACHED	NA
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	
DESCRIBE BACKGROUND START	Sky
DESCRIBE BACKGROUND STOP	Sky
BACKGROUND COLOR START	Grey/Blue
BACKGROUND COLOR STOP	Grey/Blue
SKY CONDITIONS START	Cloudy
SKY CONDITIONS STOP	Broken
WIND SPEED (MPH) START	10-15
WIND SPEED (MPH) STOP	10-15
WIND DIRECTION START	SW
WIND DIRECTION STOP	SW
AMBIENT TEMPERATURE (F) START	80
AMBIENT TEMPERATURE (F) STOP	80
WET BULB TEMP	
R.H. PERCENT	

OBSERVATION DATE	5/19/04
START TIME	3:59 PM
STOP TIME	4:59 PM

sec / min	0	15	30	45	min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
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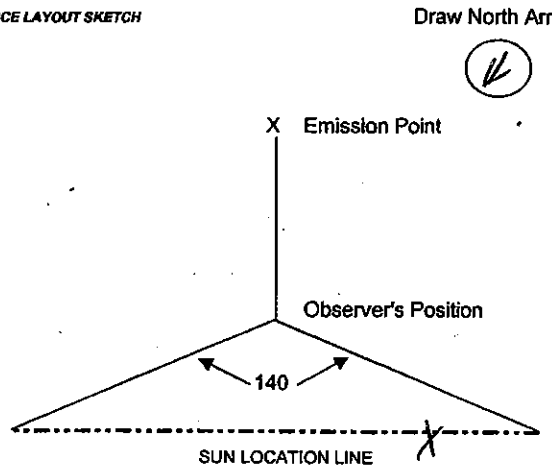
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point
= Observer's Position
= Sun
= Wind
= Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE ____ WERE

RANGE OF OPACITY READINGS
MINIMUM
MAXIMUM

OBSERVER'S NAME (PRINT): Rex Kelsey

OBSERVER'S SIGNATURE: Rex Kelsey

DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz

DATE: 3/18/04

Comments:

Visible Emissions Observations Form

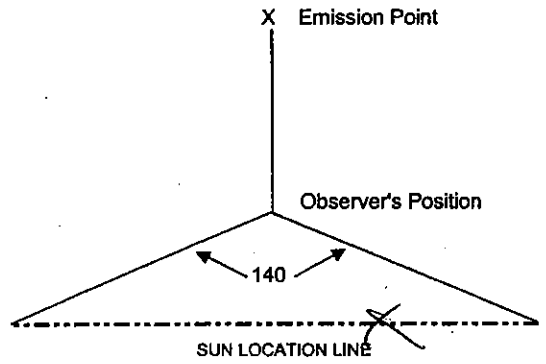
RUN NUMBER: 1-B

SOURCE NAME	Nucor Steel
OBSERVATION DATE	5/19/04
START TIME	3:59 PM
STOP TIME	4:59PM
ADDRESS	4537 S, Nucor Rd,
CITY	Crawfordsville
STATE	IN
ZIP	47933
PHONE	765-364-1323
SOURCE ID NUMBER	00038
PROCESS EQUIPMENT	New Silo Bin Vent
OPERATING MODE	Run
CONTROL EQUIPMENT	Bin Vent
OPERATING MODE	Run
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Bin Vent Port
HEIGHT ABOVE GROUND LEVEL START	75FT STOP 75FT
HEIGHT RELATIVE TO OBSERVER START	75FT STOP 75FT
DISTANCE FROM OBSERVER START	200FT STOP 200FT
DIRECTION FROM OBSERVER START	SE STOP SE
DESCRIBE EMISSIONS START	None STOP None
EMISSION COLOR START	— STOP —
PLUME TYPE: CONTINUOUS FUGITIVE INTERMITTENT	
WATER DROPLETS PRESENT NO N/A YES	
IF WATER DROPLET PLUME: ATTACHED N/A DETACHED	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	STOP
DESCRIBE BACKGROUND START ~~Broken~~ Sky	STOP Sky
BACKGROUND COLOR START ~~Blue~~ Blue/White	STOP Blue/White
SKY CONDITIONS START ~~Broken~~ Cloudy	STOP Broken
WIND SPEED (MPH) START 10-15	STOP 10-15
WIND DIRECTION START S	STOP S
AMBIENT TEMPERATURE (F) START 80	STOP 80
WET BULB TEMP.	R.H. PERCENT

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH

Draw North Arrow



X = Emission Point
= Observer's Position
= Sun
= Wind
= Plume

AVERAGE OPACITY FOR HIGHEST PERIOD: 0

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS
MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT): Rex Kelsey

OBSERVER'S SIGNATURE: Rex Kelsey

DATE: 5/19/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz

DATE: 3/18/04

Comments:

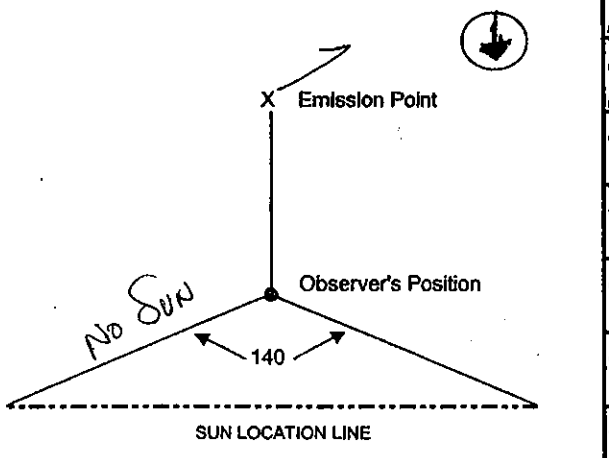
Visible Emissions Observations Form

RUN NUMBER 2 - A

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 5/21/04	**START TIME** 7:22 AM	**STOP TIME** 8:22 AM
ADDRESS 4537 South Nucor Rd			
CITY Crawfordsville	**STATE** IN	**ZIP** 47933	
PHONE 765-364-1323	**SOURCE ID NUMBER** 00038		
PROCESS EQUIPMENT Bin Vent	**OPERATING MODE** Run		
CONTROL EQUIPMENT Bin vent old silo	**OPERATING MODE** Run		
DESCRIBE EMISSION POINT (Stack Exit Dimensions) Vent Port on Bin Vent			
HEIGHT ABOVE GROUND LEVEL START 75 STOP 75	**HEIGHT RELATIVE TO OBSERVER** START 75 STOP 75		
DISTANCE FROM OBSERVER START 200ft STOP 200ft	**DIRECTION FROM OBSERVER** START S STOP S		
DESCRIBE EMISSIONS START —	STOP —		
EMISSION COLOR START — STOP —	**PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT		
WATER DROPLETS PRESENT NO N/A YES N/A	**IF WATER DROPLET PLUME:** ATTACHED N/A DETACHED		
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Bin Vent Port	STOP Bin Vent Port		
DESCRIBE BACKGROUND START Sky	STOP Sky		
BACKGROUND COLOR START Gray STOP Gray	**SKY CONDITIONS** START Cloudy STOP Cloudy		
WIND SPEED (MPH) START 10-15 STOP 10-15	**WIND DIRECTION** START SW STOP SW		
AMBIENT TEMPERATURE (F) START 70 STOP 70	WET BULB TEMP	R.H. PERCENT	

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS
MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT) Rex Kelsey

OBSERVER'S SIGNATURE Rex Kelsey **DATE** 5/21/04

ORGANIZATION Nucor Steel
~~ATP - Air Test Professionals, Inc.~~

CERTIFIED BY Carl Koontz **DATE** 5/18/04

Comments:

Visible Emissions Observations Form

RUN NUMBER 2-B

SOURCE NAME Nucor Steel	**OBSERVATION DATE** 5/24/04	**START TIME** 7:22 AM	**STOP TIME** 8:22 AM

ADDRESS 4537 South Nucor Rd

CITY Crawfordsville **STATE** IN **ZIP** 47933

PHONE 765-364-1323 **SOURCE ID NUMBER** 00038

PROCESS EQUIPMENT Bin Vent **OPERATING MODE** Run

CONTROL EQUIPMENT Bin Vent New Silo **OPERATING MODE** Run

DESCRIBE EMISSION POINT (Stack Exit Dimensions) Vent Port on Bin Vent

HEIGHT ABOVE GROUND LEVEL START 80 STOP 80 **HEIGHT RELATIVE TO OBSERVER** START 80 STOP 80

DISTANCE FROM OBSERVER START 150FT STOP 150FT **DIRECTION FROM OBSERVER** START S STOP S

DESCRIBE EMISSIONS START — STOP —

EMISSION COLOR START — STOP — **PLUME TYPE:** CONTINUOUS FUGITIVE INTERMITTENT

WATER DROPLETS PRESENT NO N/A YES N/A **IF WATER DROPLET PLUME:** ATTACHED N/A DETACHED

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Bin Vent Port STOP Bin Vent Port

DESCRIBE BACKGROUND START Sky STOP Sky

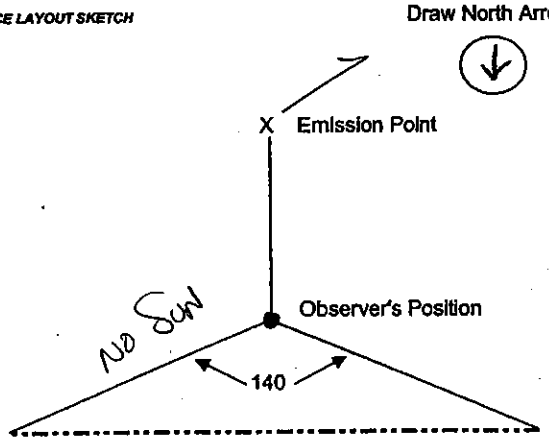
BACKGROUND COLOR START Gray STOP Gray **SKY CONDITIONS** START Cloudy STOP Cloudy

WIND SPEED (MPH) START 10-15 STOP 10-15 **WIND DIRECTION** START SW STOP SW

AMBIENT TEMPERATURE (F) START 70 STOP 70 WET BULB TEMP. REL. PERCENT

sec min	0	15	30	45	sec min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD 0 **NUMBER OF READINGS ABOVE WERE**

RANGE OF OPACITY READINGS MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT) Rex Kelsey

OBSERVER'S SIGNATURE Rex Kelsey **DATE** 5/24/04

ORGANIZATION Nucor Steel ~~ATP - All Test Professionals, Inc.~~

CERTIFIED BY Carl Koontz **DATE** 3/18/04

Comments:

Visible Emissions Observations Form

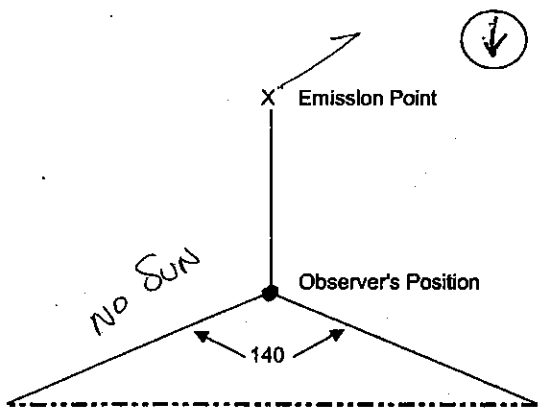
RUN NUMBER: 3 - A

SOURCE NAME	Nucor Steel
ADDRESS	4537 South Nucor Road
CITY	Crawfordsville
STATE	IN
ZIP	47933
PHONE	765-364-1373
SOURCE ID NUMBER	00038
PROCESS EQUIPMENT	Bin Vent
OPERATING MODE	Run
CONTROL EQUIPMENT	Bin Ven New Silo
OPERATING MODE	Run
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Vent Port on Bin Vent
HEIGHT ABOVE GROUND LEVEL START / STOP	80 / 80
HEIGHT RELATIVE TO OBSERVER START / STOP	80 / 80
DISTANCE FROM OBSERVER START / STOP	150FT / 150FT
DIRECTION FROM OBSERVER START / STOP	S / S
DESCRIBE EMISSIONS START / STOP	— / —
EMISSION COLOR START / STOP	— / —
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT: NO N/A YES N/A	
IF WATER DROPLET PLUME: ATTACHED N/A DETACHED	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	Bin Vent Port / Bin Vent Port
DESCRIBE BACKGROUND START / STOP	SKy / SKy
BACKGROUND COLOR START / STOP	White /
SKY CONDITIONS START / STOP	Cloudy / Cloudy
WIND SPEED (MPH) START / STOP	10-15 /
WIND DIRECTION START / STOP	SW /
AMBIENT TEMPERATURE (F) START / STOP	85 /
WET BULB TEMP.	
R.H. PERCENT	

OBSERVATION DATE: 5/21/04 — START TIME: 1:10 PM — STOP TIME: 2:10 PM

min	sec 0	15	30	45	min	sec 0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point; = Observer's Position; = Sun; = Wind; = Plume

AVERAGE OPACITY FOR HIGHEST PERIOD:

NUMBER OF READINGS ABOVE WERE:

RANGE OF OPACITY READINGS: MINIMUM / MAXIMUM

OBSERVER'S NAME (PRINT): Rex Kelsey

OBSERVER'S SIGNATURE: Rex Kelsey — DATE: 5/21/04

ORGANIZATION: ATP - Air Test Professionals, Inc.

CERTIFIED BY: Carl Koontz — DATE: 3/18/04

Comments:

Visible Emissions Observations Form

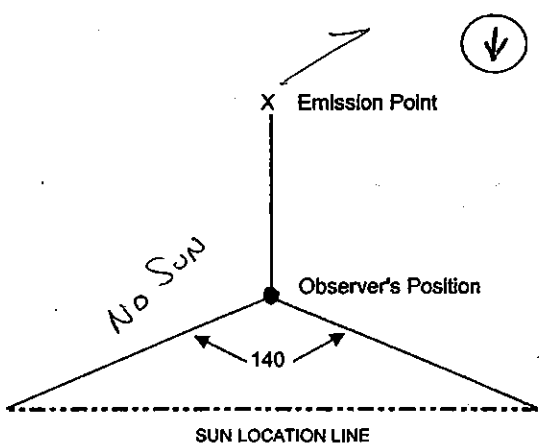
RUN NUMBER 3-B

SOURCE NAME	Nucor Steel
ADDRESS	4537 South Nucor Road
CITY	Crawfordsville
STATE	IN
ZIP	47933
PHONE	765-364-1323
SOURCE ID NUMBER	00038
PROCESS EQUIPMENT	Bin Vent
OPERATING MODE	Run
CONTROL EQUIPMENT	Bin Vent on Old Silo
OPERATING MODE	Run
DESCRIBE EMISSION POINT (Stack Exit Dimensions)	Vent Port on Bin Vent
HEIGHT ABOVE GROUND LEVEL START / STOP	75 / 75
HEIGHT RELATIVE TO OBSERVER START / STOP	75 / 75
DISTANCE FROM OBSERVER START / STOP	200 / 200
DIRECTION FROM OBSERVER START / STOP	S / S
DESCRIBE EMISSIONS START / STOP	— / —
EMISSION COLOR START / STOP	— / —
PLUME TYPE: CONTINUOUS / FUGITIVE / INTERMITTENT	
WATER DROPLETS PRESENT NO / YES	N/A / N/A
IF WATER DROPLET PLUME: ATTACHED / DETACHED	N/A
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START / STOP	Bin Vent Port / Bin Vent Port
DESCRIBE BACKGROUND START / STOP	Sky / Sky
BACKGROUND COLOR START / STOP	White
SKY CONDITIONS START / STOP	Cloudy
WIND SPEED (MPH) START / STOP	10-15
WIND DIRECTION START / STOP	SW
AMBIENT TEMPERATURE (F) START / STOP	85
WET BULB TEMP.	
R.H. PERCENT	

OBSERVATION DATE	START TIME	STOP TIME
- -	1:10 PM	2:10 PM

sec / min	0	15	30	45	sec / min	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



X = Emission Point = Wind
= Observer's Position = Plume
= Sun

AVERAGE OPACITY FOR HIGHEST PERIOD

NUMBER OF READINGS ABOVE WERE

RANGE OF OPACITY READINGS
MINIMUM MAXIMUM

OBSERVER'S NAME (PRINT) Rex Kelsey

OBSERVER'S SIGNATURE Rex Kelsey DATE 5/24/04

ORGANIZATION Nucor Steel
~~ATP - Air Test Professionals, Inc.~~

CERTIFIED BY Carl Koontz DATE 3/18/04

Comments:

COMPLIANCE TEST PROTOCOL
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Date Prepared: April 1, 2004 **Proposed Test Date** May 19-21, 2004

Plant Address and Location: 4537 S. Nucor Road, Crawfordsville, Indiana 47933

1. Source Information

AFS: _____ **Id Number:** _____ **Permit Number:** 107-16823-00038
Company: Nucor Steel
Mail Address: RR2 Box 311, CR 400 E
City: Crawfordsville, Indiana **Zip:** 47933
Co.Contact: Mark Washer **Phone:** (765) 364-1323

Check program if applicable:
FESOP: _____
Title V: X
SSOA: _____

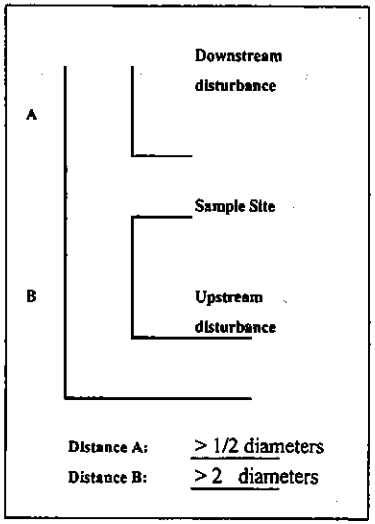
AGENCY USE ONLY **Date Rec'd:** _____
Inspector: Reviewer: Date Appr: _____

2. Tester Information

Name: Air Test Professionals, Inc.
Address: 1201 N. Graham Ave.
Contact: Carlos M. Brown **Phone:** 317-345-1723
Pre-Test Inspection Complete? Yes

3. Process Information

Unit to Test: PPFF Baghouse (2-EAF's + 1-AOD)
Max. Rated Capacity: 502 tons per hour
Proposed Operating Speed: Close to Max as possible
Pollution Control Equipment: PPFF Baghouse
Process Description: Process of melting screap metal to make carbon steel.
Fuel Type: N/A



Distance A: > 1/2 diameters
Distance B: > 2 diameters

4. Test Information

		# Runs	Time/Run
Methods 1-4	Moisture/Flow	3	@ Inlet
Method 5D	PM	3	240 min @ Compartments
Method 6			
Method 7			
Method 9	Opacity	3	60 min @ Roof Monitors
Other Testing:	M202	3	240 min @ Compartments
	M29	3	240 min @ Compartments

Note: To test 12 of 16 compartments.
Volume req. at 160 DSCF.
Will Establish Baseline Fan Amps and Delta P during test.

5. Sampling Strategy

a. Describe any deviations from the standard test method.
None

b. Describe method used to determine quantity of raw materials
Plant personnel will keep record of weight rates. New Baseline Values for Fan Amps and Delta P's.

6. Sample Site Location

Does sample port location meet 40 CFR 60, Appx A, Method 1 Section 1.2 requirements: Yes/No: YES If No, Explain _____

Number of sample points for M5: 32
Diameter at sample site: 209" **Stack height:** N/A
Approx. stack gas flow (ACFM): 1,309,000
Approx. gas temp. (degF): 250 F Max
Approx. gas moisture (%): 3%

Reason for test:
State Agreed Order: Yes/No: _____ **Operating permit:** Yes/No: Yes
Construction Permit: Yes/No: _____ **Compliance w 326** _____
NSPS 40 CFR 60 Subpart: _____ **Other** _____
Title V: _____
Other (i.e. EPA, CD, state, 114) _____

326 IAC 3-2.1 requires this completed form and fee to be submitted 35 days prior to proposed test date to:
(FEE NOT APPLICABLE IF FESOP OR TITLE V)

Questions may be directed to 317-232-8338, FAX : 317-233-6865

Compliance Data Section
Office of Air Management
Indiana Department of Environmental Management
100 North Senate
PO BOX 6015
Indianapolis, IN 46206-6015

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Run 1 Fan Amps and Damper Positions

DATE: 5/19/04 Run 1 Time: 4:00 pm - 9:34 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
4:00 PM	135	100%	144	100%			139	100%	122	100%	137	100%
4:15 PM	138	100%	149	100%			142	100%	127	100%	138	100%
4:30 PM	139	100%	148	100%			142	100%	126	100%	139	100%
4:45 PM	132	100%	141	100%			138	100%	122	100%	136	100%
5:00 PM	144	100%	152	100%			150	100%	132	100%	145	100%
5:15 PM			**Testing Suspended**									
5:30 PM												
5:34 PM	127	100%	138	100%			131	100%	115	100%	128	100%
5:49 PM	138	100%	146	100%			140	100%	122	100%	136	100%
6:04 PM	136	100%	145	100%			140	100%	120	100%	137	100%
6:19 PM	126	100%	136	100%			129	100%	115	100%	126	100%
6:34 PM	130	100%	141	100%			132	100%	118	100%	132	100%
6:49 PM	129	100%	140	100%			133	100%	119	100%	130	100%
7:04 PM	125	100%	134	100%			126	100%	111	100%	124	100%
7:19 PM	124	100%	135	100%			128	100%	113	100%	127	100%
7:34 PM	125	100%	137	100%			130	100%	113	100%	128	100%
7:49 PM	121	100%	131	100%			124	100%	113	100%	124	100%
8:04 PM	131	100%	143	100%			137	100%	120	100%	135	100%
8:19 PM	120	100%	132	100%			123	100%	108	100%	120	100%
8:34 PM	137	100%	145	100%			142	80%	123	80%	138	100%
8:49 PM	141	100%	152	100%			146	100%	130	100%	141	100%
9:04 PM	129	100%	139	100%			131	100%	118	100%	127	100%
9:19 PM	122	100%	132	100%			125	100%	113	100%	122	100%
9:34 PM	127	100%	137	100%			132	100%	116	100%	130	100%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	144	152		150	132	145	152
Min	120	131		123	108	120	108
Avg	130.7	140.8		134.5	118.9	131.8	133.9

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Run 2 Fan Amps and Damper Positions

DATE: 5/21/04 Run 2 Time: 7:21 am - 12:06 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
7:21 AM	135	100%			132	100%	125	100%	119	100%	128	100%
7:36 AM	136	100%			132	100%	125	100%	118	100%	122	100%
7:51 AM	130	100%			126	100%	120	100%	113	100%	120	100%
8:06 AM	135	100%			133	100%	127	100%	120	100%	126	100%
8:21 AM	136	100%			134	100%	128	100%	121	100%	127	100%
8:36 AM	133	100%			130	100%	123	100%	117	100%	122	100%
8:51 AM	127	100%			124	100%	120	100%	111	100%	117	100%
9:06 AM	137	100%			133	100%	128	100%	116	100%	126	100%
9:21 AM	140	100%			136	100%	132	100%	119	100%	129	100%
9:36 AM	129	100%			123	100%	117	100%	110	100%	117	100%
9:51 AM	134	100%			129	100%	124	100%	113	100%	124	100%
10:06 AM	138	100%			137	100%	131	100%	123	100%	127	100%
10:21 AM	134	100%			129	100%	124	100%	113	100%	124	100%
10:36 AM	132	100%			127	100%	123	100%	115	100%	121	100%
10:51 AM	134	100%			133	100%	126	100%	122	100%	125	100%
11:06 AM	143	100%			143	100%	137	100%	127	100%	136	100%
11:21 AM	126	100%			120	100%	114	100%	108	100%	112	100%
11:36 AM	128	100%			126	100%	121	100%	114	100%	119	100%
11:51 AM	135	100%			131	100%	125	100%	119	100%	125	100%
12:06 PM	130	100%			126	100%	121	100%	112	100%	120	100%
AVG	134	100%			130	100%	125	100%	117	100%	123	100%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	143		143	137	127	136	143
Min	126		120	114	108	112	108
Avg	133.6		130.2	124.6	116.5	123.4	125.6

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

Run 3 Fan Amps and Damper Positions

DATE: 5/21/04 Run 3 Time: 1:07 pm - 5:54 pm

	FAN 1		FAN 2		FAN 3		FAN 4		FAN 5		FAN 6	
Time	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position	Amps	Damper Position
1:07 PM	138	100%			135	100%	130	100%	121	100%	130	100%
1:22 PM	119	100%			112	100%	108	100%	102	100%	107	100%
1:37 PM	125	100%			120	100%	116	100%	108	100%	116	100%
1:52 PM	133	100%			128	100%	124	100%	114	100%	125	100%
2:07 PM	135	100%			132	100%	127	100%	119	100%	127	100%
2:22 PM	135	100%			131	100%	126	100%	115	100%	126	100%
2:37 PM	139	100%			134	100%	130	100%	121	100%	129	100%
2:52 PM	136	100%			132	100%	124	100%	119	100%	124	100%
3:07 PM	136	100%			132	100%	127	100%	117	100%	126	100%
3:22 PM	127	100%			124	100%	119	100%	111	100%	120	100%
3:37 PM	129	100%			122	100%	119	100%	111	100%	117	100%
3:52 PM	134	100%			128	100%	124	100%	113	100%	124	100%
4:07 PM	134	100%			128	100%	125	100%	113	100%	126	100%
4:22 PM	138	100%			136	100%	128	100%	122	100%	129	100%
4:37 PM	119	100%			112	100%	108	100%	102	100%	109	100%
4:52 PM	132	100%			127	100%	123	100%	114	100%	123	100%
5:07 PM	138	100%			134	100%	131	100%	121	100%	130	100%
5:22 PM	122	100%			114	100%	110	100%	105	100%	111	100%
5:37 PM	128	100%			123	100%	118	100%	111	100%	119	100%
5:52 PM	129	100%			123	100%	118	100%	110	100%	117	100%
AVG	131	100%			126	100%	122	100%	113	100%	122	100%

	Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Grand Totals
Max	139		136	131	122	130	139
Min	119		112	108	102	107	102
Avg	131.3		126.4	121.8	113.5	121.8	122.9

Melt Shop / AOD Baghouse Baseline PM and Opacity Testing

5/19/04		5/21/04			
Run 1		Run 2		Run 3	
Time	DP, in. H20	Time	DP, in. H20	Time	DP, in. H20
4:00 PM	7.8	7:21 AM	8.9	1:07 PM	8.7
4:15 PM	7.5	7:36 AM	7.9	1:22 PM	8.0
4:30 PM	8.1	7:51 AM	8.5	1:37 PM	8.4
4:45 PM	7.6	8:06 AM	8.9	1:52 PM	8.6
5:00 PM	7.3	8:21 AM	8.3	2:07 PM	8.2
5:15 PM	suspended	8:36 AM	8.4	2:22 PM	7.9
5:30 PM	suspended	8:51 AM	8.6	2:37 PM	7.5
5:34 PM	6.8	9:06 AM	8.2	2:52 PM	7.9
5:49 PM	6.9	9:21 AM	7.7	3:07 PM	7.7
6:04 PM	6.8	9:36 AM	8.2	3:22 PM	7.7
6:19 PM	6.9	9:51 AM	7.8	3:37 PM	7.9
6:34 PM	7.7	10:06 AM	8.1	3:52 PM	8.2
6:49 PM	7.8	10:21 AM	8.6	4:07 PM	7.6
7:04 PM	7.3	10:36 AM	8.0	4:22 PM	8.3
7:19 PM	6.9	10:51 AM	7.9	4:37 PM	7.8
7:34 PM	7.7	11:06 AM	8.9	4:52 PM	8.3
7:49 PM	7.2	11:21 AM	8.0	5:07 PM	8.8
8:04 PM	7.0	11:36 AM	8.3	5:22 PM	7.9
8:19 PM	6.9	11:51 AM	8.9	5:37 PM	8.1
8:34 PM	7.6	12:06 PM	8.1	5:52 PM	7.8
8:49 PM	7.2				
9:04 PM	7.1				
9:19 PM	7.4				
9:34 PM	7.6				

Max	8.1		8.9		8.8
Min	6.8		7.7		7.5
Average	7.3		8.3		8.1

Furnace 1 Production: 5/19/04

Heat No.	Tons	Tap Time	Prev. Tap Time	Tap-to-Tap Minutes	Average tons/hr
141211	130	9:25 AM	8:40 AM	45	173.3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
141214	129	12:22 PM	11:30 AM	52	148.8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
141217	130	3:01 PM	2:10 PM	51	152.9
141218	130	3:47 PM	3:01 PM	46	169.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Furnace 2 Production: 5/19/04

Heat No.	Tons	Tap Time	Prev. Tap Time	Tap-to-Tap Minutes	Average tons/hr
246985	106	9:25 AM	8:33 AM	52	122.3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
246987	118	12:40 PM	11:23 AM	77	91.9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
246989	118	3:54 PM	2:26 PM	88	80.5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
246994	115	10:42 PM	9:34 PM	68	101.5

Stack Gases - SOx, NOx, CO, VOC

	Run Time	Furn 1 Tons	Furn 2 Tons	AOD Tons	TOTAL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Run 2	11:44 am - 12:44 pm	142.0	90.1	56.1	**288.2**
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
					803.5

AOD Production Data: 5/19/04

Heat No.	Tons	Tap Time	Charge Time	Charge-Tap Minutes	Average tons/hr
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
246987	123.8	3:37 PM	2:11 PM	86	86.4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Run 1 - PM & Metals

	Run Time	Furn 1 Tons**	Furn 2 Tons**	AOD Tons**	TOTAL**	Avg. Run Production
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

**Run 1 testing was suspended 25 minutes due to furnace downtime.
Production totals are based on 309 minutes run time rather than 334 minutes.

Furnace 1 Production: 5/21/04

Heat No.	Tons	Tap Time	Prev. Tap Time	Tap-to-Tap Minutes	Average tons/hr
141253	108	7:18 AM	6:33 AM	45	144.0
141254	131	8:03 AM	7:18 AM	45	174.7
141255	130	8:54 AM	8:03 AM	51	152.9
141256	129	9:41 AM	8:54 AM	47	164.7
141257	120	10:41 AM	9:41 AM	60	120.0
141258	130	11:29 AM	10:41 AM	48	162.5
141259	130	12:11 PM	11:29 AM	42	185.7
141260	127	1:00 PM	12:11 PM	49	155.5
141261	131	1:41 PM	1:00 PM	41	191.7
141262	129	3:30 PM	1:41 PM	109	71.0
141263	130	4:18 PM	3:30 PM	48	162.5
141264	124	5:05 PM	4:18 PM	47	158.3
141265	130	5:53 PM	5:05 PM	48	162.5
141266	130	6:40 PM	5:53 PM	47	166.0

Furnace 2 Production: 5/21/04

Heat No.	Tons	Tap Time	Prev. Tap Time	Tap-to-Tap Minutes	Average tons/hr
247032	134	8:06 AM	7:18 AM	48	167.5
247033	129	8:54 AM	8:06 AM	48	161.3
247034	130	10:08 AM	8:54 AM	74	105.4
247035	125	10:56 AM	10:08 AM	48	156.3
247036	135	11:48 AM	10:56 AM	52	150.6
247037	130	1:21 PM	12:34 PM	47	166.0
247038	108	2:02 PM	1:21 PM	41	158.0
247039	122	2:50 PM	2:02 PM	48	152.5
247040	130	3:42 PM	2:50 PM	52	150.0
247041	130	4:36 PM	3:42 PM	54	144.4
247042	130	5:21 PM	4:36 PM	45	173.3
247043	120	6:16 PM	5:21 PM	55	130.9
247044	126	19:07	6:16 PM	51	148.2

AOD Production Data: 5/21/04

Heat No.	Tons	Tap Time	Charge Time	Charge-to-Tap Minutes	Average tons/hr
247035	126.4	7:28 AM	6:56 AM	32	237.0
247036	108.3	8:21 AM	7:44 AM	37	175.6
247036	119.2	1:23 PM	12:52 PM	31	230.7
246988	108.3	2:49 PM	2:20 PM	29	224.1

Run 1 - PM & Metals

	Run Time	Furn 1 Tons	Furn 2 Tons	AOD Tons	TOTAL	Avg. Run Production
Run 2	7:21 am - 12:06 pm	745.8	691.2	142.5	1679.5	302.6
Run 3	1:07 pm - 5:54 pm	621.6	730.7	169.8	**1522.1**	**318.2**

EBT HEAT RECORD

HEAT NO: 141211
HEATS ON BOTTOM: _____
LADLE NO: 12
LAST HEAT TAPPED: 8140

FULL WEIGHT: _____
TARE WEIGHT: _____
WEIGHT TAPPED: 136
HEATS ON DELTA: 157

DATE: 5-18
MELTER: DAN
AIM GRADE: 100xA2
PATCH: _____ LBS(EST)

KWH END: _____
KWH START: _____
KWH USED: 52

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		05			052		08							15
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL	40,000	
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	60
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			8 Tap no.
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			8 Tap no.
Power on			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
B#1	

Time	Temp	Time	Temp
	3071		

TAP TIME: 9:25

OXYGEN PPM 701

REMARKS (list)

EBT HEAT RECORD

HEAT NO: 141212 | FULL WEIGHT: _____ | DATE: 5-19 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: MyERS | KWH START: _____
LADLE NO: 4 | WEIGHT TAPPED: 260000 | AIM GRADE: 1008AF3 | KWH USED: 50
LAST HEAT TAPPED: 425 | HEATS ON DELTA: 138 | PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		027			047		071							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL	30,000	
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	60
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			8 Tap no.
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			8 Tap no.
Power on			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3069	-002	

LADLE ALLOYS | WEIGHT(LBS)

B#1	

OXYGEN PPM 1344

TAP TIME: 11:36

REMARKS (list)

EBT HEAT RECORD

HEAT NO: 141213
HEATS ON BOTTOM: ____
LADLE NO: 5
LAST HEAT TAPPED: 10136

FULL WEIGHT: ____
TARE WEIGHT: ____
WEIGHT TAPPED: 260000
HEATS ON DELTA: 139

DATE: 5-19
MELTER: Myers
AIM GRADE: 1008A2
PATCH: ____ LBS(EST)

KWH END: ____
KWH START: ____
KWH USED: 419

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.039			.057		.072							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	120
SCRAP TOTAL		1356ON
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
B#1	

Time	Temp	Time	Temp
	3076	.007	

OXYGEN PPM 1132

TAP TIME: 11:30

REMARKS (list)

Add A Phase 5 mins

IF-0043 9/12/97

EBT HEAT RECORD

HEAT NO: 14214 | FULL WEIGHT: _____ | DATE: 5-19 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: MIKE | KWH START: _____
LADLE NO: 10 | WEIGHT TAPPED: 258000 | AIM GRADE: _____ | KWH USED: 47
LAST HEAT TAPPED: 11:30 | HEATS ON DELTA: 160 | PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.038			.050		.080							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	129
SCRAP TOTAL		139-540W
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			10 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			10 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	3033	1041	

OXYGEN PPM 1168

TAP TIME: 12:22

REMARKS (list)

Add lt B please - 6 min

EBT HEAT RECORD

HEAT NO: 141215 FULL WEIGHT: _____ DATE: 5-19 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: 11 years KWH START: _____
LADLE NO: 17 WEIGHT TAPPED: 260000 AIM GRADE: _____ KWH USED: 377
LAST HEAT TAPPED: 12:22 HEATS ON DELTA: 167 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		043			058		088							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	129
SCRAP TOTAL		139.5 lbs
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	2946	1027	

OXYGEN PPM 906

TAP TIME: 1122

REMARKS (list) _____

EBT HEAT RECORD

HEAT NO: 14216 FULL WEIGHT: _____ DATE: 5-19 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: myers KWH START: _____
LADLE NO: 11 WEIGHT TAPPED: 258000 AIM GRADE: _____ KWH USED: 47
LAST HEAT TAPPED: 1422 HEATS ON DELTA: 162 PATCH: ~ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		035			056		092							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	129
SCRAP TOTAL		139.5 tons
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			6 Tap no.
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			6 Tap no.
Power on			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	2958	1025	

OXYGEN PPM 1049

TAP TIME: 2:10

REMARKS (list)

EBT HEAT RECORD

HEAT NO: 141217 FULL WEIGHT: _____ DATE: 5-19 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Myers KWH START: _____
LADLE NO: 5 WEIGHT TAPPED: 260000 AIM GRADE: _____ KWH USED: 417
LAST HEAT TAPPED: 210 HEATS ON DELTA: 163 PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		044			060		092							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	129
SCRAP TOTAL		139.5 tons
BURNT LIME	2000	
DOLO LIME	9500	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	3018	-027	

OXYGEN PPM 1010

TAP TIME: 3101

REMARKS (list)

Pour back

EBT HEAT RECORD

HEAT NO: 141218 FULL WEIGHT: _____ DATE: 5-19 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Myers KWH START: _____

LADLE NO: 16 WEIGHT TAPPED: 240000 AIM GRADE: _____ KWH USED: 46

LAST HEAT TAPPED: 3101 HEATS ON DELTA: 164 PATCH: — LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		031			016		069							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	133
SCRAP TOTAL		141.5 ton
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2973	2917	

LADLE ALLOYS	WEIGHT(LBS)
1	

OXYGEN PPM 824

TAP TIME: 3:47

REMARKS (list)

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 19 1412 | FULL WEIGHT: _____ | DATE: 5-19 | KWH END: _____

HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Myers | KWH START: _____

LADLE NO: 12 | WEIGHT TAPPED: 258000 | AIM GRADE: _____ | KWH USED: 3

LAST HEAT TAPPED: 3147 | HEATS ON DELTA: 765 | PATCH: 1000 LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		036			053		051							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	Full Pour Back	
SCRAP TOTAL		130 ton
BURNT LIME	2000	
DOLO LIME	—	
CRG. CARBON	—	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3125	1080	

LADLE ALLOYS	WEIGHT(LBS)
—	

TAP TIME: 4:30

OXYGEN PPM 1672

REMARKS (list)

Dakin 3 mins

Full Pour Back - D51 Bombed

EBT HEAT RECORD

HEAT NO: 1412[illegible] (20) | FULL WEIGHT: _____ | DATE: 5-19 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Myers | KWH START: _____
LADLE NO: 11 | WEIGHT TAPPED: 258000 | AIM GRADE: _____ | KWH USED: 23
LAST HEAT TAPPED: 4132 | HEATS ON DELTA: 166 | PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1														
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		Scrap
	P.B	127
	150	[illegible]
SCRAP TOTAL		138.5 Tons
BURNT LIME	2000	
DOLO LIME	5500	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	2970	1020	

OXYGEN PPM 1347

TAP TIME: 5:52

REMARKS (list)

150,000 P. Back Casting
Hot Mill [illegible] Tie Tied Out
55 mins

EBT HEAT RECORD

HEAT NO: 141221 | FULL WEIGHT: | DATE: 5-19 | KWH END:
HEATS ON BOTTOM: | TARE WEIGHT: | MELTER: Myers | KWH START:
LADLE NO: 7 | WEIGHT TAPPED: 256000 | AIM GRADE: | KWH USED: 39
LAST HEAT TAPPED: 5150 | HEATS ON DELTA: 167 | PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		023			042		076							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	154	130
SCRAP TOTAL		142 tal
BURNT LIME	2000	
DOLO LIME	04700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	2990	2820	

OXYGEN PPM 1310

TAP TIME: 6:47

REMARKS (list)

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 141222 (141222)
HEATS ON BOTTOM: _____
LADLE NO: 10
LAST HEAT TAPPED: 6447

FULL WEIGHT: _____
TARE WEIGHT: _____
WEIGHT TAPPED: 246000
HEATS ON DELTA: 168

DATE: 5-19
MELTER: Myers
AIM GRADE: _____
PATCH: _____ LBS(EST)

KWH END: _____
KWH START: _____
KWH USED: 45

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.033			.047		.086							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	141
SCRAP TOTAL		145500
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

LADLE ALLOYS	WEIGHT(LBS)
1	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2941	1026	

OXYGEN PPM 239

TAP TIME: 7:39

REMARKS (list) _____

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 141223 [redacted]

HEATS ON BOTTOM: _____

LADLE NO: 12

LAST HEAT TAPPED: 7139

FULL WEIGHT: _____

TARE WEIGHT: _____

WEIGHT TAPPED: 258000

HEATS ON DELTA: 169

DATE: 5-19

MELTER: Myers

AIM GRADE: _____

PATCH: _____ LBS(EST)

KWH END: _____

KWH START: _____

KWH USED: 48

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		[redacted]			[redacted]		[redacted]							
F-2		037			051		023							
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	129
SCRAP TOTAL		139.5
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	3029	2002	

OXYGEN PPM 1256

TAP TIME: 8:37

REMARKS (list) Add C Phase Wires

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141224
HEATS ON BOTTOM: _____
LADLE NO: 11
LAST HEAT TAPPED: 8137

FULL WEIGHT: _____
TARE WEIGHT: _____
WEIGHT TAPPED: 258000
HEATS ON DELTA: 170

DATE: 5-19
MELTER: Ryan S
AIM GRADE: _____
PATCH: 2500 LBS(EST)

KWH END: _____
KWH START: _____
KWH USED: 48

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		040			050		083							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	130
SCRAP TOTAL		140 ton
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3002	-06	

LADLE ALLOYS	WEIGHT(LBS)
1	

OXYGEN PPM 1012

TAP TIME: 9:50

REMARKS (list) Patch - 11 min

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141225
HEATS ON BOTTOM: ____
LADLE NO: 7
LAST HEAT TAPPED: 9:50

FULL WEIGHT: ____
TARE WEIGHT: ____
WEIGHT TAPPED: 129
HEATS ON DELTA: 171

DATE: 5-18
MELTER: Tim
AIM GRADE: ____
PATCH: ____ LBS(EST)

KWH END: ____
KWH START: ____
KWH USED: 50

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		059			054									
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	130
SCRAP TOTAL		140 ton
BURNT LIME	2000	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket	____	____	
Power on	____	____	____ Tap no.
	____	____	____ Tap no.
	____	____	____ Tap no.
Oxy-fuel burners	____	____	____ CF
			____ CF CH
Vulcan lance on	____	____	____ CF O
Drop 2nd bucket	____	____	
Power on	____	____	____ Tap no.
	____	____	____ Tap no.
Oxy-fuel burners	____	____	____ CF
			____ CF CH
Vulcan lance on	____	____	____ CF O
Carbon Injector on	____	____	____ Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	2991		

TAP TIME: 22:54

OXYGEN PPM 1018

REMARKS (list) ____

F-0043 9/12/97

EBT HEAT RECORD

HEAT NO: 246985
HEATS ON BOTTOM: _____
LADLE NO: 0
LAST HEAT TAPPED: 08:33

FULL WEIGHT: _____
TARE WEIGHT: _____
WEIGHT TAPPED: 212
HEATS ON DELTA: 81

DATE: 5-18-04
MELTER: A
AIM GRADE: 40953
PATCH: _____ LBS(EST)

KWH END: _____
KWH START: _____
KWH USED: 51

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.58				158			5.97					35
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL	40	
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	162	90
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON	—	

	START	END	
Drop 1st bucket			
Power on			_____ Tap no.
			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Drop 2nd bucket			
Power on			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Carbon Injector on			_____ Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	2950		

OXYGEN PPM: _____

TAP TIME: 09:25

REMARKS (list): _____

EBT HEAT RECORD

HEAT NO: 246986 FULL WEIGHT: _____ DATE: 5-19-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Dave KWH START: _____
LADLE NO: 0 WEIGHT TAPPED: 224000 AIM GRADE: 409 SS KWH USED: 52
LAST HEAT TAPPED: 09:25 HEATS ON DELTA: 82 PATCH: / LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.82			.07	10	.14		8.9				.005	55
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	80	96
SCRAP TOTAL	160000	92
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON	—	

	START	END	
Drop 1st bucket			
Power on			_____ Tap no.
			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Drop 2nd bucket			
Power on			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Carbon Injector on			_____ Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp

TAP TIME: 11:23

OXYGEN PPM [ ]

REMARKS (list) 8

[illegible] STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-6987 FULL WEIGHT: _____ DATE: 5-19-09 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: [illegible] KWH START: _____

LADLE NO: 6 WEIGHT TAPPED: 236000 AIM GRADE: 409 KWH USED: 53

LAST HEAT TAPPED: 11:23 HEATS ON DELTA: 83 PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.08		.005	.005	.14	.18		.08				.006	.38
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	81	45
SCRAP TOTAL	162000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			_____ Tap no.
			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Drop 2nd bucket			
Power on			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Carbon Injector on			_____ Lbs. Inj

Time	Temp	Time	Temp
			2771

LADLE ALLOYS WEIGHT(LBS)

TAP TIME: 12:40

REMARKS (list)

OXYGEN PPM [ ]

QF-0043 9/12/97

[illegible] STEEL CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-6888 FULL WEIGHT: _____ DATE: 5-19-04 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: [illegible] KWH START: _____

LADLE NO: 0 WEIGHT TAPPED: 230006 AIM GRADE: 401 KWH USED: 56

LAST HEAT TAPPED: 12:40 HEATS ON DELTA: 84 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.10		.03	.05	.19	.16		9				.007	.33
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	81	
SCRAP TOTAL	120000	90000
BURNT LIME	3000	
DOLO LIME	3000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp

OXYGEN PPM

TAP TIME: 14:26

REMARKS (list)

ROCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-6989 FULL WEIGHT: _____ DATE: 5-19-04 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DM KWH START: _____

LADLE NO: 0 WEIGHT TAPPED: 236006 AIM GRADE: 409 KWH USED: 55

LAST HEAT TAPPED: 14:26 HEATS ON DELTA: 85 PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1.2			.06	.22	.13		11				.007	.52
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	80	45
SCRAP TOTAL	160000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
			3012

LADLE ALLOYS WEIGHT(LBS)

TAP TIME: 15:54

REMARKS (list)

OXYGEN PPM

QF-0043 9/12/97

EBT HEAT RECORD

HEAT NO: 24-690C
HEATS ON BOTTOM: _____
LADLE NO: 0
LAST HEAT TAPPED: 15:54
FULL WEIGHT: _____
TARE WEIGHT: _____
WEIGHT TAPPED: 232006
HEATS ON DELTA: 86
DATE: 5-19-09
MELTER: [illegible]
AIM GRADE: 409
PATCH: _____ LBS(EST)
KWH END: _____
KWH START: _____
KWH USED: 56

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1,5			.04	.2	.15		11				.006	.4
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160000	9000 6
BURNT LIME	3000	
DOLO LIME	4500	
CRG. CARBON		

LADLE ALLOYS	WEIGHT(LBS)

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
			2986

OXYGEN PPM [ ]

TAP TIME: 17:36

REMARKS (list) _____

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-6991 FULL WEIGHT: _____ DATE: 5-19-09 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: TM KWH START: _____

LADLE NO: 0 WEIGHT TAPPED: 236000 AIM GRADE: 1009 KWH USED: 54

LAST HEAT TAPPED: 17:36 HEATS ON DELTA: 87 PATCH: 2200 LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1.3			.06	.16	.14		10				006	35
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
			3061

TAP TIME: 18:57

REMARKS (list)

OXYGEN PPM

patch 11
Hot mill 10

EBT HEAT RECORD

HEAT NO: 24-6992 FULL WEIGHT: _____ DATE: 5-19-04 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: 007 KWH START: _____

LADLE NO: 0 WEIGHT TAPPED: 232000 AIM GRADE: 407 KWH USED: 52

LAST HEAT TAPPED: 18:51 HEATS ON DELTA: 88 PATCH: [illegible] LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1.2			.05	.15	.14		10				.004	.34
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
			2965

LADLE ALLOYS	WEIGHT(LBS)

OXYGEN PPM

TAP TIME: 20:16

REMARKS (list)

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-6993 FULL WEIGHT: _____ DATE: 5-19-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DC KWH START: _____
LADLE NO: 0 WEIGHT TAPPED: 234000 AIM GRADE: 409 KWH USED: 52
LAST HEAT TAPPED: 2016 HEATS ON DELTA: 89 PATCH: 2200 LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1.12			.047		.16							.035
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
			3057

TAP TIME: 2134

OXYGEN PPM

REMARKS (list) patch 11

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-6994 FULL WEIGHT: _____ DATE: 5-19-09 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: JRQ KWH START: _____

LADLE NO: 0 WEIGHT TAPPED: 230000 AIM GRADE: 4107 KWH USED: 46

LAST HEAT TAPPED: 21:34 HEATS ON DELTA: 90 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		1.065			042		16							37
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160000	90000
BURNT LIME	3000	
DOLO LIME	5000	
CRG. CARBON		

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	2965		

OXYGEN PPM 32

TAP TIME: 22:42

REMARKS (list) _____

Nucor Steel - Crawfordsville AOD Log

Heat #	**246985**	**Grade**	**409S2**	Operator	bfay
Practice	CRSS LCLN	Slag	ANY SS GRADE	Heat Created	05/19/04 09:39
Lining ID	April#2 04	Lining Minutes	605	Heats	160
				Min. Weight	200,000

AddsWiz Oxygen Estimate 75046 TapToCharge 173.0248

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.582	0.270	0.040	0.065	0.158	5.970	0.140	0.005	0.008
A1	0.026	0.140	0.032	0.065	0.009	7.430	0.150	0.008	0.002
A2	0.009	0.190	0.030	0.048	0.016	9.150	0.140	0.007	0.002
A3	0.009	0.260	0.029	0.018	0.204	10.030	0.140	0.006	0.002
A4	0.010	0.280	0.029	0.018	0.322	10.620	0.140	0.007	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
42.51	6.35	30.04	20.91	0.00	0.00	25,818.52

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
9:40	Chem T1					
9:55	Charge					
9:58	Sample		0.5823			6816
10:03	Temp	2753				
10:04	Decarb					
10:04	AddsWiz					
10:05	Sample		0.5908	3623		10476
10:06	Decarb					
10:06	AddsWiz					
10:35	Sample		0.0147	89996		80254
10:38	Temp	2980				
10:39	Decarb					
10:53	Chem A1					
10:56	Reduce					
10:58	AddsWiz					
11:07	Sample		0.0067	106435		185644
11:15	Temp	2970				
11:18	Chem A2					
11:18	AddsWiz					
11:22	Reduce					
11:28	Sample		0.0088	106435		207823
11:32	Temp	2887				
11:46	AddsWiz					
11:50	Fuel %Al					
11:55	Sample		0.0094	116279		229997
11:59	Temp	2931				
12:11	Chem A4					
12:13	Fuel %Si					
12:16	Sample		0.0106	119817		238525
12:17	Tap					
Tap Heat	05/19/04 12:17		**TOTALS**	**119817**	**0**	**238621**

Charge Heat 05/19/04 9:55 Transfer Wt 214,000

Charge - Tap 143 **Tap Wt 238,234**

Heat # 246985

ADDITIONS	Recipe1	Recipe2	Recipe3	Recipe4	Recipe5	Recipe6	Recipe7	Stainless lime	WizDec01	WizDSg01	WizR 1
Al	500		250	1,000			200				1,0
Dolo										2,772	
FeCrSi											1,0
FeSi	1,000				250						1,5
HCFeCr									17,602		
LCCr	3,500		3,500			1,000					
Lime		1,000						5,000		1,740	
Total	**5,000**	**1,000**	**3,750**	**1,000**	**250**	**1,000**	**200**	**5,000**	**17,602**	**4,512**	**3,6**

Heat # 246085

Nucor Steel - Crawfordsville AOD Log

Heat # 246986 **Grade** 409S2 Operator bfay

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 12:22

Lining ID April#2 04 Lining Minutes 748 Heats 161 Min. Weight 200,000

AddsWiz Oxygen Estimate 64707 TapToCharge 4.9585

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.820	0.340	0.038	0.070	0.106	8.850	0.140	0.005	0.007
A1	0.019	0.210	0.031	0.050	0.010	9.550	0.150	0.005	0.002
A2	0.011	0.300	0.029	0.045	0.122	10.910	0.140	0.006	0.002
A3	0.010	0.320	0.030	0.031	0.189	11.000	0.140	0.006	0.002
L4	0.009	0.330	0.029	0.016	0.243	11.020	0.140	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
44.28	5.78	34.65	15.04	0.00	0.00	16,135.44

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:22	Charge					
12:23	Chem T1					
12:25	Sample		0.8199			4557
12:27	Temp	2725				
12:28	Decarb					
12:28	AddsWiz					
12:57	Sample		0.0148	78345		78653
13:01	Temp	2999				
13:02	Decarb					
13:06	Chem A1					
13:12	Reduce					
13:13	AddsWiz					
13:19	Sample		0.0040	89910		139344
13:22	Temp	3074				
13:26	Chem A2					
13:29	Reduce					
13:33	Sample		0.0124	89910		155807
13:39	Temp	3015				
13:46	Chem A3					
13:48	Reduce					
13:54	Sample		0.0100	89910		176715
14:04	Tap					
Tap Heat	05/19/04 14:04		**TOTALS**	**89910**	**0**	**176832**
Charge Heat	05/19/04 12:22	Transfer Wt	224,000			
Charge - Tap	**102**	**Tap Wt**	**234,273**			

ADDITIONS	Recipe1	Recipe2	Recipe3	Recipe4	Recipe5	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	Tota
Al	250		300						816	700	2,0
Dolo								2,134			2,1
FeCrSi									1,000		1,0
FeSi	350		150						1,225	1,000	2,7
HCFeCr							10,000				10,0
LCCr	750				500						1,2
Lime		1,000		500		5,000		500			7,0
Total	**1,350**	**1,000**	**450**	**500**	**500**	**5,000**	**10,000**	**2,634**	**3,041**	**1,700**	**26,1**

Nucor Steel - Crawfordsville AOD Log

Heat # 246987 **Grade** 409S2 Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 14:11

Lining ID April#2 04 Lining Minutes 850 Heats 162 Min. Weight 200,000

AddsWiz Oxygen Estimate 81095 TapToCharge 6.929333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	0.817	0.330	0.035	0.054	0.138	8.010	0.150	0.005	0.008
A1	0.006	0.210	0.028	0.052	0.009	8.710	0.170	0.005	0.002
A2	0.009	0.310	0.027	0.013	0.056	11.280	0.160	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.13	8.17	29.19	11.28	0.00	0.00	22,464.85

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
14:11	Charge					
14:12	Chem T1					
14:13	Sample		0.8175			4428
14:15	Temp	2643				
14:16	Decarb					
14:16	Sample		0.8175	45		6722
14:22	Decarb					
14:22	AddsWiz					
14:54	Sample		0.0147	94780		83063
14:56	Temp	3158				
14:57	Decarb					
15:01	Sample		0.0065	96805		101020
15:03	Temp	3065				
15:04	Decarb					
15:09	Chem A1					
15:09	Reduce					
15:09	AddsWiz					
15:21	Sample		0.0071	101121		163460
15:27	Temp	3043				
15:30	Chem A2					
15:31	Reduce					
15:36	Sample		0.0095	101121		179103
15:37	Tap					
Tap Heat	05/19/04 15:37		**TOTALS**	**101121**	**0**	**179216**
Charge Heat	05/19/04 14:11	Transfer Wt	236,000			
Charge - Tap	**86**	**Tap Wt**	**247,565**			

ADDITIONS	Recipe1	Recipe2	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al	100					1,154	600		**1,854**
Dolo					2,997			1,273	**4,270**
FeCrSi						1,000			**1,000**
FeSi	400	250				1,814	800		**3,264**
HCFeCr				13,000					**13,000**
Lime			5,000		2,310			2,823	**10,133**
Total	**500**	**250**	**5,000**	**13,000**	**5,307**	**3,968**	**1,400**	**4,096**	**33,521**

Nucor Steel - Crawfordsville AOD Log

Heat # 246988 **Grade** 409S2 Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 15:40

Lining ID April#2 04 Lining Minutes 935 Heats 163 Min. Weight 200,000

AddsWiz Oxygen Estimate 73566 TapToCharge 3.925

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.046	0.340	0.034	0.049	0.189	9.070	0.120	0.007	0.014
A1	0.009	0.250	0.028	0.049	0.010	9.980	0.140	0.005	0.002
A2	0.008	0.330	0.028	0.008	0.236	11.350	0.130	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
49.12	7.18	30.54	12.78	0.00	0.00	16,048.11

55-56 11-12 21 13-14

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
15:40	Charge					
15:44	Chem T1					
15:45	Sample		1.0456			8512
15:47	Temp	2669				
15:47	Decarb					
15:48	AddsWiz					
16:17	Sample		0.0148	82585		84681
16:20	Temp	3041				
16:20	Decarb					
16:24	Chem A1					
16:27	Reduce					
16:27	AddsWiz					
16:37	Sample		0.0057	89875		145934
16:44	Temp	3071				
16:47	Tap					
Tap Heat	05/19/04 16:47		**TOTALS**	**89875**	**0**	**146049**

Charge Heat 05/19/04 15:40 Transfer Wt 230,000

Charge - Tap 67 **Tap Wt** 235,622

ADDITIONS	Recipe1	WizDec01	WizDSg01	WizRed01	WizRed02	WizRSg01	Total
Al				1,200	250		**1,450**
Dolo			2,190			700	**2,890**
FeCrSi				1,000			**1,000**
FeSi				1,022	708		**1,730**
HCFeCr	1,000	6,774					**7,774**
Lime			450			1,500	**1,950**
Total	**1,000**	**6,774**	**2,640**	**3,222**	**958**	**2,200**	**16,794**

Heat # 246988 Page 1 of 2

Nucor Steel - Crawfordsville AOD Log

Heat # 246989 **Grade** 409S2 Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 16:56

Lining ID April#2 04 Lining Minutes 1002 Heats 164 Min. Weight 200,000

AddsWiz Oxygen Estimate 63016 TapToCharge 25.796

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.181	0.310	0.033	0.056	0.224	10.870	0.140	0.007	0.018
A1	0.024	0.270	0.027	0.054	0.010	10.590	0.150	0.005	0.002
A2	0.009	0.320	0.027	0.006	0.150	11.370	0.140	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.48	8.28	26.46	13.26	0.02	0.00	15,319.50

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
16:56	Chem T1					
17:13	Charge					
17:18	Sample		1.1813			9086
17:19	Temp	2719				
17:20	Decarb					
17:21	AddsWiz					
17:48	Sample		0.0148	71185		86518
17:50	Temp	3031				
17:51	Decarb					
17:57	Chem A1					
18:04	Reduce					
18:04	AddsWiz					
18:15	Sample		0.0064	81893		174900
18:18	Temp	3057				
18:41	Reduce					
18:42	Sample		0.0064	81893		181362
18:44	Tap					
Tap Heat	05/19/04 18:44		**TOTALS**	**81893**	**0**	**181472**
Charge Heat	05/19/04 17:13	Transfer Wt	234,000			
Charge - Tap	**91**	**Tap Wt**	**232,455**			

ADDITIONS	Recipe1	Recipe2	Stainless lime	WizDSg 01	WizRed0 1	WizRed0 2	WizRSg 01	Total
Al					1,000	450		**1,450**
Dolo				1,808			1,077	**2,885**
FeCrSi					509			**509**
FeSi		200			541	600		**1,341**
HCFeCr	750							**750**
Lime			5,000				1,851	**6,851**
Total	**750**	**200**	**5,000**	**1,808**	**2,050**	**1,050**	**2,928**	**13,786**

Nucor Steel - Crawfordsville AOD Log

Heat # **246990** **Grade** **409S2** Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 18:46

Lining ID April#2 04 Lining Minutes 1093 Heats 165 Min. Weight 200,000

AddsWiz Oxygen Estimate 69766 TapToCharge 2.133333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.526	0.410	0.034	0.049	0.205	10.900	0.190	0.006	0.016
A1	0.059	0.370	0.028	0.041	0.010	11.070	0.190	0.004	0.002
A2	0.006	0.400	0.028	0.003	0.192	11.390	0.190	0.004	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
51.12	7.72	24.39	16.12	0.03	0.00	13,346.82

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
18:46	Charge					
18:46	Chem T1					
18:50	Sample		1.5260			6600
18:52	Temp	2773				
18:53	Decarb					
18:55	AddsWiz					
19:23	Sample		0.0148	77151		87515
19:25	Temp	3023				
19:25	Decarb					
19:29	Chem A1					
19:44	Reduce					
19:44	AddsWiz					
19:51	Sample		0.0035	90528		186898
19:56	Temp	3109				
20:03	Reduce					
20:03	Chem A2					
20:04	Sample		0.0064	90528		193620
20:05	Tap					
Tap Heat	05/19/04 20:05		**TOTALS**	**90528**	**0**	**193744**

Charge Heat 05/19/04 18:46 Transfer Wt 236,000

Charge - Tap **79** **Tap Wt** **232,566**

ADDITIONS	Recipe1	Recipe2	Stainless lime	WizDSg 01	WizRed0 1	WizRed0 2	Total
Al					900	600	**1,500**
Dolo				2,500			**2,500**
FeSi		150				1,000	**1,150**
HCFeCr	500						**500**
Lime			5,000	1,500			**6,500**
Total	**500**	**150**	**5,000**	**4,000**	**900**	**1,600**	**12,150**

Nucor Steel - Crawfordsville AOD Log

Heat # 246991 **Grade** 409S2 Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 20:07

Lining ID April#2 04 Lining Minutes 1172 Heats 166 Min. Weight 200,000

AddsWiz Oxygen Estimate 60933 TapToCharge 2.158333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.265	0.270	0.032	0.062	0.163	10.240	0.160	0.006	0.015
A1	0.056	0.250	0.027	0.032	0.009	10.420	0.160	0.004	0.002
A2	0.008	0.290	0.026	0.004	0.143	11.130	0.160	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
55.64	9.29	20.82	13.74	0.02	0.00	15,580.41

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
20:07	Charge					
20:08	Chem T1					
20:11	Sample		1.2647			6145
20:12	Temp	2884				
20:13	Decarb					
20:14	AddsWiz					
20:42	Sample		0.0148	70455		83622
20:44	Temp	3038				
20:45	Decarb					
20:49	Chem A1					
21:02	Reduce					
21:02	AddsWiz					
21:09	Sample		0.0034	82362		175733
21:13	Temp	3122				
21:17	Reduce					
21:17	Chem A2					
21:19	Sample		0.0078	82362		183385
21:20	Tap					
Tap Heat	05/19/04 21:20		**TOTALS**	**82362**	**0**	**183481**
Charge Heat	05/19/04 20:07	Transfer Wt	234,000			
Charge - Tap	**72**	**Tap Wt**	**234,190**			

ADDITIONS	Recipe1	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	Total
Al					900	600	**1,500**
Dolo				3,400			**3,400**
FeCrSi					616		**616**
FeSi	300					800	**1,100**
HCFeCr			2,800				**2,800**
Lime		5,000		3,000			**8,000**
Total	**300**	**5,000**	**2,800**	**6,400**	**1,516**	**1,400**	**17,416**

Nucor Steel - Crawfordsville AOD Log

Heat #	**246992**	**Grade**	**409S2**	Operator	jnichols
Practice	CRSS LCLN	Slag	ANY SS GRADE	Heat Created	05/19/04 21:22
Lining ID	April#2 04	Lining Minutes	1244	Heats	167
				Min. Weight	200,000

AddsWiz Oxygen Estimate 62770 TapToCharge 2.237333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.221	0.290	0.025	0.053	0.152	9.870	0.150	0.004	0.015
A1	0.021	0.270	0.023	0.032	0.010	10.060	0.160	0.004	0.002
A2	0.009	0.310	0.024	0.003	0.047	11.100	0.150	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
59.27	9.74	16.99	13.50	0.00	0.00	15,268.07

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
21:22	Charge					
21:23	Chem T1					
21:25	Sample		1.2210			6608
21:27	Temp	2863				
21:28	Decarb					
21:28	AddsWiz					
21:56	Sample		0.0148	72608		81673
21:58	Temp	3083				
21:59	Decarb					
22:09	Chem A1					
22:11	Reduce					
22:11	AddsWiz					
22:18	Sample		0.0051	77351		158460
22:22	Temp	3073				
22:26	Chem A2					
22:26	Reduce					
22:28	Sample		0.0088	77351		163554
22:29	Tap					
Tap Heat	05/19/04 22:29		**TOTALS**	**77351**	**0**	**163663**
Charge Heat	05/19/04 21:22	Transfer Wt	232,000			
Charge - Tap	**67**	**Tap Wt**	**235,916**			

ADDITIONS	Recipe1	Recipe2	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	Total
1006	1,500							**1,500**
Al						1,000	450	**1,450**
Dolo					3,500			**3,500**
FeCrSi						1,000		**1,000**
FeSi		600					350	**950**
HCFeCr				4,000				**4,000**
LCCr		700						**700**
Lime			5,000		3,000			**8,000**
Total	**1,500**	**1,300**	**5,000**	**4,000**	**6,500**	**2,000**	**800**	**21,100**

Nucor Steel - Crawfordsville AOD Log

Heat #	**246993**	**Grade**	**409S2**	Operator	jnichols
Practice	CRSS LCLN	Slag	ANY SS GRADE	Heat Created	05/19/04 22:30
Lining ID	April#2 04	Lining Minutes	1311	Heats 168	Min. Weight 200,000

AddsWiz Oxygen Estimate 72507 TapToCharge 1.558333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.123	0.340	0.030	0.047	0.170	9.380	0.140	0.006	0.012
A1	0.031	0.300	0.024	0.039	0.010	10.040	0.150	0.004	0.002
A2	0.011	0.350	0.024	0.003	0.209	11.000	0.140	0.006	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.97	8.24	21.86	14.48	0.00	0.00	15,733.01

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
22:30	Charge					
22:32	Chem T1					
22:34	Sample		1.1233			6708
22:35	Temp	2805				
22:35	AddsWiz					
22:36	Decarb					
23:05	Sample		0.0148	76200		81759
23:06	Temp	3048				
23:08	Decarb					
23:10	Chem A1					
23:20	Reduce					
23:20	AddsWiz					
23:27	Sample		0.0059	82297		156354
23:31	Temp	3043				
23:34	Chem A2					
23:35	Reduce					
23:36	Sample		0.0109	82297		161991
23:37	Tap					
Tap Heat	05/19/04 23:37		**TOTALS**	**82297**	**0**	**162100**

Charge Heat 05/19/04 22:30 Transfer Wt 233,000

Charge - Tap 67 **Tap Wt 239,806**

ADDITIONS	Recipe1	Recipe2	Recipe3	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	Total
1006	300		1,000				1,500		**2,800**
Al							1,175	400	**1,575**
Dolo						3,000			**3,000**
FeCrSi							1,000		**1,000**
FeSi		175					450	300	**925**
HCFeCr					5,625				**5,625**
LCCr		1,200							**1,200**
Lime				5,000		3,000			**8,000**
Total	**300**	**1,375**	**1,000**	**5,000**	**5,625**	**6,000**	**4,125**	**700**	**24,125**

Heat # **246994** **Grade** **409S2** Operator jnichols

Practice CRSS LCLN Slag ANY SS GRADE Heat Created 05/19/04 23:38

Lining ID April#2 04 Lining Minutes 1378 Heats 169 Min. Weight 200,000

AddsWiz Oxygen Estimate 66721 TapToCharge 1.45

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.066	0.330	0.024	0.043	0.172	9.160	0.150	0.007	0.014
A1	0.033	0.310	0.021	0.024	0.009	10.140	0.160	0.005	0.002
A2	0.009	0.360	0.021	0.008	0.140	11.340	0.160	0.005	0.004

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
53.01	5.85	23.72	16.90	0.01	0.00	15,326.78

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
23:39	Charge					
23:39	Chem T1					
23:42	Sample		1.0655			5320
23:43	Temp	2789				
23:43	AddsWiz					
23:44	Decarb					
0:12	Sample		0.0148	74717		78605
0:14	Temp	3019				
0:14	Decarb					
0:18	Chem A1					
0:28	Reduce					
0:28	AddsWiz					
0:34	Sample		0.0059	83750		152677
0:38	Temp	3095				
0:42	Chem A2					
0:44	Chem A2					
0:44	Reduce					
0:46	Sample		0.0095	83750		159257
0:47	Tap					
Tap Heat	05/20/04 0:47		**TOTALS**	**83750**	**0**	**159362**

Charge Heat 05/19/04 23:39 Transfer Wt 229,000

Charge - Tap **68** **Tap Wt** **237,513**

ADDITIONS	Recipe1	Recipe2	Recipe3	Stainless lime	WizDec01	WizDSg01	WizRed01	WizRed02	Total
1006	300	1,500	1,000				1,500		**4,300**
Al							1,100	700	**1,800**
Dolo						2,000			**2,000**
FeCrSi							1,000		**1,000**
FeSi		350					150	650	**1,150**
HCFeCr					6,374				**6,374**
LCCr		500							**500**
Lime				5,000		3,000			**8,000**
Total	**300**	**2,350**	**1,000**	**5,000**	**6,374**	**5,000**	**3,750**	**1,350**	**25,124**

Nucor Steel - Crawfordsville AOD Log

Heat #	**246995**	**Grade**	**409S2**	Operator	jnichols
Practice	CRSS LCLN	Slag	ANY SS GRADE	Heat Created	05/20/04 00:48
Lining ID	April#2 04	Lining Minutes	1446	Heats 170	Min. Weight 200,000

AddsWiz Oxygen Estimate 14025 TapToCharge 1.683333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.004				0.100	11.050			
Max	0.015			0.010	0.200	11.250			

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
T1	1.156	0.330	0.029	0.049	0.228	9.490	0.140	0.006	0.015
A1	0.031	0.280	0.023	0.038	0.009	10.540	0.150	0.004	0.002
A2	0.009	0.330	0.024	0.003	0.171	11.420	0.150	0.005	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
54.48	6.00	22.95	13.82	2.62	0.00	14,875.93

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
0:48	Charge					
0:49	Chem T1					
0:51	Sample		1.1557			5506
0:53	Temp	2800				
0:53	AddsWiz					
0:54	Decarb					
1:21	Sample		0.0148	74799		77818
1:23	Temp	3040				
1:24	Decarb					
1:29	Chem A1					
1:38	Reduce					
1:39	AddsWiz					
1:39	AddsWiz					
1:39	AddsWiz					
1:46	Sample		0.0054	82790		160007
1:50	Temp	3064				
1:55	Chem A2					
1:57	Reduce					
1:57	Chem A2					
1:59	Sample		0.0096	82790		165050
1:59	Tap					
Tap Heat	05/20/04 1:59		**TOTALS**	**82790**	**0**	**165152**

Charge Heat 05/20/04 0:48 Transfer Wt 232,000

Charge - Tap 71 **Tap Wt 236,423**

ADDITIONS	Recipe1	Recipe2	Recipe3	Recipe4	Recipe5	WizDec01	WizRed01	Total
1006		300			500		1,500	**2,300**
Al				500			950	**1,450**
Dolo	2,000		1,500					**3,500**
FeCrSi							1,000	**1,000**
FeSi				400	250		147	**797**
HCFeCr						5,103		**5,103**
LCCr								
Lime	3,000		3,000					**6,000**
Total	**5,000**	**300**	**4,500**	**900**	**750**	**5,103**	**3,597**	**20,150**

Nucor Steel - Crawfordsville AOD Log

Heat #	**246996**	**Grade**	**1005S1**	Operator	jnichols
Practice	Castrip	Slag	LCLNCarbon	Heat Created	05/20/04 02:02
Lining ID	April#2 04	Lining Minutes	1517	Heats	171
				Min. Weight	200,000

AddsWiz Oxygen Estimate

TapToCharge 7.166667

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.107	0.130	0.012	0.065	0.010	0.781	0.050	0.007	0.002
T1	0.051	0.090	0.010	0.064	0.001	0.563	0.052	0.009	0.002
A1	0.013	0.590	0.012		0.415	0.579	0.053	0.004	0.003
A2	0.013	0.590	0.012		0.381	0.587	0.052	0.004	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
52.80	9.57	11.48	25.69	0.00	0.00	6,805.43

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
2:06	Chem T1					
2:07	Charge					
2:09	Decarb					
2:15	Reduce					
2:22	Sample		0.0401	12346		37405
2:27	Temp	3007				
2:28	Chem A1					
2:29	Fuel %Al					
2:30	Reduce					
2:30	Reduce					
2:33	Sample		0.0141	14142		47833
2:35	Temp	3011				
2:38	Chem A2					
2:38	Fuel %Al					
2:39	Reduce					
2:42	Sample		0.0130	15112		56695
2:42	Tap					
Tap Heat	05/20/04 2:42		**TOTALS**	**15112**	**0**	**56889**
Charge Heat	05/20/04 2:07	Transfer Wt	232,997			
Charge - Tap	**36**	**Tap Wt**	**235,465**			

ADDITIONS	Recipe1	Recipe2	Recipe4	Recipe5	Recipe6	Total
1006					100	**100**
Al	500	800				**1,300**
Dolo			1,500			**1,500**
FeSi		1,200				**1,200**
Lime			3,000			**3,000**
Med C		1,300		100		**1,400**
Total	**500**	**3,300**	**4,500**	**100**	**100**	**8,500**

Heat # 246997 **Grade** 1005S1 Operator jnichols

Practice Castrip Slag LCLNCarbon Heat Created 05/20/04 02:47

Lining ID April#2 04 Lining Minutes 1553 Heats 172 Min. Weight 200,000

AddsWiz Oxygen Estimate TapToCharge 12.73333

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.051	0.050	0.003	0.037		0.135	0.022	0.008	0.002
L1	0.012	0.570	0.004		0.319	0.165	0.023	0.004	0.002
A1	0.012	0.570	0.004		0.316	0.164	0.022	0.004	0.002

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
57.16	10.24	12.75	19.73	0.00	0.00	6,322.28

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
2:48	Chem F1					
2:55	Charge					
2:58	Decarb					
3:03	Reduce					
3:11	Sample		0.0289	12162		38147
3:17	Temp	2989				
3:20	Chem A1					
3:20	Reduce					
3:22	Sample		0.0136	12162		43471
3:23	Tap					
Tap Heat	05/20/04 3:23		**TOTALS**	**12162**	**0**	**43598**
Charge Heat	05/20/04 2:55	Transfer Wt	236,000			
Charge - Tap	**28**	**Tap Wt**	**238,596**			

ADDITIONS	Recipe1	Recipe3	Recipe4	Total
Al	500	850		**1,350**
FeSi		1,200		**1,200**
Med C		1,400	150	**1,550**
Total	**500**	**3,450**	**150**	**4,100**

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141252 FULL WEIGHT: _____ DATE: 5/20/21 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: TIM KWH START: _____
LADLE NO: _____ WEIGHT TAPPED: 125 AIM GRADE: _____ KWH USED: 50
LAST HEAT TAPPED: 5:24 HEATS ON DELTA: 198 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		048			067									
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
CASTING HEAT		
SCRAP TOTAL	76	54.5
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3040		

OXYGEN PPM 859

TAP TIME: 6:33

REMARKS (list) _____

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 141254 | FULL WEIGHT: _____ | DATE: 5/20 21 | KWH END: _____

HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Tim | KWH START: 4

LADLE NO: 11 | WEIGHT TAPPED: 131 | AIM GRADE: _____ | KWH USED: 47

LAST HEAT TAPPED: 7:18 | HEATS ON DELTA: 200 | PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		036			058									
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	54
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3027		

OXYGEN PPM 1007

TAP TIME: 8:03

REMARKS (list) _____

F-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 141255 FULL WEIGHT: _____ DATE: 5/20 KWH END: _____

HEATS ON BOTTOM: 9 TARE WEIGHT: _____ MELTER: TM KWH START: _____

LADLE NO: 9 WEIGHT TAPPED: 130 AIM GRADE: _____ KWH USED: 49

LAST HEAT TAPPED: 8:03 HEATS ON DELTA: 201 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		038			061									
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	60
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3026		

OXYGEN PPM 905

TAP TIME: 8:54

REMARKS (list)

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141256 | FULL WEIGHT: _____ | DATE: 5/20/21 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Tim | KWH START: _____
LADLE NO: 1 | WEIGHT TAPPED: 129 | AIM GRADE: _____ | KWH USED: 8750
LAST HEAT TAPPED: 8:54 | HEATS ON DELTA: 302 | PATCH: _____ LBS(EST)

		CHEMISTRY												TOTAL
SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	RESID
F-1		034			063									
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	60.5
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	2953		

OXYGEN PPM 979

TAP TIME: 9:41

REMARKS (list) _____

XF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 141257 FULL WEIGHT: _____ DATE: 5/21 KWH END: _____

HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Mike S KWH START: _____

LADLE NO: 5 WEIGHT TAPPED: 240000 AIM GRADE: _____ KWH USED: 52

LAST HEAT TAPPED: 9:47 HEATS ON DELTA: 203 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		030			065		076							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	75	60
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	2999	022	

TAP TIME: 1041

OXYGEN PPM 198

REMARKS (list)

F-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141258 FULL WEIGHT: _____ DATE: 5-21 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: myers KWH START: _____
LADLE NO: 4 WEIGHT TAPPED: [illegible] AIM GRADE: _____ KWH USED: 46
LAST HEAT TAPPED: 10:41 HEATS ON DELTA: 204 PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		030			064		185							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	104
SCRAP TOTAL		127 ton
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3050	0123	

LADLE ALLOYS WEIGHT(LBS)

1	

OXYGEN PPM 1100

TAP TIME: 1129

REMARKS (list) _____

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141259 | FULL WEIGHT: _____ | DATE: 5-21 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: MYERS | KWH START: _____
LADLE NO: 11 | WEIGHT TAPPED: 260000 | AIM GRADE: _____ | KWH USED: 49
LAST HEAT TAPPED: M29 | HEATS ON DELTA: 205 | PATCH: — LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		041			058		087							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	151	120
SCRAP TOTAL		135 Ston
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			6 Tap no.
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			6 Tap no.
Power on			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3004	027	

OXYGEN PPM 993

LADLE ALLOYS	WEIGHT(LBS)
1	

TAP TIME: 1211

REMARKS (list)

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141260 FULL WEIGHT: _____ DATE: 5-21 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: M YERGE KWH START: _____
LADLE NO: 3 WEIGHT TAPPED: 254000 AIM GRADE: _____ KWH USED: 45
LAST HEAT TAPPED: 1211 HEATS ON DELTA: 2016 PATCH: — LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		042			006		076							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	122
SCRAP TOTAL		136 ton
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6-8 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6-8 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2999	0026	

LADLE ALLOYS	WEIGHT(LBS)

OXYGEN PPM 1070

TAP TIME: 1500

REMARKS (list) _____

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 148261 FULL WEIGHT: _____ DATE: 5-21 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Myers KWH START: _____
LADLE NO: 12 WEIGHT TAPPED: 282 000 AIM GRADE: _____ KWH USED: 52
LAST HEAT TAPPED: 1300 HEATS ON DELTA: 207 PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		048			058		070							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	120
SCRAP TOTAL		135 tons
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6-8 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6-8 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	2975	029	

TAP TIME: 1347

OXYGEN PPM: 895

REMARKS (list)

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141262 FULL WEIGHT: _____ DATE: 5-21 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: Myers KWH START: _____
LADLE NO: 9 WEIGHT TAPPED: 258000 AIM GRADE: _____ KWH USED: 00
LAST HEAT TAPPED: 1347 HEATS ON DELTA: 208 PATCH: — LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		040			053		080							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	120
SCRAP TOTAL		1360 LBS
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			6-8 Tap no.
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			6-8 Tap no.
Power on			Tap no.
			CF
Oxy-fuel burners			CF CH
			CF O
Vulcan lance on			
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2968	0126	

LADLE ALLOYS WEIGHT(LBS)

1	

OXYGEN PPM 931

TAP TIME: 1530

REMARKS (list)

Add B Phase - Geminis
Broke B Phase - Geminis

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141263
HEATS ON BOTTOM:
LADLE NO: 4
LAST HEAT TAPPED: 1520

FULL WEIGHT:
TARE WEIGHT:
WEIGHT TAPPED: 260000
HEATS ON DELTA: 209

DATE: 5-21
MELTER: Myers
AIM GRADE:
PATCH: — LBS(EST)

KWH END:
KWH START:
KWH USED: 50

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		050			059		089							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	119
SCRAP TOTAL		134.5ton
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END		
Drop 1st bucket				
Power on			6	Tap no.
				Tap no.
				Tap no.
Oxy-fuel burners				CF
				CF CH
Vulcan lance on				CF O
Drop 2nd bucket				
Power on			6	Tap no.
				Tap no.
Oxy-fuel burners				CF
				CF CH
Vulcan lance on				CF O
Carbon Injector on				Lbs. Inj

Time	Temp	Time	Temp
	3085	024	

LADLE ALLOYS WEIGHT(LBS)

LADLE ALLOYS	WEIGHT(LBS)
|	

OXYGEN PPM [illegible]

TAP TIME: 1618

REMARKS (list)

NF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141264 | FULL WEIGHT: _____ | DATE: 5-21 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Myers | KWH START: _____
LADLE NO: 10 | WEIGHT TAPPED: 248000 | AIM GRADE: _____ | KWH USED: 49
LAST HEAT TAPPED: 1618 | HEATS ON DELTA: 210 | PATCH: — LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.11			.02		.084							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	150	121
SCRAP TOTAL		135.5
BURNT LIME	2000	
DOLO LIME	6000	
CRG. CARBON	1500	

LADLE ALLOYS	WEIGHT(LBS)

	START	END	
Drop 1st bucket			6
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			6
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3039	0038	

OXYGEN PPM 760

TAP TIME: 1705

REMARKS (list)

JF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141265 | FULL WEIGHT: _____ | DATE: 8-21 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: Myers | KWH START: _____
LADLE NO: 12 | WEIGHT TAPPED: 260000 | AIM GRADE: _____ | KWH USED: 48
LAST HEAT TAPPED: 1705 | HEATS ON DELTA: 21 | PATCH: ~ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		033			058		079							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	154	106
SCRAP TOTAL		130 ton
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			6 Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			6 Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)
1	

Time	Temp	Time	Temp
	3049	0029	

OXYGEN PPM 942

TAP TIME: 1753

REMARKS (list)

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 141266
HEATS ON BOTTOM: ____
LADLE NO: ~~[illegible]~~ 1
LAST HEAT TAPPED: 1753

FULL WEIGHT: ____
TARE WEIGHT: ____
WEIGHT TAPPED: 260000
HEATS ON DELTA: 212

DATE: 5-21
MELTER: Myers
AIM GRADE: ____
PATCH: — LBS(EST)

KWH END: ____
KWH START: ____
KWH USED: 48

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.041			.063		.028							
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	152	118
SCRAP TOTAL		135 ton
BURNT LIME	2000	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END		
Drop 1st bucket			6	Tap no.
Power on				Tap no.
				Tap no.
Oxy-fuel burners				CF
				CF CH
Vulcan lance on				CF O
Drop 2nd bucket			6	Tap no.
Power on				Tap no.
Oxy-fuel burners				CF
				CF CH
Vulcan lance on				CF O
Carbon Injector on				Lbs. Inj

Time	Temp	Time	Temp
	3018	032	

LADLE ALLOYS	WEIGHT(LBS)
1	

OXYGEN PPM 044

TAP TIME: 1840

REMARKS (list)

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7081 | FULL WEIGHT: _____ | DATE: 5-2004 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: TM | KWH START: _____
LADLE NO: 4 | WEIGHT TAPPED: 268000 | AIM GRADE: 1006 | KWH USED: 47
LAST HEAT TAPPED: 07118 | HEATS ON DELTA: 139 | PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		040			007		077							48
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	152	110
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	-0-	

LADLE ALLOYS	WEIGHT(LBS)

TAP TIME: 08:06

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

131

Time	Temp	Time	Temp
	3037		

OXYGEN PPM 837

REMARKS (list)

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-7032 | FULL WEIGHT: _____ | DATE: 5-20-04 (21) | KWH END: _____

HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: TIM | KWH START: _____

LADLE NO: 7 | WEIGHT TAPPED: 258000 | AIM GRADE: 1006 | KWH USED: 49

LAST HEAT TAPPED: 08:06 | HEATS ON DELTA: 131 | PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		036			060		089							17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	152	120
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	-0-	

LADLE ALLOYS	WEIGHT(LBS)

	START	END	
Drop 1st bucket			
Power on			_____ Tap no.
			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Drop 2nd bucket			
Power on			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Carbon Injector on			_____ Lbs. Inj

136

Time	Temp	Time	Temp
	2961		

OXYGEN PPM 731

TAP TIME: 08:54

REMARKS (list) _____

IF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24-7033 | FULL WEIGHT: | DATE: 5-20-04 | KWH END:
HEATS ON BOTTOM: | TARE WEIGHT: | MELTER: TIM | KWH START:
LADLE NO: 12 | WEIGHT TAPPED: 260000 | AIM GRADE: 1006 | KWH USED: 38
LAST HEAT TAPPED: 08154 | HEATS ON DELTA: 132 | PATCH: 1200 LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.04			.006		.10						.006	.15
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	155	120
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	~~1500~~ 1538	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2962	.027	

LADLE ALLOYS	WEIGHT(LBS)

OXYGEN PPM: 919

TAP TIME: 10'08

REMARKS (list)

TAP 8 MIN
CHARGE CRANE 12 MIN.

NUCOR STEEL - CRAWFORDSVILLE

EBT HEAT RECORD

HEAT NO: 24.7034 | FULL WEIGHT: _____ | DATE: 5-21-04 | KWH END: _____

HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: DR | KWH START: _____

LADLE NO: 10 | WEIGHT TAPPED: ~~250~~000 | AIM GRADE: 1008D2 | KWH USED: 57

LAST HEAT TAPPED: 10:08 | HEATS ON DELTA: 133 | PATCH: 1 LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.03			.06		.11						.0066	.17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	150	130
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2975	028	

LADLE ALLOYS | WEIGHT(LBS)

OXYGEN PPM 921

TAP TIME: 10:56

REMARKS (list) _____

F-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7035 | FULL WEIGHT: _____ | DATE: 5-21-04 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: DR | KWH START: _____
LADLE NO: 9 | WEIGHT TAPPED: 270000 | AIM GRADE: 1008 PR | KWH USED: 54
LAST HEAT TAPPED: 10:56 | HEATS ON DELTA: 134 | PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.03			.06		.10						.007	17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	1600	130
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3066	2104	

LADLE ALLOYS | WEIGHT(LBS)

OXYGEN PPM 1253

TAP TIME: 11:48

REMARKS (list) _____

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7036 FULL WEIGHT: _____ DATE: 5-21-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 0 WEIGHT TAPPED: 238000 AIM GRADE: 1008 KWH USED: 53
LAST HEAT TAPPED: 11:48 HEATS ON DELTA: 135 PATCH: _____ LBS(EST)

		CHEMISTRY												TOTAL
SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	RESID
F-1		.04			.07		.08						.006	.17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	170
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3070	.032	

CASTED

OXYGEN PPM 946

TAP TIME: 12:34

REMARKS (list)

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7037 FULL WEIGHT: _____ DATE: 5-21-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 7 WEIGHT TAPPED: 260000 AIM GRADE: 1008 KWH USED: 54
LAST HEAT TAPPED: 12134 HEATS ON DELTA: 1316 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.08			.06		.07						.004	.16
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	120
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2993	0033	

LADLE ALLOYS	WEIGHT(LBS)

OXYGEN PPM 768

TAP TIME: 1121

REMARKS (list) _____

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7038 FULL WEIGHT: _____ DATE: 5-21-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 0 WEIGHT TAPPED: 216000 AIM GRADE: 1008 KWH USED: 44
LAST HEAT TAPPED: 121 HEATS ON DELTA: 137 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.04			.06		.09						.006	.19
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	1600	600
BURNT LIME	1500	
DOLO LIME	1700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3087	.037	

CASTER

LADLE ALLOYS	WEIGHT(LBS)

OXYGEN PPM 819

TAP TIME: 2.02

REMARKS (list) _____

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7039 FULL WEIGHT: _____ DATE: 5-21-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 5 WEIGHT TAPPED: 244000 AIM GRADE: 1008 KWH USED: 54
LAST HEAT TAPPED: 0:02 HEATS ON DELTA: 138 PATCH: _____ LBS(EST.)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.03			.06		.10						.007	.20
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	160	120
SCRAP TOTAL	80 Ton	60 Ton
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3041	.027	

OXYGEN PPM 1077

TAP TIME: 2:50

REMARKS (list) Charge Crane - 2 min

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7040 FULL WEIGHT: _____ DATE: 5-21-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 1 WEIGHT TAPPED: 260000 AIM GRADE: 1008 KWH USED: 52
LAST HEAT TAPPED: 2132 HEATS ON DELTA: 134 PATCH: _____ LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.05			.07		.09						.007	.23
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
	80	55
SCRAP TOTAL	160	110
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3029	.030	

LADLE ALLOYS WEIGHT(LBS)

OXYGEN PPM 939

TAP TIME: 3:42

REMARKS (list) hot panel - 2
Tap 2

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 04-7041 | FULL WEIGHT: _____ | DATE: 5-21-04 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: DR | KWH START: _____
LADLE NO: 11 | WEIGHT TAPPED: 360000 | AIM GRADE: 1008 | KWH USED: 552
LAST HEAT TAPPED: 3142 | HEATS ON DELTA: 140 | PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.02			.06		.10						.007	.18
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	110
BURNT LIME	1500	
DOLO LIME	4700	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			_____ Tap no.
			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Drop 2nd bucket			
Power on			_____ Tap no.
			_____ Tap no.
Oxy-fuel burners			_____ CF
			_____ CF CH
Vulcan lance on			_____ CF O
Carbon Injector on			_____ Lbs. Inj

Time	Temp	Time	Temp
	3091	.018	

LADLE ALLOYS | WEIGHT(LBS)

16:30
TAP TIME: 4:36

OXYGEN PPM: 1091

REMARKS (list)
Set Sticks - 8.4 min
(B Phase #204
C Phase #203)

XF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 28-7042 FULL WEIGHT: _____ DATE: 5-21-05 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 7 WEIGHT TAPPED: 260000 AIM GRADE: 1008 KWH USED: 51
LAST HEAT TAPPED: 4136 HEATS ON DELTA: 141 PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.04			.06		.11						.007	.79
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	120
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	3142	1033	

TAP TIME: 5:21 (17:21)

OXYGEN PPM 1022

REMARKS (list) _____

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7043 FULL WEIGHT: _____ DATE: 5-24-04 KWH END: _____
HEATS ON BOTTOM: _____ TARE WEIGHT: _____ MELTER: DR KWH START: _____
LADLE NO: 5 WEIGHT TAPPED: 240000 AIM GRADE: 1008 KWH USED: 49
LAST HEAT TAPPED: 5121 HEATS ON DELTA: 142 PATCH: 2400 LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.03			.06		.09						.007	.17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	170
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

LADLE ALLOYS	WEIGHT(LBS)

Time	Temp	Time	Temp
	0990	-008	

TAP TIME: 6:16

OXYGEN PPM 925

REMARKS (list) Patch - 7min 2400lbs

QF-0043 9/12/97

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7044 | FULL WEIGHT: _____ | DATE: 5-21-04 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: DR | KWH START: _____
LADLE NO: 4 | WEIGHT TAPPED: 252000 | AIM GRADE: 1008 | KWH USED: _____
LAST HEAT TAPPED: 6116 | HEATS ON DELTA: 143 | PATCH: — LBS(EST)

CHEMISTRY

SAMPLE	TIME	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.04			.07		.09						.006	.17
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	120
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	1500	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	3025	-0324	

LADLE ALLOYS | WEIGHT(LBS)

TAP TIME: 7:07

REMARKS (list)

OXYGEN PPM 812

Set Stick -3.2
(A phase #18)

NUCOR STEEL - CRAWFORDSVILLE
EBT HEAT RECORD

HEAT NO: 24-7045 | FULL WEIGHT: _____ | DATE: 5-21-09 | KWH END: _____
HEATS ON BOTTOM: _____ | TARE WEIGHT: _____ | MELTER: DR | KWH START: _____
LADLE NO: 11 | WEIGHT TAPPED: 200000 | AIM GRADE: 1008 | KWH USED: 52
LAST HEAT TAPPED: 7:07 | HEATS ON DELTA: 164 | PATCH: _____ LBS(EST)

SAMPLE	TIME	CHEMISTRY C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	V	N	TOTAL RESID
F-1		.05			.07		.07						.007	.15
F-2														
F-3														
F-4														

CHARGE	BKT #1	BKT #2
HOT HEEL		
BUSHELING		
SKULLS		
BUNDLES		
P/S		
SHREDDED		
SCRAP TOTAL	160	120
BURNT LIME	1500	
DOLO LIME	5000	
CRG. CARBON	600	

	START	END	
Drop 1st bucket			
Power on			Tap no.
			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Drop 2nd bucket			
Power on			Tap no.
			Tap no.
Oxy-fuel burners			CF
			CF CH
Vulcan lance on			CF O
Carbon Injector on			Lbs. Inj

Time	Temp	Time	Temp
	2983	036	

LADLE ALLOYS	WEIGHT(LBS)

19:55
TAP TIME: 7:55

OXYGEN PPM: 723

REMARKS (list)

Nucor Steel - Crawfordsville AOD Log

Heat #	**141252**	**Grade**	**1005S1**	Operator	jnichols
Practice	Castrip	Slag	LCLNCarbon	Heat Created	05/21/04 06:43
Lining ID	April#2 04	Lining Minutes	1717	Heats	179
				Min. Weight	200,000

AddsWiz Oxygen Estimate — TapToCharge 398.0123

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.048	0.100	0.010	0.067		0.048	0.036	0.008	0.002
A1	0.009	0.570	0.011	0.002	0.283	0.070	0.036	0.007	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
57.43	10.26	12.58	19.59	0.00	0.00	6,308.27

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
6:43	Chem F1					
6:56	Charge					
7:03	Decarb					
7:09	Reduce					
7:16	Sample		0.0284	11952		49984
7:23	Temp	2962				
7:24	Chem A1					
7:25	Reduce					
7:26	Sample		0.0103	11952		55513
7:28	Tap					
Tap Heat	05/21/04 7:28		**TOTALS**	**11952**	**0**	**55620**
Charge Heat	05/21/04 6:56	Transfer Wt	250,000			
Charge - Tap	**32**	**Tap Wt**	**252,881**			

ADDITIONS	Recipe1	Recipe2	Recipe3	Recipe4	Total
Al	850				**850**
Dolo		1,500			**1,500**
FeSi	1,200		150	100	**1,450**
Lime		3,000			**3,000**
Med C	1,300		150		**1,450**
Total	**3,350**	**4,500**	**300**	**100**	**8,250**

Nucor Steel - Crawfordsville AOD Log

Heat #	**141253**	**Grade**	**1005S1**	Operator	jnichols
Practice	Castrip	Slag	LCLNCarbon	Heat Created	05/21/04 07:34
Lining ID	April#2 04	Lining Minutes	1750	Heats 180	Min. Weight 200,000

AddsWiz Oxygen Estimate — TapToCharge 15.96667

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.059	0.220	0.013	0.062	0.001	0.051	0.029	0.007	0.002
A1	0.006	0.560	0.013	0.004	0.220	0.076	0.031	0.006	0.003

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
57.72	10.34	11.67	20.15	0.00	0.00	6,260.94

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
7:36	Chem F1					
7:44	Charge					
7:49	Decarb					
7:54	Reduce					
8:02	Sample		0.0234	11422		44552
8:06	Temp	3046				
8:12	Chem A1					
8:17	Reduce					
8:20	Sample		0.0076	11422		52290
8:21	Tap					
Tap Heat	05/21/04 8:21		**TOTALS**	**11422**	**0**	**52414**
Charge Heat	05/21/04 7:44	Transfer Wt	214,023			
Charge - Tap	**37**	**Tap Wt**	**216,620**			

ADDITIONS	Recipe1	Recipe2	Recipe3	Total
Al	800		25	**825**
FeSi	1,100	225		**1,325**
Med C	1,000	150		**1,150**
Total	**2,900**	**375**	**25**	**3,300**

Nucor Steel - Crawfordsville AOD Log

Heat #	**247036**	**Grade**	**1005S1**	Operator	jnichols
Practice	Castrip	Slag	LCLNCarbon	Heat Created	05/21/04 12:33
Lining ID	April#2 04	Lining Minutes	1787	Heats	182
				Min. Weight	200,000

AddsWiz Oxygen Estimate — TapToCharge 270.85

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.039	0.090	0.007	0.071		0.039	0.029	0.006	0.002
A1	0.010	0.560	0.009	0.001	0.315	0.048	0.029	0.005	0.002

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
60.80	9.43	12.81	16.84	0.00	0.00	6,936.00

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
12:43	WtBath Overide					
12:50	Chem F1					
12:52	Charge					
12:58	Decarb					
13:01	Reduce					
13:08	Sample		0.0323	12180		36670
13:14	Temp	2940				
13:20	Chem A1					
13:21	Reduce					
13:23	Sample		0.0108	12180		42551
13:23	Tap					
Tap Heat	05/21/04 13:23		**TOTALS**	**12180**	**0**	**42661**
Charge Heat	05/21/04 12:52	Transfer Wt	235,990			
Charge - Tap	**32**	**Tap Wt**	**238,444**			

ADDITIONS	Castrip	Recipe1	Recipe2	Total
Al	850	600		**1,450**
Dolo	1,500			**1,500**
FeSi	1,200			**1,200**
Lime	3,700			**3,700**
Med C	1,300		50	**1,350**
Total	**8,550**	**600**	**50**	**9,200**

Nucor Steel - Crawfordsville AOD Log

Heat #	**247038**	**Grade**	**1005S1**	Operator	jnichols
Practice	Castrip	Slag	LCLNCarbon	Heat Created	05/21/04 13:28
Lining ID	April#2 04	Lining Minutes	1818	Heats	183
				Min. Weight	200,000

AddsWiz Oxygen Estimate — TapToCharge 56.80433

Spec	C	Mn	P	S	Si	Cr	Ni	N	Ti
Min	0.010	0.250			0.150				
Max	0.040	0.450			0.200				

Sample	C	Mn	P	S	Si	Cr	Ni	N	Ti
F1	0.036	0.070	0.006	0.059		0.037	0.039	0.006	0.001
A1	0.007	0.520	0.008	0.004	0.175	0.045	0.040	0.005	0.002

PctCaO	PctMgO	PctSiO2	PctAl2O3	PctCr2O3	PctFeO	WtSlag
60.21	9.27	12.48	17.99	0.00	0.00	7,061.31

TimeActivity	Activity	Temp	%C	O2 Cnts	N2 Cnts	Ar Cnts
14:13	Chem F1					
14:20	Charge					
14:23	WtBath Overide					
14:25	Decarb					
14:29	Reduce					
14:35	Sample		0.0286	12643	673	33012
14:43	Temp	2997				
14:45	Chem A1					
14:47	Reduce					
14:49	Sample		0.0091	12643	673	39860
14:49	Tap					
Tap Heat	05/21/04 14:49		**TOTALS**	**12643**	**673**	**39983**
Charge Heat	05/21/04 14:20	Transfer Wt	220,007			
Charge - Tap	**29**	**Tap Wt**	**216,522**			

ADDITIONS	Castrip	Recipe1	Recipe2	Total
Al	750	500		**1,250**
Dolo	1,500			**1,500**
FeSi	1,000		400	**1,400**
Lime	3,700			**3,700**
Med C	1,100		200	**1,300**
Total	**8,050**	**500**	**600**	**9,150**