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

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

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

Report on

COMPLIANCE DEMONSTRATION NO. 7, 8, AND 9 BATTERY PUSHING EMISSIONS CONTROL

APRIL 1994

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Project No.: 3934-45-10

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EXECUTIVE SUMMARY

A demonstration of the pushing emissions control system for Batteries 7, 8, and 9 operated at USS Clairton Works was conducted on March 8, 9, and 10, 1994. The purpose of the test program was to determine (1) the particulate matter emissions rate in the exhaust of the baghouse, (2) the opacity of the plumes of the baghouse exhaust, (3) the opacity of the plume which resulted from the pushing of the coke into the hot car, and (4) the opacity of the plume which resulted from the travelling of the hot car to the quenching station. Emissions testing was conducted only when coke was pushed from an oven in Battery 7, 8, or 9.

The results of the testing showed an average particulate matter emissions rate of 0.52 pounds per hour, while the allowable emissions rate is 9.99 pounds per hour. No visible emissions were observed from the baghouse stacks during the three day test program. Over the three day test program, 180 pushing events (each event includes a pushing and travelling operation) were observed. A maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 81 times. A maximum plume opacity during the travelling operation greater than 10 percent was observed 82 times. Both opacities for the pushing event were greater than their specified reference values 65 times.

1.0 INTRODUCTION

As required by Paragraph V.A. (5)(f) of the amended Mon Valley Consent Decree, a demonstration of the pushing emissions control system for Batteries 7, 8, and 9 operated at USS Clairton Works was conducted on March 8, 9, and 10, 1994. A baghouse controls the emissions which result from the pushing operations from the ovens of Batteries 7, 8, and 9. The purpose of the test program was to determine (1) the particulate matter emissions rate in the exhaust of the baghouse, (2) the opacity of the plumes of the baghouse exhaust, (3) the opacity of the plume which resulted from the pushing of the coke into the hot car, and (4) the opacity of the plume which resulted from the travelling of the hot car to the quenching station. Emissions testing was conducted only when coke was pushed from an oven in Battery 7, 8, or 9.

The field work activities were completed by Chester Environmental. All test procedures were witnessed by a representative from the Allegheny County Health Department - Division of Air Quality (DAQ).

2.0 METHODOLOGIES

A test protocol was prepared by Chester Environmental and submitted to DAQ prior to the execution of the test program. A copy of the test protocol can be found in Appendix A. Specific methodologies employed in the test program are outlined below.

The baghouse exhausts through four stacks; the emissions from each of these 36 inch diameter stacks were sampled simultaneously. A total of three test runs were completed on each of the four baghouse stacks with one series of tests completed on each of the three days of testing. Testing was performed only during periods of normal plant operation.

Each traverse for each stack included 12 traverse points as calculated from EPA Method 1 (40 CFR 60 Appendix A). For each stack, sampling was conducted along a total of five traverses, or 60 traverse points, with each push sampled for the required one minute at one traverse point. Sampling was conducted on each stack through two sampling ports which are separated by 90 degrees in the same horizontal plane. Three traverses were travelled through one port, while the remaining two traverses were travelled through the other port.

In accordance with EPA Method 2, exhaust gas velocities and volumetric flow rates were measured using a calibrated S type pitot tube. Positive and negative pitot lines were leak-checked at the beginning and end of each test run. Gas velocity differential pressures along with stack gas temperatures were recorded at each sampling point.

Gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference) were measured using Fyrite apparatus as specified by EPA Method 3. Gas concentrations were used to obtain molecular weight of the process gas on a dry basis.

Percent moisture content, by volume, of the exhaust gas was measured from the weight gain of the four sample train impingers in accordance with EPA Method 4.

Particulate matter sampling was performed in accordance with EPA Method 5 and Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual (Revision Number 1, January 1983) with the exception that the DER requirement of sampling 50 cubic feet of exhaust gas was replaced with the

requirement of sampling the emissions from 60 pushes. The emissions from each push were sampled for one minute. Thus, a total of 60 minutes of sampling was completed.

Clean up of the sampling trains included separate water and acetone rinses of both the front-half and back-half components of the sample trains, as per Section 139.12 of the PA DER particulate matter test method. The water soluble and water insoluble portions of the front-half of the sampling train were determined as a total; that is, the water rinse was not filtered to determine soluble and insoluble portions. Front-half acetone and water rinses were evaporated to dryness, desiccated, and weighed to a constant weight. The water soluble and water insoluble portions of the back-half were determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. The back-half water rinses and first three impinger solutions were combined and then filtered under suction through a preweighed 0.22 micrometer membrane filter. The filter used to capture the insoluble material was dried, desiccated, and weighed to a constant weight. The filtrate was then evaporated to dryness, desiccated, and weighed to a constant weight. Back-half acetone rinses were also evaporated to dryness, desiccated, and weighed to a constant weight. Sample train filters were desiccated for 24 hours, and particulate matter weight was determined gravimetrically. Rinse residue weights and filter weights were measured to the nearest 0.1 mg. One acetone blank and one deionized distilled water blank were prepared in the same manner as the test sample rinses. The blank residue weights were subtracted from the test sample residue weights. After blank correction, front-half water and acetone rinse residue weights, sample train filter weights, and back-half water insoluble filter weights were used to determine total particulate matter catch.

All plume opacity measurements were performed in accordance with EPA Method 9 and Section F of Chapter 18 of the DAQ Source Testing Manual. During the pushing operation, the maximum plume opacity and length of time (in seconds) when the plume opacity was greater than or equal to 20 percent were recorded. During the travelling operation, the maximum plume opacity and length of time (in seconds) when the plume opacity was greater than 10 percent were recorded. Visible emissions from the baghouse stacks were recorded continuously each day of the test program.

3.0 RESULTS

The particulate matter emissions test results have been summarized in Tables 1 through 4. The total particulate matter emissions rate for each day of testing was obtained by summing the emissions rates from each stack. The three day average particulate matter emissions rate is 3.31 pounds per hour of pushing (lb/hr pushing). Since emissions do not occur continuously, the mass emission rate has to be adjusted for the number of pushes which occurred during the testing periods. Since there were, on average, 9.46 pushes of coke per hour, and each push was sampled for one minute, the actual emission rate (based on a continuous operation) is equal to the following:

$$\frac{3.31\ \text{lb}}{\text{hr pushing}} \times \frac{1\ \text{hr pushing}}{60\ \text{min pushing}} \times \frac{1\ \text{min pushing}}{1\ \text{push}} \times \frac{9.46\ \text{pushes}}{\text{hr}} = 0.52\ \text{lb/hr}$$

The allowable particulate matter emissions rate is equal to the Best Available Control Technology (BACT) standard defined as the greater of the following two values:

(1) Outlet concentration of 0.020 grains per dry standard cubic foot (gr/dscf)

(2) Outlet mass emission rate determined by the formula

$$A = 0.76 * W^{0.42}$$

where A = allowable mass emissions rate (lb/hr/battery)
W = coke pushing rate (tons/hr/battery)

For this test program, there were on average 10.7 tons of coke per oven and 9.46 ovens were pushed per hour. Substituting these values into the equation listed above yields an allowable particulate matter emissions rate for the pushing emissions control system for Batteries 7, 8, and 9 equal to (3 batteries) * (0.76 lb/hr/battery) * (10.7 tons/oven * 9.46 ovens/hr / 3 batteries)$^{0.42}$, or 9.99 lb/hr. All particulate matter concentrations determined in this test program were less than 0.020 gr/dscf. The average particulate matter emissions rate determined in the test program (0.52 lb/hr) is less than the allowable emissions rate (9.99 lb/hr).

Tables 1 through 3 also list other pertinent stack and sampling parameters including the exhaust gas flow rate in units of actual cubic feet per minute (acfm), standard cubic feet per

minute (scfm), and dry standard cubic feet per minute (dscfm), moisture content of the exhaust gas, exhaust gas temperature, gas volume sampled for each test (dscf), and the isokinetics value for each test. The isokinetics value is equal to the ratio of the average linear gas velocity sampled through the probe nozzle to the average exhaust gas velocity. An isokinetics value between 90 percent and 110 percent is considered acceptable. All sample volumes were greater than 30 dscf per test. All isokinetics values were within the acceptable range.

The plume opacity data has been summarized in Table 5. No visible emissions were observed from the baghouse stacks during the three day test program. Over the three day test program, 181 pushing events (each event includes a pushing and travelling operation) were observed. A maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 81 times. A maximum plume opacity during the travelling operation greater than 10 percent was observed 82 times. Both opacities for the pushing event were greater than their specified reference values 65 times. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 4.1 seconds. During the travelling operation, the plume opacity was greater than 10 percent for an average of 7.4 seconds.

All testing was performed during periods of normal plant operation. Copies of the field data sheets can be found in Appendix A. Copies of the plant operational data for each day of the test program for Batteries 7, 8, and 9 can be found in Appendix B.

All sampling equipment was calibrated and operated in accordance with EPA Methods 1 through 5. Copies of the pre-test calibration results, post-test calibration results, and results of an audit of the control boxes conducted with a critical orifice provided by DAQ can be found in Appendix A.

The gravimetric results and emissions calculations for each test can be found in Appendix C.

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CLAIRTON, PA

TABLE 1

BATTERIES 7, 8, AND 9
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 1
TEST DATE: MARCH 8, 1994
TEST TIMES: 0840 to 1455

Stack Number Test Number		2-1 CLR-2-1-1	2-2 CLR-2-2-1	2-4 CLR-2-4-1	2-5 CLR-2-5-1	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.73	1.71	1.30	0.70	4.44
	(gr/dscf)	0.0037	0.0080	0.0060	0.0031	
Stack Conditions						
Flow Rate	(acfm)	24800	27100	27700	28200	107800
	(scfm)	23100	25300	25800	26300	100500
	(dscfm)	22800	24900	25400	25900	99000
Temperature	(°F)	100	98	100	99	
Moisture Content	(%)	1.5	1.5	1.4	1.5	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	38.760	38.412	44.696	45.647	
Isokinetics	(%)	101.9	101.6	104.1	105.4	

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TABLE 2

BATTERIES 7, 8, AND 9
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 2
TEST DATE: MARCH 9, 1994
TEST TIMES: 0835 to 1520

Stack Number Test Number		2-1 CLR-2-1-2	2-2 CLR-2-2-2	2-4 CLR-2-4-2	2-5 CLR-2-5-2	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.45	0.87	0.79	0.51	2.62
	(gr/dscf)	0.0024	0.0040	0.0036	0.0022	
Stack Conditions						
Flow Rate	(acfm)	23200	26700	26900	28900	105700
	(scfm)	22200	25600	25600	27600	101000
	(dscfm)	21800	25200	25200	27100	99300
Temperature	(°F)	88	87	92	89	
Moisture Content	(%)	1.7	1.6	1.5	1.7	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	38.293	41.019	44.437	46.535	
Isokinetics	(%)	105.0	107.4	104.4	102.6	

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TABLE 3

BATTERIES 7, 8, AND 9
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 3
TEST DATE: MARCH 10, 1994
TEST TIMES: 0810 to 1410

Stack Number		2-1	2-2	2-4	2-5	Total
Test Number		CLR-2-1-3	CLR-2-2-3	CLR-2-4-3	CLR-2-5-3	
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.54	1.07	0.91	0.36	2.88
	(gr/dscf)	0.0028	0.0050	0.0042	0.0015	
Stack Conditions						
Flow Rate	(acfm)	24700	27000	27100	29200	108000
	(scfm)	23100	25400	25300	27400	101200
	(dscfm)	22800	25000	25000	27000	99800
Temperature	(°F)	93	90	93	90	
Moisture Content	(%)	1.4	1.4	1.3	1.4	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	37.829	38.987	45.883	46.975	
Isokinetics	(%)	99.4	102.6	108.6	104.0	

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TABLE 4

BATTERIES 7, 8, AND 9
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

SUMMARY OF DAYS 1, 2, AND 3

Day	Test Date	Particulate Matter Emissions (lb/hr pushing)
1	03-08-94	4.44
2	03-09-94	2.62
3	03-10-94	2.88
Average		3.31

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TABLE 5

7, 8, AND 9 BATTERY PUSHING EMISSIONS CONTROL
VISIBLE EMISSIONS DATA SUMMARY

Baghouse Stacks

Observation Date	Number of Observations	Greatest Opacity (%)
March 8, 1994	1504	0
March 9, 1994	1640	0
March 10, 1994	1440	0

Pushing Operation

Observation Date	Number of Observations	Number of Observations with Opacity >=20%	Average Time with Opacity >= 20% (sec)
March 8, 1994	60	25	4.2
March 9, 1994	60	24	4.4
March 10, 1994	61	32	3.6
Average			4.1

Travelling Operation

Observation Date	Number of Observations	Number of Observations with Opacity >10%	Average Time with Opacity >10% (sec)
March 8, 1994	60	21	6.6
March 9, 1994	60	24	6.9
March 10, 1994	61	37	8.7
Average			7.4

COMPLIANCE DEMONSTRATION
NO. 7, 8, AND 9 BATTERY
PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

APPENDIX A

TEST PROTOCOL, FIELD DATA SHEETS, CALIBRATION RESULTS

CHESTER
ENVIRONMENTAL

TEST PROTOCOL
COMPLIANCE DEMONSTRATION
NOS. 7, 8, 9 BATTERY PEC

USS CLAIRTON WORKS
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As required by the amended Mon Valley Consent Decree (Paragraph V.A. (5)(f)), a compliance demonstration will be conducted on the baghouse which controls the pushing emissions from Batteries 7, 8, and 9 operated at the USS Clairton Works. The purpose of this testing is to (1) determine the particulate matter emissions rates and concentrations from the exhaust stacks of the baghouse, (2) compare the measured particulate matter emissions rate with the allowable particulate matter emissions rate, (3) determine the presence of visible emissions from the baghouse stacks, and (4) measure the opacity of the plumes which result from the pushing of the coke into the hot car and during the travelling of the hot car to the quenching station. The three day test program will be performed during periods of normal plant production and operation.

Particulate matter sampling will be performed in accordance with EPA Stationary Source Sampling Methods 1 through 5, requirements set forth in Chapter 18, Section F of the Allegheny County Health Department - Bureau of Air Quality (BAQ) Source Testing Manual, and Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual (Revision Number 1, January 1983) with the exception that the PA DER requirement of 50 dry standard cubic feet sample volume of exhaust gas will be replaced with the requirement of sampling the emissions from 60 pushes. The emissions from each push will be sampled for 1 minute. Thus, a total of 60 minutes of sampling will be completed. A total of three test runs (one test run per day) will be performed for each of the 4 stacks of the baghouse with all stacks being tested simultaneously.

The baghouse exhausts through four individual stacks. All of the stacks measure 36 inches in inside diameter. Each diametral traverse for the stack will include 12 traverse points as calculated by EPA Stationary Source Sampling Method 1. Sampling will conducted along a total of 5 traverses, or 60 traverse points, with each push sampled for the required 1 minute at one traverse point. Sampling will be conducted through 2 sampling ports which are

separated by 90° in the same horizontal plane. Three traverses will be performed through one port, while the remaining 2 traverses will be performed through the other port.

In accordance with EPA Method 2, velocities and volumetric flow rates of the exhaust gas will be determined using a calibrated S type Pitot tube. Positive and negative Pitot lines will be leak-checked at the beginning and end of each test run. Gas velocity differential pressures along with stack gas temperatures will be recorded at each sampling point. Static pressure of the exhaust gas stream will be measured with the same Pitot tube.

During each test, gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference), will be determined with the use of a Bacharach "Fyrite" apparatus as specified by EPA Method 3. Gas concentrations will be used to obtain molecular weight of the exhaust gas on a dry basis.

Percent moisture content, by volume, of the exhaust gas will determined by measuring the weight gain of the four sample train impingers in accordance with EPA Method 4.

As specified by EPA Method 5, each sample train will be assembled as required by the method, leak-checked on site at the beginning and end of each test run, and operated so that isokinetic conditions are maintained. Clean up of the sampling train will include a water rinse followed by an acetone rinse of both the front-half and back-half components of the sample train, as per PA DER particulate matter test method requirements. The water soluble and water insoluble portions of the front-half of the sampling train will be determined as a total; that is, the water rinse will not be filtered to determine soluble and insoluble portions. However, the water soluble and water insoluble portions of the back-half will be determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. The back-half water rinses and first three impinger solutions will be filtered under suction through a pre-weighed 0.22 micrometer filter. The filter used to capture the insoluble material will be dried, desiccated, and weighed to a constant weight. Front-half acetone and water rinses and back-half acetone rinses will be evaporated to dryness, desiccated, and weighed to a constant weight. Sample train filters will be desiccated for 24 hours, and particulate matter weight will be determined gravimetrically. Rinse residue weights and filter weights will be measured to the nearest 0.1 mg. One acetone blank and one deionized distilled water blank will be prepared in the same manner

as the test sample rinses. The blank weights will be subtracted from the test sample weights. After blank correction, front-half residue weights, sample filter weights, and back-half water insoluble filter weights and acetone residue weights will added together to determine total particulate matter catch.

All visible emissions determinations from the baghouse exhausts stacks will be performed in accordance with EPA Stationary Source Sampling Method 9 and BAQ Method 18F. Visible emissions will be recorded for the duration of each of the sixty oven pushes. All plume opacity measurements will also be performed in accordance with EPA Method 9 and BAQ Method 18F. During the pushing operation, the maximum plume opacity and length of time (in seconds) when the plume opacity is greater than or equal to 20% will be recorded. During the travelling operation, the maximum plume opacity and length of time (in seconds) when the plume opacity is greater than 10% will be recorded.

A report summarizing the compliance test program will be submitted within 60 days following completion of field work. The report will describe test methodologies utilized and present a textual and tabular summary of the emissions results and related sampling information. Copies of operational data will be included in the report to verify that all testing was performed during periods of normal plant operation. Also incorporated into the report will be copies of the pre-test calibration results, post-test calibration results, the results of an audit conducted with a critical orifice provided by the BAQ, field data sheets for the particulate matter sampling and visible emissions determinations, computer-generated emissions calculations, and analytical results for each test.

3-8-94 789 P.E.C.

VISIBLE EMISSIONS OBSERVATIONS FORM

_____ STACK

OBSERVER: _____

DATE: _____

FACILITY: _____

OBSERVATION: START TIME: _____

END TIME: _____

OBSERVATION POINT:

_____

SOURCE:

DISTANCE: _____

DIRECTION FROM: _____

HEIGHT: _____

WIND:

SPEED: _____

DIRECTION: _____

TEMPERATURE: _____

SKY CONDITION: _____

BACKGROUND: _____

_____

READING CONDITIONS: _____

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: _____

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: ____ FOREMAN: _____

COMMENTS: _____

_____

_____

	Oven	Butt	Time	
0	A18	9	8	41
1	C1	8	8	47
2	B-1	9	8	52
3	A-1	7	8	58
4	A-3	7	9	09
5	B-5	9	9	14
6	A-5	7	9	20
7	A-22	9	9	25
8	B-7	9	9	31
9	A7	7	9	37
10	B-9	9	9	42
11	A-9	7	9	48
12	B-11	9	9	53
13	A-11	7	10	00
14	B-13	9	10	05
15	A-13	7	10	10
16	B-15	9	10	16
17	A15	7	10	22
18	B17	9	10	27
19	A-17	7	10	33
20	B-19	9	10	39
21	A-19	7	10	45
22	A-21	7	10	51
23	A-23	7	10	56
24	A-25	7	11	02
25	A-27	7	11	08
26	A-29	7	11	15
27	B-21	9	11	22
28	B-23	9	11	27
29	B-25	9	11	33

	Oven	Butt	Time	
30	B-27	9	11:	40
31	B-29	9	11	46
32	B-31	9	11	51
33	C-2	9	11	57
34	A-31	7	12	03
35	A2	8	12	14
36	A4	8	12	26
37	B4	9	12	33
38	B8	9	12	38
39	B14	9	12	45
40	B4	7	12	51
41	A6	8	12	57
42	B6	7	1	06
43	A8	8	1	15
44	B8	7	1	22
45	A10	8	1	28
46	B10	7	1	35
47	A12	8	1·	41
48	B12	7	1	47
49	A14	8	1	53
50	B14	7	2	00
51	A16	8	2	07
52	B16	7	2	13
53	A18	8	2	21
54	B18	7	2	27
55	A20	8	2	32
56	B20	7	2	38
57	A22	8	2	42
58	B22	7	2	47
59	A24	8	2	52

TAC 2-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.521	HOT/COLD BOX NO. 3, 7
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-1-1	METER CORRECTION (Y) 1.0099	PROBE NO. 5-2
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.190"	CALIBRATION DATE 2-1-94	FILTER NO. 1177
TEST CREW	STATIC PRESSURE 0.8" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. 2	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		184.688	1.3	1.40	1.40	58	59	3.0	94	~250	<68	~250	1 min./point
33.6		185.412	1.3	1.40	1.40	58	57	3.0	95				
31.7		186.245	1.4	1.51	1.51	58	55	3.5	95				
29.6		186.992	1.5	1.62	1.62	55	54	4.0	96				
27.0		187.751	1.2	1.32	1.32	54	52	3.0	97				
23.2		188.452	1.0	1.10	1.10	54	51	2.5	96				
12.8		189.095	0.8	0.88	0.88	54	50	2.0	97				
9.0		189.703	0.8	0.88	0.88	54	50	2.0	96				
6.4		190.310	0.8	0.88	0.88	53	50	2.0	97				
4.3		190.902	0.8	0.88	0.88	55	49	2.0	95				
2.4		191.501	0.9	0.99	0.99	56	50	2.5	93				
1.0		192.132	0.8	0.88	0.88	56	50	2.0	93				
		192.725											
													Estimates:
													MW=28.8
			(1.03)	Σ=13.74		Σ=1292			Σ=1144				%H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.080
After	6.0	0.005

PITOT LEAK CHECK 15sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL D.I. H_2O	532.9	528.8	4.1
2.	100mL D.I. H_2O	545.4	544.3	1.1
3.	Empty	448.3	447.7	0.6
4.	Silica Gel	644.4	637.7	6.7
5.				
6.			total=	12.5g
7.				
8.				

5.8g

CHESTER ENVIRONMENTAL

St 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45-10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues)
TEST NO. CLR-2-1-1
NOZZLE (SIZE,#) 0.190"
STATIC PRESSURE 0.8"
PORT DIRECTION West

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3,7
PROBE NO. 5-2
FILTER NO. 1177
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		192.725	0.8	0.88	0.88	58	51	2.0	93	~250	<68	~250	1 min./point
2.4		193.327	0.8	0.88	0.88	59	51	2.0	94				
4.3		193.916	0.9	0.99	0.99	61	53	2.0	95				
6.4		194.540	0.8	0.88	0.88	62	53	2.0	102				
9.0		195.143	0.8	0.88	0.88	63	55	2.0	99				
12.8		195.723	0.8	0.88	0.88	63	55	2.0	103				
23.2		196.314	1.2	1.32	1.32	64	56	3.5	99				
27.0		197.004	1.3	1.43	1.43	65	57	4.0	101				
29.6		197.712	1.4	1.54	1.54	66	57	4.0	101				
31.7		198.453	1.2	1.32	1.32	65	57	3.5	103				
33.6		199.160	1.7	1.87	1.87	68	58	5.0	102				
35.0		199.958	1.4	1.54	1.54	67	58	4.0	103				
		200.714											
			1.07	Σ=14.41		Σ=1422			Σ=1195				

Estimates:
MW=28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STA... 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.541	HOT/COLD BOX NO. 3,7
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-1-1	METER CORRECTION (Y) 1.0099	PROBE NO. 5-2
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.190"	CALIBRATION DATE 2-1-94	FILTER NO. 1177
TEST CREW	STATIC PRESSURE 0.8"	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. 2	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		200.714	1.2	1.32	1.32	68	59	3.5	102	~250	<68	~250	1 min./point
33.6		201.497	1.3	1.43	1.43	68	59	4.0	102				
31.7		202.114	1.7	1.87	1.87	69	60	5.0	103				
29.6		202.897	1.2	1.32	1.32	68	61	3.5	104				
27.0		203.582	1.1	1.20	1.20	66	61	3.0	104				
23.2		204.250	1.0	1.10	1.10	64	60	3.0	105				
12.8		204.895	0.8	0.88	0.88	63	59	2.0	101				
9.0		205.500	0.8	0.88	0.88	64	59	2.0	100				
6.4		206.118	0.8	0.88	0.88	65	59	2.0	99				
4.3		206.750	0.8	0.88	0.88	66	59	2.0	102				
2.4		207.335	0.9	0.99	0.99	66	60	2.5	98				
1.0		207.955	0.8	0.88	0.88	66	60	2.0	97				
		208.538											
													Estimates:
													MW=28.8
			(1.02)	Σ=13.63		Σ=1509			Σ=1217				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45L10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues)
TEST NO. CLR-2-1-1
NOZZLE (SIZE,#) 0.190"
STATIC PRESSURE 0.8"
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3,7
PROBE NO. 5-2
FILTER NO. 1177
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		208.538	0.8	0.88	0.88	67	61	4.0	101	~250	<68	~250	1 min./point
33.6		209.228	1.1	1.21	1.21	68	61	3.0	103				
31.7		209.897	1.2	1.32	1.32	70	62	4.0	103				
29.6		210.580	1.1	1.21	1.21	70	62	3.0	105				
27.0		211.245	1.1	1.21	1.21	70	62	3.5	105				
23.2		211.907	1.1	1.21	1.21	71	63	3.5	106				
12.8		212.581	0.6	0.66	0.66	70	64	2.0	105				
9.0		213.103	0.6	0.66	0.66	71	64	2.0	104				
6.4		213.638	0.6	0.66	0.66	71	64	2.0	103				
4.3		214.186	0.6	0.67	0.67	71	64	2.0	103				
2.4		214.710	0.6	0.67	0.67	70	64	2.0	98				
1.0		215.233	0.6	0.67	0.67	69	64	2.0	97				
		215.767											
													Estimates:
													MW= 28.8
			(0.82)	Σ= 11.03		Σ= 1593			Σ= 1233				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

5-K-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45L10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues)
TEST NO. CLR-2-1-1
NOZZLE (SIZE,#) 0.190"
STATIC PRESSURE 0.8" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3, 7
PROBE NO. 5-2
FILTER NO. 1177
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		215.767	0.6	0.67	0.67	69	64	2.0	97	~250	<68	~250	1 min./point
2.4		216.295	0.6	0.67	0.67	69	64	2.0	98				
4.3		216.827	0.8	0.89	0.89	70	64	2.5	101				
6.4		217.416	0.8	0.89	0.89	70	64	2.5	107				
9.0		218.015	0.7	0.78	0.78	70	64	2.0	102				
12.8		218.589	0.7	0.78	0.78	70	65	2.0	106				
23.2		219.160	1.0	1.11	1.11	70	65	3.0	102				
27.0		219.821	1.1	1.22	1.22	69	64	3.5	106				
29.6		220.490	1.1	1.22	1.22	70	64	3.5	105				
31.7		221.155	1.0	1.11	1.11	68	63	3.0	106				
33.6		221.800	1.1	1.22	1.22	69	63	3.5	104				
35.0		222.460	1.0	1.11	1.11	68	63	3.0	106				
		223.106											
test totals	Δ=60 min	Δ=38.418 dcf	$(\Delta P)_{AVG}$ = 1.0	(0.87)	$(\Delta H)_{AVG}$ = 1.10	Σ=13.37	$(T_{meter})_{AVG}$ = 62°F	Σ=159	—	$(T_{stack})_{AVG}$ = 100°F	Σ=1240		Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 8
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-2-1	METER CORRECTION (Y) 1.5179	PROBE NO. 5-5
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.181"	CALIBRATION DATE 1-24-94	FILTER NO. 1176
TEST CREW TD/JS/RC/TM	STATIC PRESSURE 1.0" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. 3	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		149.353	1.4	1.26	1.26	60	61	5.5	93	~250	<68	~250	1 1 min./point
33.6		150.045	1.4	1.31	1.31	58	56	6.0	95				
31.7		150.692	1.2	1.12	1.12	56	54	5.0	97				
29.6		151.314	1.2	1.12	1.12	55	53	5.0	95				
27.0		151.936	1.2	1.11	1.11	54	52	5.0	96				
23.2		152.543	1.1	1.02	1.02	54	51	5.0	96				
12.8		153.130	1.2	1.11	1.11	52	50	5.1	96				
9.0		153.752	1.2	1.11	1.11	52	50	5.1	97				
6.4		154.364	1.2	1.11	1.11	52	50	5.1	96				
4.3		154.998	1.2	1.11	1.11	52	49	5.2	96				
2.4		155.631	1.2	1.11	1.11	52	48	5.2	96				
1.0		156.255	1.2	1.11	1.11	52	48	5.2	96				
		156.867											
			1.206			54.8	51.8						
				1.13		52.9			95.7				
			1.2061										Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5	<.02
After	8	<.07

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL DI H_2O	569.7	568.3	1.4
2.	100mL DI H_2O	481.9	480.8	1.1
3.	Empty	455.3	454.9	0.4
4.	Silica Gel	674.5	668.0	6.5
5.				
6.			total =	12.4g
7.				
8.				

5.9g

Y.92

CHESTER ENVIRONMENTAL

FCW 6314 TSO 102.71

CK 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45110
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues)
TEST NO. CLR-2-2-1
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION West

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 8
PROBE NO. 5-5
FILTER NO. 1176
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		156.867	1.2	1.11	1.11	52	47	5.2	96	~250	<68	~250	11 min./point
2.4		157.471	1.2	1.11	1.11	53	46	5.2	96				
4.3		158.082	1.1	1.01	1.01	53	46	5.0	96				
6.4		158.664	1.2	1.10	1.10	54	46	5.5	97				
9.0		159.294	1.3	1.20	1.20	55	47	5.8	96				
12.8		159.909	1.2	1.10	1.10	56	48	5.5	97				
23.2		160.445	1.2	1.11	1.11	56	48	5.5	97				
27.0		161.044	1.2	1.11	1.11	57	48	5.5	97				
29.6		161.619	1.1	1.01	1.01	57	48	5.0	97				
31.7		162.223	1.0	.92	.92	57	49	4.8	98				
33.6		162.809	1.1	1.01	1.01	57	49	5.0	98				
35.0		163.422	1.4	1.29	1.29	58	50	6.0	98				
		164.137											
			1.181			55.4	47.7						
			1.1813	1.09		51.6			96.9				Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Flow 629

750 100 162

X.92

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-451-10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues.)
TEST NO. CLR-2-2-1
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION WEST

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 8
PROBE NO. 5-5
FILTER NO. 1176
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		164.137	1.3	1.20	1.20	59	50	5.8	98	~250	<68	~250	1 min./point
33.6		164.769	1.2	1.11	1.11	59	51	5.2	97				
31.7		165.358	1.2	1.11	1.11	59	51	5.3	98				
29.6		165.947	1.4	1.30	1.30	60	52	6.0	98				
27.0		166.588	1.2	1.11	1.11	60	52	5.3	99				
23.2		167.229	1.1	1.02	1.02	59	52	5.0	99				
12.8		167.813	1.2	1.11	1.11	58	51	5.3	99				
9.0		168.465	1.2	1.11	1.11	57	50	5.3	99				
6.4		169.079	1.3	1.20	1.20	58	50	5.8	99				
4.3		169.736	1.2	1.11	1.11	58	50	5.3	98				
2.8		170.360	1.1	1.02	1.02	58	50	5.0	98				
1.0		170.974	1.0	.93	.93	58	50	4.5	98				
		171.579											
			1.198			58.6	50.7						
			1.1979	1.11		54.6			98.3				
													Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Flow 63.4
750
101.86

X.93

171,574

- KK -2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (TUES)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 8
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-2-1	METER CORRECTION (Y) 1.0179	PROBE NO. 5-5
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.181"	CALIBRATION DATE 1-24-94	FILTER NO. 1176
TEST CREW	STATIC PRESSURE 1.0" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.74	PORT DIRECTION South	CONTROL BOX NO. 3	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		171,579	1.0	.93	.93	58	50	4.5	98	~250	<68	~250	1 min./point
33.6		172,156	1.1	1.02	1.02	59	51	4.8	98				
31.7		172,741	1.4	1.30	1.30	60	51	6.4	98				
29.6		173,481	1.6	1.48	1.48	60	52	6.5	99				
27.0		174,213	1.6	1.48	1.48	61	52	6.5	100				
23.2		174.871	1.4	1.30	1.30	61	52	6.0	100				
12.8		175.519	1.1	1.02	1.02	60	53	4.8	99				
9.0		176.105	1.1	1.02	1.02	61	53	4.8	99				
6.4		176.669	1.1	1.02	1.02	61	53	4.8	99				
4.3		177,210	1.2	1.11	1.11	62	54	5.0	99				
2.4		177,806	1.1	1.02	1.02	62	54	4.8	99				
1.0		178,412	1.0	.93	.93	62	54	4.5	99				
		178,979											
			1.217										
						60.6	52.4						
			1.2165	1.14		56.5			98.9				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Flow 63.9 +5.0 100.73

AC 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 8
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-2-1	METER CORRECTION (Y) 1.0179	PROBE NO. 5-5
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.181"	CALIBRATION DATE 1-24-94	FILTER NO. 1176
TEST CREW	STATIC PRESSURE 1.0" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.74	PORT DIRECTION South	CONTROL BOX NO. 3	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		178.979	1.0	.93	.93	60	54	4.5	99	~250	<68	~250	1 min./point
2.4		179.542	1.2	1.11	1.11	60	55	5.3	99				
4.3		180.106	1.2	1.11	1.11	59	54	5.3	99				
6.4		180.727	1.2	1.11	1.11	60	54	5.3	100				
9.0		181.334	1.1	1.02	1.02	61	54	5.0	99				
12.8		181.912	1.1	1.02	1.02	61	54	5.0	100				
23.2		182.482	1.3	1.20	1.20	61	54	5.5	100				
27.0		183.137	1.6	1.48	1.48	60	53	6.5	100				
29.6		183.836	1.6	1.48	1.48	59	54	6.5	100				
31.7		184.584	1.4	1.30	1.30	59	53	6.0	100				
33.6		185.233	1.3	1.20	1.20	59	53	6.0	101				
35.0		185.900	1.4	1.30	1.30	59	53	6.0	100				
		186.545											
			1.277		1.188								
						59.8	53.7						
Test Totals	Δ=60 min	Δ=37.192 dcf	$(\Delta p)_{AVG}$ =	$(\Delta H)_{AVG}$ = 1.13		56.8			99.7				Estimates: MW= 28.8
			1.2			$(T_{meter})_{AVG}$ = 54°F			$(T_{stack})_{AVG}$ =		98°F		%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK -4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.643	HOT/COLD BOX NO. 6
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-4-1	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO. 3934-245-10	NOZZLE (SIZE,#) 0.191"	CALIBRATION DATE 02-3-94	FILTER NO. 1163
TEST CREW RPC, TD, TM, JPS	STATIC PRESSURE +1.2	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. FOUR	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		174.330	1.20	1.51	1.51	65	64	4.5	103	~250	<68	~250	1 min./point
33.6		175.068	1.80	2.26	2.26	63	62	4.5	104				
31.7		175.870	1.50	1.88	1.88	64	63	4.5	100				
29.6		176.680	1.50	1.88	1.88	63	62	4.5	110				
27.0		177.445	1.50	1.88	1.88	63	62	4.5	108				
23.2		178.215	1.50	1.88	1.88	63	63	4.5	102				
12.8		179.171	1.10	1.38	1.38	63	62	4.0	107				
9.0		179.735	1.00	1.26	1.26	63	62	4.0	107				
6.4		180.411	1.00	1.26	1.26	64	63	4.0	100				
4.3		181.058	1.10	1.38	1.38	64	63	4.0	100				
2.4		181.746	0.90	1.13	1.13	65	63	4.0	98				
1.0		182.411	0.90	1.13	1.13	64	63	4.0	98				
		183.070											
			1.03	1.57			63.17		103.25				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02 CFM
After	6.0	<0.02 cfm

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL D.I. H_2O	474.8	473.9	0.9
2.	100 mL D.I. H_2O	540.9	537.8	3.1
3.	Empty	467.6	466.3	1.3
4.	Silica Gel	653.3	644.8	8.5
5.				
6.			total	= 17.8 g
7.				
8.				

5.3 g

CHESTER ENVIRONMENTAL

CHC 2-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (TCS)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 6
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-4-1	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.191"	CALIBRATION DATE 02-03-94	FILTER NO. 1163
TEST CREW RPC TD, TM, JPS	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. FOUR	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		183.070	1.00	1.26	1.26	64	63	4.0	100	~250	<68	~250	1 min./point
2.4		183.715	1.00	1.26	1.26	64	64	4.0	99				
4.3		184.400	1.00	1.26	1.26	64	63	4.0	106				
6.4		185.106	1.00	1.26	1.26	66	64	4.0	108				
9.0		185.790	1.10	1.38	1.38	65	64	4.0	104				
12.8		186.500	1.10	1.38	1.38	65	64	4.0	112				
23.2		187.245	1.10	1.38	1.38	66	64	4.0	109				
27.0		187.965	1.30	1.63	1.63	66	64	4.0	106				
29.6		188.728	1.60	2.01	2.01	64	63	5.0	104				
31.7		189.580	1.60	2.01	2.01	65	65	5.0	105				
33.6		190.465	1.60	2.01	2.01	65	63	5.0	107				
35.0		191.334	1.50	1.88	1.88	66	64	5.0	107				
		192.184											
			1.23	1.56			64.38		105.58				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

TA 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 6
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-4-1	METER CORRECTION (Y) 1.0059	PROBE NO. 5-1
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.191"	CALIBRATION DATE 020394	FILTER NO. 1163
TEST CREW RPC, TD, TM, JPS	STATIC PRESSURE +1.20	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 28.47	PORT DIRECTION WEST	CONTROL BOX NO. FOUR	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		192.184	1.80	2.26	2.26	65	63	5.0	105	~250	<68	~250	1 min./point
33.6		193.033	1.80	2.26	2.26	66	65	5.0	104				
31.7		193.912	1.50	1.88	1.88	66	64	5.0	106				
29.6		194.756	1.30	1.63	1.63	66	64	5.0	107				
27.0		195.542	1.40	1.76	1.76	66	65	5.0	100				
23.2		196.330	1.20	1.51	1.51	66	65	4.5	100				
12.8		197.070	1.00	1.26	1.26	67	65	4.5	100				
9.0		197.775	1.00	1.26	1.26	66	64	4.5	106				
6.4		198.438	1.00	1.26	1.26	66	65	4.5	103				
4.3		199.050	1.00	1.26	1.26	66	65	4.5	96				
2.4		199.735	.90	1.13	1.13	67	66	4.5	91				
1.0		200.375	.90	1.13	1.13	67	66	4.0	93				
		201.010											
			1.21	1.55			65.46		100.92				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 4
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-4-1	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.191"	CALIBRATION DATE 02-03-94	FILTER NO. 1163
TEST CREW RPC, TD, TM, JB	STATIC PRESSURE +1.20	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION SOUTH	CONTROL BOX NO. FOUR	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		201.010	1.10	1.38	1.38	65	66	4.0	89	~250	<68	~250	1 min./point
33.6		201.666	1.20	1.51	1.51	66	66	4.5	89				
31.7		202.420	1.20	1.51	1.51	66	65	4.5	88				
29.6		203.181	1.40	1.76	1.76	66	65	5.0	94				
27.0		203.985	1.30	1.63	1.63	67	66	5.0	91				
23.2		204.780	1.30	1.63	1.63	67	66	5.0	96				
12.8		205.558	1.10	1.38	1.38	67	66	4.5	99				
9.0		206.285	1.30	1.63	1.63	66	65	4.5	89				
6.4		207.020	1.20	1.51	1.51	66	65	4.5	96				
4.3		207.747	1.40	1.76	1.76	65	64	4.5	99				
2.4		208.542	1.10	1.38	1.38	65	64	4.5	105				
1.0		209.235	1.20	1.51	1.51	64	63	4.5	108				
		210.000											
													Estimates:
													MW= 28.8
			1.23	1.55		65.45			98.25				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

5-K-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (TUE)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 6
TEST UNIT 7,8,9 Battery PCC	TEST NO. CLR-2-4-1	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) ~~.184~~ 0.191"	CALIBRATION DATE 02-03-94	FILTER NO. 1163
TEST CREW RFC, JD, JM, JS	STATIC PRESSURE +1.2	PITOT CORRECTION 0.84	STACK DIA. 26"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION SOUTH	CONTROL BOX NO. FOUR	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		210.000	1.50	1.88	1.88	63	62	5.0	105	~250	<68	~250	1 min./point
2.4		210.828	1.50	1.88	1.88	63	61	5.0	106				
4.3		211.664	1.40	1.76	1.76	62	61	5.0	103				
6.4		212.465	1.20	1.57	1.57	62	61	5.0	102				
9.0		213.200	1.50	1.88	1.88	63	62	5.0	98				
12.8		213.969	1.40	1.76	1.76	63	62	4.5	102				
23.2		214.745	1.20	1.51	1.51	62	61	4.5	94				
27.0		215.485	1.10	1.38	1.38	64	60	4.0	93				
29.6		216.173	1.40	1.76	1.76	63	62	4.0	92				
31.7		216.900	1.10	1.38	1.38	63	62	4.0	92				
33.6		217.600	1.10	1.38	1.38	60	58	4.0	91				
35.0		218.320	1.00	1.26	1.26	60	58	4.0	89				
		218.948	1.277	1.612			61.6		97.3				
Test Totals	Δ=60 min	Δ=44.618 dcf	$(\Delta P)_{AVG}$=	$(\Delta H)_{AVG}$=		$(T_{meter})_{AVG}$=64°F			$(T_{stack})_{AVG}$= 100°F				
			1.25		1.57								Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STK-V 2 —

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (TUES)	ORIFICE CORRECTION (ΔH@) 1.870	HOT/COLD BOX NO. 7/5
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-5-1	METER CORRECTION (Y) 1.0032	PROBE NO. 5-4
PROJECT NO. 3934-45-60	NOZZLE (SIZE, #) ~~.217~~ .191	CALIBRATION DATE 2-3-94	FILTER NO. 1164
TEST CREW	STATIC PRESSURE 10	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION West	CONTROL BOX NO. 5	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		817.654	1.0	2.31	2.31	66	62	2.0	100	~280	68	~250	1 min./point
33.6		818.221	1.4	3.20	3.20	66	62	2.5	98				
31.7		819.346	2.0	4.58	4.58	65	62	4.5	97				
29.6		820.402	1.4	3.20	3.20	65	62	4.5	97				
27.0		821.425	1.2	1.61	1.61	65	62	2.0	98				← (Changed) Nozzles to .191 at 27.0"
23.2		822.178	1.4	1.88	1.88	65	62	2.5	97				
12.8		823.944	1.2	1.61	1.61	65	61	2.5	97				
9.0		824.685	1.0	1.34	1.34	65	62	2.0	96				Rate too High
6.4		824.360	1.0	1.34	1.34	65	62	2.0	97				
4.3		825.039	1.1	1.48	1.48	65	62	2.0	97				
2.4		825.701	1.0	1.34	1.34	65	61	2.0	95				
1.0		826.374	1.0	1.34	1.34	65	61	2.0	95				
		827.033											
			(1.21)	(2.10)			(63.46)		(97)				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	7.0	< .02
After	6.0	0.004

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	ok	ok
After	ok	ok

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL DI H2O	539.4	537.0	2.4
2.	100mL DI H2O	559.8	556.4	3.4
3.	Empty	428.9	428.3	0.6
4.	Silica Gel	659.9	651.8	8.1
5.				
6.			total =	14.5g
7.				
8.				

6.4g

CHESTER ENVIRONMENTAL

STACK 2-5

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7, 8, 9 Battery PCC
PROJECT NO. 3934-45-10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (Tues)
TEST NO. CW2-2-5-1
NOZZLE (SIZE,#) 6 - 0.190 #
STATIC PRESSURE + 0.6
PORT DIRECTION West

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0092
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 7/5
PROBE NO. 5-4
FILTER NO. 1164
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		827.033	1.0	1.34	1.34	64	60	2.0	95	~250	<68	~250	1 min./point
2.4		827.710	1.0	1.34	1.34	65	61	2.0	94				
4.3		828.372	1.0	1.34	1.34	65	61	2.0	95				
6.4		829.047	1.0	1.34	1.34	65	62	2.0	98				
9.0		829.704	1.0	1.34	1.34	65	62	2.0	100				
12.8		830.384	1.2	1.61	1.61	64	60	2.5	102				
23.2		831.072	1.3	1.75	1.75	64	60	3.0	100				
27.0		831.805	1.4	1.88	1.88	64	60	3.0	99				
29.6		832.577	1.5	2.02	2.02	65	61	3.5	101				
31.7		833.357	1.7	2.29	2.29	66	62	3.5	100				
33.6		834.265	1.6	2.15	2.15	66	62	3.5	99				
35.0		835.107	1.4	1.88	1.88	65	61	3.0	101				
		835.892											
			1.25	1.69			62.92		98.67				Estimates: MW=28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-5

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 3-8-94 (Tues)	ORIFICE CORRECTION (ΔH@) 1.876	HOT/COLD BOX NO. 7/5
TEST UNIT 7,8,9 Battery PEC	TEST NO. CLR-2-5-1	METER CORRECTION (Y) 1.6032	PROBE NO. 5-4
PROJECT NO. 3934-2510	NOZZLE (SIZE,#) G 0.170	CALIBRATION DATE 2-3-94	FILTER NO. 1164
TEST CREW	STATIC PRESSURE +0.6	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.47	PORT DIRECTION WEST	CONTROL BOX NO. 5	PORT SIZE 4"

	Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.6	~~1.6~~		835.872	1.4	1.88	1.88	64	60	3.0	99	~250	<68	~250	1 min./point
33.6	~~2.4~~		836.682	2.0	2.69	2.69	64	60	4.0	98				
31.7	~~4.3~~		837.585	1.8	2.42	2.42	65	61	4.0	101				
30.0	~~1.4~~		838.455	1.4	1.88	1.88	66	62	3.0	103				
27.0	~~5.0~~		839.245	1.4	1.88	1.88	65	61	3.0	104				
23.2	~~12.8~~		840.002	1.4	1.88	1.88	65	62	3.0	102				
12.8	~~23.2~~		840.782	1.4	1.88	1.88	65	61	3.0	102				
9.0	~~27.0~~		841.567	1.2	1.61	1.61	65	61	2.5	99				
6.4	~~29.6~~		842.360	1.2	1.61	1.61	65	61	2.5	98				
4.3	~~31.7~~		843.025	1.3	1.75	1.75	64	60	2.5	97				
2.4	~~33.6~~		843.776	1.0	1.34	1.34	64	60	2.0	95				
1.0	~~35.0~~		844.471	1.0	1.34	1.34	63	59	2.0	94				
			845.125											
				1.36	1.85			60.88		99.33				Estimates:
														MW= 28.8
														%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STAC" 2.5

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45-10
TEST CREW
BAROMETRIC PRESSURE 29.77

TEST DATE 3-8-94 (TUES)
TEST NO. CLR-2-5-1
NOZZLE (SIZE,#) G-0.190"
STATIC PRESSURE -0.6
PORT DIRECTION Sout

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 7/5
PROBE NO. 5-4
FILTER NO. 1164
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		845.125	1.4	1.88	1.88	64	61	2.5	99	~250	<68	~250	1 min./point
33.6		845.890	1.3	1.75	1.75	65	61	3.0	100				
31.7		846.632	1.4	1.88	1.88	65	60	3.0	103				
29.6		847.387	1.4	1.88	1.88	65	61	3.0	103				
27.0		848.154	1.5	2.02	2.02	65	61	3.0	102				
23.2		848.950	1.4	1.88	1.88	65	62	3.0	103				
12.8		849.735	1.2	1.61	1.61	65	61	2.5	102				
9.0		850.440	1.4	1.88	1.88	65	61	2.5	102				
6.4		851.179	1.4	1.88	1.88	64	60	2.5	99				
4.3		851.939	1.5	2.02	2.02	64	60	3.0	98				
2.4		852.761	1.2	1.61	1.61	64	60	3.0	85				
1.0		853.603	1.2	1.61	1.61	65	60	2.5	86				
		854.330											
													Estimates:
													MW=28.8
			1.36	1.83			62.67		98.5				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-5

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45-10
TEST CREW
BAROMETRIC PRESSURE 29.47

TEST DATE 3-8-94 (TUES)
TEST NO. CLR-2-5-1
NOZZLE (SIZE,#) G-0.196
STATIC PRESSURE -0.6
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.876
METER CORRECTION (Y) 1.0037
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 7/5
PROBE NO. 54
FILTER NO. 1164
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		854.330	1.2	1.61	1.61	63	58	2.5	85	~250	<68	~250	1 min./point
2.4		855.044	1.3	1.75	1.75	63	59	2.5	87				
4.3		855.794	1.4	1.88	1.88	64	60	2.5	100				
6.4		856.555	1.4	1.88	1.88	64	60	3.0	102				
9.0		857.325	1.4	1.88	1.88	64	60	3.0	101				
12.8		858.101	1.2	1.61	1.61	65	61	3.0	103				
23.2		858.850	1.2	1.61	1.61	65	61	2.5	102				
27.0		859.557	1.3	1.75	1.75	66	61	2.5	103				
29.6		860.300	1.2	1.61	1.61	65	61	2.5	102				
31.7		861.010	1.6	2.15	2.15	65	62	3.5	103				
33.6		861.790	1.3	1.75	1.75	65	61	3.0	102				
35.0		862.593	1.2	1.61	1.61	64	60	2.5	101				
		863.270	1.31	1.76		62.4			99.3				
Test Totals	Δ=60 min	Δ=45.63 dcf	$(\Delta P)_{AVG}$ = 1.3	$(\Delta H)_{AVG}$ =	1.85	$(T_{meter})_{AVG}$ = 64°F			$(T_{stack})_{AVG}$ = 99°F				Estimates: MW=28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

3-9-94

VISIBLE EMISSIONS OBSERVATIONS FORM

789 P.E.C

OBSERVER:

DATE:

FACILITY:

OBSERVATION: START TIME:

END TIME:

OBSERVATION POINT:

SOURCE:

DISTANCE:

DIRECTION FROM:

HEIGHT:

WIND:

SPEED:

DIRECTION:

TEMPERATURE:

SKY CONDITION:

BACKGROUND:

READING CONDITIONS:

COLOR OF EMISSION:

TOTAL No. OF READINGS:

No. READINGS >= 20%

No. READINGS >= 60%

GREATEST OPACITY:

CREW: FOREMAN:

COMMENTS:

	BATT	OVEN	TIME	
0	8	A18	8	37
1	7	B18	8	43
2	8	A20	8	50
3	8	A22	9	40
4	7	B22	9	47
5	8	A24	9	52
6	7	B24	9	58
7	8	A26	10	03
8	7	B26	10	09
9	8	A28	10	13
10	7	B28	10	19
11	8	A30	10	24
12	7	B30	10	30
13	9	A1	10	42
14	8	B1	10	48
15	9	A3	10	53
16	8	B3	10	59
17	8	B5	11	04
18	9	A7	11	11
19	8	B7	11	17
20	9	A9	11	22
21	8	B9	11	28
22	9	A11	11	34
23	8	B11	11	40
24	9	A13	11	46
25	8	B13	11	51
26	9	A15	11	57
27	8	B17	12	02
28	9	A17	12	08
29	8	B17	12	13

	BATT	OVEN	TIME	
30	9	A19	12	18
31	8	B19	12	24
32	9	A21	12	29
33	8	B21	12	34
34	9	A23	12	41
35	8	B23	12	47
36	8	B25	12	58
37	9	A27	1	03
38	8	B27	1	09
39	9	A14	1	15
40	9	A29	1	22
41	8	B29	1	29
42	9	A31	1	34
43	8	B31	1	40
44	9	A18	1	45
45	8	C2	1	51
46	9	B2	1	57
47	7	A2	2	02
48	9	A22	2	07
49	9	B4	2	13
50	7	A4	2	19
51	9	B6	2	24
52	7	A6	2	30
53	9	B8	2	35
54	7	A8	2	41
55	9	B10	2	46
56	7	A10	2	58
57	9	B12	3	04
58	7	A12	3	10
59	9	B14	3	15

STACK 2-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 7,8,9 Battery PEC
PROJECT NO. 3934-45-10
TEST CREW
BAROMETRIC PRESSURE 29.68

TEST DATE 3-9-94 (Wed.)
TEST NO. CLR-2-1-2
NOZZLE (SIZE,#) 0.190"
STATIC PRESSURE 0.6" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 8
PROBE NO. 5-2
FILTER NO. 1180
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		223.276	1.0	1.10	1.10	55	52	4.0	90	~250	<68	~250	1 min./point
33.6		223.895	1.0	1.10	1.10	56	51	4.0	92				
31.7		224.523	1.1	1.21	1.21	56	51	4.5	93				
29.6		225.166	1.1	1.21	1.21	59	49	4.5	92				
27.0		225.947	1.0	1.10	1.10	54	49	4.0	86				
23.2		226.473	1.0	1.10	1.10	54	49	4.0	85				
12.8		227.115	0.7	0.77	0.77	54	48	3.0	85				
9.0		227.660	0.6	0.66	0.66	54	48	2.5	86				
6.4		228.175	0.8	0.88	0.88	54	49	2.5	86				
4.3		228.758	0.7	0.77	0.77	54	48	3.0	80				
2.4		229.305	0.6	0.66	0.66	54	48	2.0	81				
1.0		229.836	0.6	0.66	0.66	55	48	2.0	80				
		230.352											
													Estimates:
													MW= 28.8
			0.84	Σ=11.22		Σ=1249			Σ=1015				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	0.005
After	8.5	0.010

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL D.I. H_2O	571.5	567.2	4.3
2.	100mL D.I. H_2O	485.4	485.4	0.0
3.	Empty	455.5	455.7	-0.2
4.	Silica Gel	684.1	674.4	9.7
5.				
6.				
7.			total =	13.8g
8.				

4.1g

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (THURS)	ORIFICE CORRECTION (ΔH@)	1.693
TEST UNIT	7,8,9 BATTERY REC.	TEST NO.	CLR-2-4-3	METER CORRECTION (Y)	1.0057
PROJECT NO.	3834-45-10	NOZZLE (SIZE,#)	0.191	CALIBRATION DATE	02-03-94
TEST CREW	RPC TM JPS TD	STATIC PRESSURE	+ 1.0	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	27.22	PORT DIRECTION	WEST	CONTROL BOX NO.	FOUR

HOT/COLD BOX NO.	6		
PROBE NO.	5-1		
FILTER NO.	1186		
STACK DIA.	26.0		
PORT SIZE	4.0"		

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		272.410	.90	1.11	1.11	50	49	4.0	91	~250°F	<68° Fed Down	~250°F	1 min./point
2.4		273.058	.90	1.11	1.11	50	49	4.0	92				
4.3		273.684	1.00	1.23	1.23	52	51	4.0	91				
6.4		274.341	1.00	1.23	1.23	52	51	4.0	99				
9.0		275.000	1.20	1.48	1.48	53	52	4.0	98				
12.8		275.702	1.20	1.48	1.48	52	50	4.0	95				
23.2		276.415	1.20	1.48	1.48	51	50	4.0	91				
27.0		277.077	1.20	1.48	1.48	51	50	4.0	94				
29.6		277.800	1.50	1.85	1.85	50	49	4.5	95				
31.7		278.568	1.50	1.85	1.85	50	49	4.5	91				
33.6		279.365	1.70	2.10	2.10	52	51	5.5	93				
35.0		280.250	1.60	1.97	1.97	52	51	5.5	95				
		281.125											
													Estimates:
													MW= 28.8
			1.23	1.53			50.71		93.75				%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (THURS)	ORIFICE CORRECTION (ΔH@)	1.693
TEST UNIT	7,8,9 BATTERY PGC	TEST NO.	CLR-2-4-3	METER CORRECTION (Y)	1.0054
PROJECT NO.	3934-45-10	NOZZLE (SIZE,#)	0.191	CALIBRATION DATE	02-03-94
TEST CREW	RPC, TM, TO, JPS	STATIC PRESSURE	F 1.0	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.22	PORT DIRECTION	W65T	CONTROL BOX NO.	POWR

HOT/COLD BOX NO.	6	PROBE NO.	5-1
FILTER NO.	1186	STACK DIA.	36.0
PORT SIZE	4.0		

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		281.125	1.80	2.22	2.22	53	52	5.5	97	~250°F	<68° Ice Now	~250°F	10 min./point
33.6		282.065	1.50	1.85	1.85	52	51	4.5	89				
31.7		282.848	1.50	1.85	1.85	52	51	4.5	94				
28.6		283.600	1.40	1.73	1.73	52	51	4.5	86				
27.0		284.350	1.60	1.97	1.97	53	52	5.0	92				
23.2		285.145	1.30	1.60	1.60	53	52	4.5	96				
12.8		285.958	1.00	1.23	1.23	53	53	4.5	105				
9.0		286.668	1.00	1.23	1.23	54	53	4.5	106				
6.4		287.300	1.10	1.36	1.36	54	52	4.5	101				
4.3		288.000	1.00	1.23	1.23	53	52	4.5	99				
2.4		288.700	0.90	1.11	1.11	54	51	4.5	96				
1.0		289.350	0.90	1.11	1.11	53	51	4.5	97				
		290.005											
			1.23	1.54			52.38		96.5				Estimates: MW= 28.8 %H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (Thurs)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 6
TEST UNIT	789 BATTERY PGC	TEST NO.	CLR-2-4-3	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO.	393445-10	NOZZLE (SIZE,#)	0.191	CALIBRATION DATE 02-03-94	FILTER NO. 1186
TEST CREW	RPG TM TD, JPS	STATIC PRESSURE	+1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0
BAROMETRIC PRESSURE	29.22	PORT DIRECTION	SOUTH	CONTROL BOX NO. FOUR	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		290.005	1.10	1.36	1.36	54	52	4.0	92	~250°F	68°F	225°F	1.0 min./point
33.6		290.645	1.10	1.36	1.36	54	52	4.0	89				
31.7		291.390	1.30	1.60	1.60	54	52	4.0	85				
28.6		292.160	1.60	1.97	1.97	54	52	4.0	81				
27.0		292.922	1.40	1.73	1.73	53	53	4.0	90				
23.2		293.680	1.40	1.73	1.73	54	53	4.0	84				
12.8		294.470	1.30	1.60	1.60	54	53	4.0	91				
9.0		295.228	1.50	1.85	1.85	52	51	5.0	100				
6.1		296.010	1.60	1.97	1.97	52	50	5.0	89				
4.3		296.825	1.60	1.97	1.97	52	51	5.0	85				
2.4		297.615	1.50	1.85	1.85	53	52	5.0	81				
1.0		298.425	1.60	1.97	1.97	55	52	5.0	82				
		719.273											
													Estimates:
													MW= 28.8
			1.41	1.7				5.26	87.42				%H2O=

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STA 2K 2-11

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 03-10-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 6
TEST UNIT 7,8,9 BATTERY POC	TEST NO. CLR-2-4-3	METER CORRECTION (Y) 1.0054	PROBE NO. 5-1
PROJECT NO. 3934-45-10	NOZZLE (SIZE,#) 0.191	CALIBRATION DATE 02/03/94	FILTER NO. 1186
TEST CREW RPC-TM-JD-JPS	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.22	PORT DIRECTION SOUTH	CONTROL BOX NO. FOUR	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		299.273	1.50	1.85	1.85	53	52	5.0	81	~250°F	~68°F	~250°F	1 min./point
2.4		300.075	1.60	1.97	1.97	55	54	5.0	81				
4.3		300.905	1.50	1.85	1.85	55	54	5.0	84				
6.4		301.795	1.50	1.85	1.85	53	53	5.0	82				
9.0		302.460	1.40	1.73	1.73	54	53	4.5	89				
12.8		303.164	1.40	1.73	1.73	55	54	4.5	97				
23.2		303.925	1.40	1.73	1.73	55	54	4.5	101				
27.0		304.740	1.50	1.85	1.85	55	54	5.0	98				
29.6		305.590	1.40	1.73	1.73	55	54	4.5	91				
31.7		306.430	1.30	1.48	1.48	54	53	4.0	91				
33.6		307.182	1.20	1.48	1.48	54	53	4.0	94				
35.0		307.351	1.20	1.48	1.48	54	54	4.0	89				
		303.550											
Test Totals	Δ=60 min	Δ=45.050 dcf	$(\Delta P)_{AVG}$ = 1.2	$(\Delta H)_{AVG}$ = 1.64		$(T_{meter})_{AVG}$ = 52°F			$(T_{stack})_{AVG}$ = 93°F				Estimates: MW= 28.8 %H2O= 1.0
			(1.40) 1.45	(1.73)		(53.92)			(89.8)				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

DIRECT 2-5

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS
TEST UNIT 7,8,9 BATTERY PGC
PROJECT NO. 3934-45-10
TEST CREW RPC, TM, TD, JPS
BAROMETRIC PRESSURE 29.22

TEST DATE 03-10-94 (THURS)
TEST NO. CLR-2-5-3
NOZZLE (SIZE,#) 0.190"
STATIC PRESSURE + 0.60
PORT DIRECTION WEST

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FIVE

HOT/COLD BOX NO. 7/5
PROBE NO. 5-3
FILTER NO. 1165
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		910.010	1.6	2.17	2.17	58	56	2.0	83	~250°F	~68°F ice bath	~250°F	1.0 min./point
33.6		910.777	1.8	2.44	2.44	56	55	2.5	86				
31.7		911.665	2.0	2.71	2.71	56	54	2.5	86				
29.6		912.582	1.8	2.44	2.44	56	54	2.5	88				
27.0		913.470	1.6	2.17	2.17	55	54	2.5	88				
23.2		914.321	1.4	1.90	1.90	55	53	2.5	90				
12.8		915.076	1.2	1.63	1.63	56	53	2.5	90				
9.0		915.815	1.2	1.61	1.61	55	54	2.0	90				
6.4		916.541	1.2	1.61	1.61	56	54	2.0	90				
4.3		917.265	1.2	1.61	1.61	55	53	2.0	89				
2.4		917.981	1.0	1.34	1.34	55	53	2.0	87				
1.0		918.666	1.0	1.34	1.34	54	51	2.0	87				
		919.330											
			1.40	1.91			54.6		87.8				Estimates: MW= 28.8 %H2O= 10

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	0.006
After	6.0	0.009

PITOT LEAK CHECK 15 SEC

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml DI H2O	534.6	534.5	0.1
2.	100 ml DI H2O	558.7	557.4	1.3
3.	EMPTY	428.9	429.7	-0.8
4.	SILICA gel	675.4	662.4	13.0
5.				
6.				
7.				
8.				

0.6g

total = 13.6g

CHESTER ENVIRONMENTAL

STACK 2-3

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS
TEST UNIT 78.9 BATTERY PSC
PROJECT NO. 3934-45-10
TEST CREW RPC-TM, TA, JB
BAROMETRIC PRESSURE 29.22

TEST DATE 03-10-94 (THURS)
TEST NO. CLR-2-5-3
NOZZLE (SIZE,#) 0.190
STATIC PRESSURE + 0.60
PORT DIRECTION WEST

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 02/03/94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 7/5
PROBE NO. 5-3
FILTER NO. 1165
STACK DIA. 36.0"
PORT SIZE 4.0'

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		919.330	1.0	1.34	1.34	56	53	2.0	86	~250°F	<68°F	~250°F	10 min./point
2.4		919.988	1.1	1.48	1.48	56	52	2.0	87				
4.3		920.658	1.2	1.61	1.61	56	53	2.0	88				
6.4		921.351	1.2	1.61	1.61	55	53	2.0	92				
9.0		922.065	1.2	1.61	1.61	56	53	2.0	92				
12.8		922.790	1.3	1.75	1.75	57	53	2.5	91				
23.2		923.518	1.5	2.01	2.01	57	54	2.5	92				
27.0		924.331	1.6	2.15	2.15	58	54	2.5	91				
29.6		925.169	1.6	2.15	2.15	58	53	2.5	90				
31.7		925.998	1.8	2.42	2.42	57	54	3.0	90				
33.6		926.861	1.8	2.42	2.42	56	53	3.0	90				
35.0		927.732	1.6	2.15	2.15	56	54	2.5	91				
		928.553											
			1.40	1.75			54.88		90				Estimates:
													MW= 28.8
													%H2O= 10

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-4

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.870	HOT/COLD BOX NO. 7/5
TEST UNIT	78A BATTERY PGC	TEST NO.	CLR-2-5-3	METER CORRECTION (Y) 1.0032	PROBE NO. 5-3
PROJECT NO.	3934, 45, 10	NOZZLE (SIZE,#)	0.170	CALIBRATION DATE 02-03-94	FILTER NO. 1165
TEST CREW	RPC, TM, TD, JPS	STATIC PRESSURE	+ 0.60	PITOT CORRECTION 0.84	STACK DIA. 360"
BAROMETRIC PRESSURE	29.22	PORT DIRECTION	WEST	CONTROL BOX NO. FIVE	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		928.553	1.4	1.88	1.88	55	52	2.5	91	~250°F	<68°F	~250°F	1.0 min./point
33.6		929.440	1.8	2.42	2.42	56	52	3.0	91				
31.4		929.186	1.5	2.01	2.01	57	52	2.5	92				
29.6		930.997	1.4	1.88	1.88	58	52	2.5	93				
27.0		931.750	1.5	2.01	2.01	59	53	2.5	94				
23.2		932.547	1.6	2.15	2.15	58	53	2.5	92				
18.8		933.380	1.2	1.61	1.61	57	54	2.5	91				
9.0		934.134	1.2	1.61	1.61	58	55	2.0	91				
6.4		934.851	1.2	1.61	1.61	57	54	2.5	90				
4.3		935.580	1.4	1.88	1.88	56	53	2.5	88				
2.4		936.347	1.2	1.61	1.61	55	52	2.0	87				
1.0		937.071	1.1	1.48	1.48	56	53	2.0	86				
		937.730											
													Estimates:
													MW=28.8
			1.37	1.35			54.33		90.5				%H2O=1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-2

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (Cycles)	ORIFICE CORRECTION (ΔH@)	1.870
TEST UNIT	7&8 BATTERY REC	TEST NO.	CLR-2-5-3	METER CORRECTION (Y)	1.00332
PROJECT NO.	3934 45-10	NOZZLE (SIZE,#)	0.190	CALIBRATION DATE	02-03-94
TEST CREW	RFC, JTM, TD, JB	STATIC PRESSURE	+ 0.60	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.22	PORT DIRECTION	SOUTH	CONTROL BOX NO.	FIVE

HOT/COLD BOX NO.	7/5	
PROBE NO.	5-3	
FILTER NO.	1165	
STACK DIA.	360"	
PORT SIZE	40"	

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		937.730	1.5	2.01	2.01	56	51	2.5	91	~250°F	<68°F	~250°F	1.0 min./point
33.6		938.452	1.4	1.88	1.88	57	52	2.5	92				
31.7		939.251	1.3	1.75	1.75	56	52	2.5	93				
29.6		939.999	1.4	1.88	1.88	58	53	2.5	94				
27.0		940.767	1.6	2.15	2.15	57	54	2.5	93				
23.2		941.582	1.4	1.88	1.88	58	53	2.5	93				
12.8		942.350	1.4	1.88	1.88	57	53	2.5	92				
7.0		943.110	1.5	2.01	2.01	56	54	2.5	91				
6.4		943.928	1.5	2.01	2.01	56	53	2.5	91				
4.3		944.754	1.5	2.01	2.01	57	53	2.5	90				
2.4		945.588	1.5	2.01	2.01	56	54	2.5	87				
1.0		946.430	1.5	2.01	2.01	56	53	2.5	84				
		947.258											
			1.44	1.96			54.79		90.2				Estimates:
													MW= 28.8
													%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 2-3

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	03-10-94 (THURS)	ORIFICE CORRECTION (ΔH@)	1.870
TEST UNIT	78A BATTERY 16C	TEST NO.	CRR-2-5-3	METER CORRECTION (Y)	1.0032
PROJECT NO.	3934-45-10	NOZZLE (SIZE,#)	0.170	CALIBRATION DATE	02-03-94
TEST CREW	RPC, TM, TD, JPS	STATIC PRESSURE	+ 0.60	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.22	PORT DIRECTION	SOUTH	CONTROL BOX NO.	FIVE

HOT/COLD BOX NO.	1/5	
PROBE NO.	5-3	
FILTER NO.	1163	
STACK DIA.	36.0	
PORT SIZE	4.0	

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		947.258	1.3	1.75	1.75	56	51	2.5	85	~250°C	68°C	~250°F	10 min./point
2.4		947.998	1.4	1.88	1.88	56	53	2.5	85				
4.3		948.792	1.5	2.01	2.01	56	53	2.5	88				
6.4		949.600	1.6	2.15	2.15	58	53	2.5	90				
9.0		950.424	1.4	1.88	1.88	57	54	2.5	90				
12.8		951.185	1.4	1.88	1.88	56	53	2.5	91				
23.2		951.940	1.4	1.88	1.88	58	54	2.5	91				
27.0		952.695	1.3	1.75	1.75	57	54	2.5	91				
29.6		953.440	1.7	2.28	2.28	56	51	2.5	92				
31.7		954.265	1.4	1.88	1.88	55	51	2.5	92				
33.6		955.035	1.5	2.01	2.01	55	51	2.5	93				
35.0		955.838	1.4	1.88	1.88	56	51	2.5	92				
		956.556											
Test Totals	Δ=60 min	Δ=46.546 dcf	$(\Delta P)_{AVG}$ = 1.4 (1.44)	$(\Delta H)_{AVG}$ = 1.88 (1.94)		$(T_{meter})_{AVG}$ = 55°F (54.4)			$(T_{stack})_{AVG}$ = 90°F (90)				Estimates: MW= 28.8 %H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 Baghouse ~~STACK~~

OBSERVER: Mark Zalcski

DATE: 3-8-94

FACILITY: USS- Clairton

OBSERVATION: START TIME: 8:40

END TIME: 9:40

OBSERVATION POINT:

By temporary wharf at #7

SOURCE: 7,8,9 Baghouse

DISTANCE: 400'

DIRECTION FROM: SE

HEIGHT: 100'

WIND:

SPEED: 7 mph

DIRECTION: SW →

TEMPERATURE: 37,40°

SKY CONDITION: overcast

BACKGROUND: sky, plant structure

READING CONDITIONS: fair

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: FOREMAN:

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	1	0	0	0	0		31	0	0	0	0
9A2	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	9B5	35	0	0	0	0
	6	0	0	0	0		36	0	0	0	0
8C1	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	7A5	40	0	0	0	0
	11	0	0	0	0		41	0	0	0	0
9B1	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	9A22	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
7 A1	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	9B7	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	A7	56	0	0	0	0
	27	0	0	0	0	7 A4	57	0	0	0	0
	28	0	0	0	0		58	0	0	0	0
7A3	29	0	0	0	0		59	0	0	0	0

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 Baghouse ~~STACK~~

OBSERVER: Mark Zaleski

DATE: 3-8-94

FACILITY: USS Clairton

OBSERVATION: START TIME: 9:40

END TIME: 10:40

OBSERVATION POINT:
By Batt 7 temp. wharf.

SOURCE: 7,8,9 Baghouse

DISTANCE: 400'

DIRECTION FROM: SE

HEIGHT: 100'

WIND:

SPEED: 9

DIRECTION: SW

TEMPERATURE: 39

SKY CONDITION: Overcast

BACKGROUND: sky, plant structure

READING CONDITIONS: fair

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: FOREMAN:

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	1	0	0	0	0	7A13	31	0	0	0	0
9B9	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	9B15	37	0	0	0	0
7A9	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	7A15	42	0	0	0	0
	13	0	0	0	0		43	0	0	0	0
9B11	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	9B17	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
7A11	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	7A17	53	0	0	0	0
	24	0	0	0	0		54	0	0	0	0
9B13	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	9B19	59	0	0	0	0

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 Baghouse ~~Stack~~

OBSERVER: Mark Zaleski

DATE: 3-8-94

FACILITY: USS-Clairton

OBSERVATION: START TIME: 10:40

END TIME: 11:40

OBSERVATION POINT: By Batt. 7 Temp. Wharf

SOURCE: 7,8,9 Baghouse

DISTANCE: ~400'

DIRECTION FROM: SE

HEIGHT: ~100'

WIND:

SPEED: 9 mph

DIRECTION: SW →

TEMPERATURE: 40

SKY CONDITION: Overcast

BACKGROUND: sky, plant structure

READING CONDITIONS: fair

COLOR OF EMISSION: –

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: ____ FOREMAN: ____

COMMENTS: ____

	0	0	0	0	0		30	0	0	0	0
	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
7A19	5	0	0	0	0	7A29	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	9	39	0	0	0	0
	10	0	0	0	0		40	0	0	0	0
7A21	11	0	0	0	0	9B21	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
7A23	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	9B23	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
7A25	22	0	0	0	0		52	0	0	0	0
	23	0	0	0	0	9B25	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
7A27	28	0	0	0	0		58	0	0	0	0
	29	0	0	0	0	9B27	59	0	0	0	0

VISIBLE EMISSIONS OBSERVATIONS FORM

BAGHOUSE

7,8,9 ~~STACK~~

OBSERVER: LANCE GRUMLING

DATE: 3-8-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 11:40

END TIME: 12:40

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400'

DIRECTION FROM: S-E

HEIGHT: 100'

WIND:

SPEED: 10 MPH

DIRECTION: S-W

TEMPERATURE: 40°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCONNELL

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	1	0	0	0	0		31	0	0	0	0
	2	0	0	0	0	8 A-2	32	0	0	0	0
	3	0	0	0	0		33	0	0	0	0
9 B-29	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
9 B-31	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
9 C-2	15	0	0	0	0	8 A-4	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
7 A-31	21	0	0	0	0		51	0	0	0	0
	22	0	0	0	0	9 B-4	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	9 B-8	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

VISIBLE EMISSIONS OBSERVATIONS FORM

BAGHOUSE

28.9 ~~STACK~~

OBSERVER: LANCE GRUMLING

DATE: 3-8-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 12:40

END TIME: 13:40

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400'

DIRECTION FROM: SOUTH

HEIGHT: 200'

WIND:

SPEED: 15 MPH

DIRECTION: WEST

TEMPERATURE: 38°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCORKLE

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	1	0	0	0	0		31	0	0	0	0
	2	0	0	0	0		32	0	0	0	0
9 B-14	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	8 A-8	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
7 B-4	9	0	0	0	0		39	0	0	0	0
	10	0	0	0	0	7 B-8	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
8 A-6	16	0	0	0	0		46	0	0	0	0
	17	0	0	0	0	8 A-10	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	7 B-10	53	0	0	0	0
	24	0	0	0	0		54	0	0	0	0
7 B-6	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	8 A-12	59	0	0	0	0

VISIBLE EMISSIONS OBSERVATIONS FORM

78,9 BAGHOUSE ~~SEEK~~

OBSERVER: LANCE GRUMLING

DATE: 3-8-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 13:40

END TIME: 14:40

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 16 MPH

DIRECTION: N.W

TEMPERATURE: 38°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCOOKLS

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	1	0	0	0	0	7 B-16	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
7 B-12	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	8 A-18	39	0	0	0	0
	10	0	0	0	0		40	0	0	0	0
8 A-14	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	7 B-18	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
7 B-14	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	8 A-20	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
8 A-16	25	0	0	0	0		55	0	0	0	0
	26	0	0	0	0	7 B-20	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

VISIBLE EMISSIONS OBSERVATIONS FORM

789 BAGHOUSE

OBSERVER: LANCE GRUMLING

DATE: 3-8-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 14:40

END TIME: 14:55

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400

DIRECTION FROM: SOUTH

HEIGHT: 100

WIND:

SPEED: 16 MPH

DIRECTION: N-W

TEMPERATURE: 38°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 60

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCONKLE

COMMENTS:

0	0	0	0	0	30				
1 (8 A-22)	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 (7 B-22)	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 (8 A-24)	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				

Name LANCE GRUMLING
Date 3-8-94
Foreman McCONKIE/HALL Crew B

BATTERY 7, 8, 9

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
9	A-18	8:41	:00	0	:00	5%	IN	NO VIEW
8	C-1	8:47	:21	100%	:48	75%	OUT	TOP HOOK
9	B-1	8:52	:16	70%	:31	50%	OUT	LATCH/HOOK
7	A-1	8:58	:11	75%	:27	45%	OUT	TOP LATCH
7	A-3	9:09	:09	55%	:19	60%	OUT	TOP LATCH
9	B-5	9:14	:00	10%	:00	5%	IN	TOP LATCH
7	A-5	9:20	:00	15%	:00	10%	IN	TOP LATCH
9	A-22	9:25	:00	0	:00	0	IN	TOP HOOK
9	B-7	9:31	:06	85%	:20	45%	OUT	TOP HOOK
7	A-7	9:37	:14	75%	:24	75%	OUT	TOP LATCH
9	B-9	9:42	:09	90%	:27	70%	OUT	TOP LATCH
7	A-9	9:48	:17	85%	:08	35%	OUT	TOP LATCH
9	B-11	9:53	:12	65%	:34	55%	OUT	TOP HOOK
7	A-11	10:00	:09	55%	:10	35%	OUT	TOP LATCH
9	B-13	10:05	:00	0	:00	0	IN	TOP LATCH
7	A-13	10:10	:00	10%	:06	45%	IN/OUT	LATCH/HOOK
9	B-15	10:16	:00	5%	:00	10%	IN	TOP LATCH
7	A-15	10:22	:00	15%	:00	10%	IN	TOP LATCH
9	B17	10:27	:16	80%	:17	40%	OUT	TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name LANCE GRUMLING
Date 3-8-94
Foreman McCONKLE / HALL Crew B

BATTERY 7, 8, 9

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
7	A-17	10:33	:11	70%	:07	30%	OUT	LATCH/HOOK
9	B-19	10:39	:00	10%	:22	55%	IN/OUT	TOP LATCH
7	A-19	10:45	:12	75%	:33	75%	OUT	TOP LATCH
7	A-21	10:51	:06	65%	:17	55%	OUT	NO VIEW
7	A23	10:56	:09	60%	:07	40%	OUT	TOP LATCH
7	A-25	11:02	:00	15%	:00	10%	IN	TOP LATCH
7	A-27	11:08	:11	65%	:13	40%	OUT	TOP LATCH
7	A-29	11:15	:19	90%	:26	75%	OUT	TOP LATCH
9	B-21	11:22	:00	10%	:00	0	IN	NO VIEW
9	B-23	11:27	:07	65%	:00	10%	OUT/IN	TOP LATCH
9	B-25	11:33	:00	15%	:00	5%	IN	TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name Mark Zaleski
Date 3-8-94
Foreman _____ Crew _____

BATTERY ~~E~~

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
~~wall~~ 9	B-27	11:40	:00	10%	:00	0%		Can't see face
9	B-29	11:46	:06	65%	:00	10%		"
9	B-31	11:51	:03	50%	:00	0%		"
9	C-2	11:57	:02	60%	:00	05%		"
7	A-31	12:03	:00	10%	:00	0%		
8	A-2	12:14	:00	10%	:00	0%		
8	A 4	12:26	:00	5%	:00	5%		
9	B 4	12:33	:00	0%	:00	0%		
9	B 8	12:38	:00	5%	:00	0%		
8	B14	12:45	:00	0%	:00	0%		
7	B 4	12:51	:03	75%	:00	5%		
8	A 6	12:57	:00	15%	:00	5%		
7	B6	1:06	:13%	85%	00	10%		
8	A8	1:15	:00	15%	:00	5%		
7	B8	1:22	:00	5%	:00	5%		
8	A10	1:28	:00	15%	:00	10%		
7	B10	1:35	:00	10%	:00	5%		
8	A 12	1:41	:00	10%	:00	5%		
7	B 12	1:47	:00	5%	:00	10%		

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name Mark Zaleski

Date 3-8-94

Foreman _____ Crew _____

BATTERY —

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
8	A14	1:53	:00	5%	:05	15%		
7	B14	2:00	:00	5%	:00	5%		
8	A16	2:07	:03	40%	:00	10%		
7	B16	2:13	:00	10%	:00	5%		
8	A18	2:21	:06	80%	:00	10%		
7	B18	2:27	:00	10%	:00	5%		
8	A20	2:32	:00	5%	:00	5%		
7	B20	2:38	:00	15%	:00	5%		
8	A22	2:42	:00	5%	:00	5%		
7	B22	2:47	:00	15%	:04	15%		
8	A24	2:52	:00	10%	:00	10%		

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

VISIBLE EMISSIONS OBSERVATIONS FORM

BAGHOUSE

7,8,9 ~~STACK~~

OBSERVER: LANCE GRUMLING

DATE: 3-9-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 14:30

END TIME: 15:20

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 8 MPH

DIRECTION: EAST

TEMPERATURE: 34°F

SKY CONDITION: OVERCAST + L RAIN

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION:

TOTAL No. OF READINGS: 200

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCOAKLE

COMMENTS:

0	0	0	0	0	0
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	0	0	0	0
13	0	0	0	0	0
14	0	0	0	0	0
15	0	0	0	0	0
16	0	0	0	0	0
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	0	0	0
20	0	0	0	0	0
21	0	0	0	0	0
22	0	0	0	0	0
23	0	0	0	0	0
24	0	0	0	0	0
25	0	0	0	0	0
26	0	0	0	0	0
27	0	0	0	0	0
28	0	0	0	0	0
29	0	0	0	0	0

7 A-10	30	0	0	0	0
	31	0	0	0	0
	32	0	0	0	0
	33	0	0	0	0
	34	0	0	0	0
	35	0	0	0	0
9 B-12	36	0	0	0	0
	37	0	0	0	0
	38	0	0	0	0
	39	0	0	0	0
	40	0	0	0	0
	41	0	0	0	0
7 A-12	42	0	0	0	0
	43	0	0	0	0
	44	0	0	0	0
	45	0	0	0	0
	46	0	0	0	0
	47	0	0	0	0
9 B-14	48	0	0	0	0
	49	0	0	0	
	50				
	51				
	52				
	53				
	54				
	55				
	56				
	57				
	58				
	59				

1 PUSH IN AND TRAVEL OUT

Name LANCE GRUMLING
Date 3-9-94
Foreman McCONKLE/HALL Crew B

BATTERY 7,8,9 P.E.C.

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
8	B-7	11:17	:00	15%	:10	60%	IN/OUT	NO VIEW
9	A-9	11:22	:00	5%	:00	0	IN	TOP LATCH
8	B-9	11:28	:00	0	:00	0	IN	NO VIEW
9	A-11	11:34	:00	5%	:00	0	IN	TOP HOOK
8	B-11	11:40	:00	15%	:00	10%	IN	NO VIEW
9	A-13	11:46	:00	10%	:00	0	IN	TOP LATCH
8	B-13	11:51	:00	10%	:00	10%	IN	NO VIEW
9	A-15	11:57	:00	0	:00	10%	IN	TOP LATCH
8	B-15	12:02	:13	70%	:25	60%	OUT	NO VIEW
9	A-17	12:08	:00	5%	:00	10%	IN	TOP LATCH
8	B-17	12:13	:22	90%	:47	80%	OUT	NO VIEW

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

- push - - - - travel out travel out

travel in

Name Mark Zaleski

Date 3-9-94

Foreman _____ Crew _____

BATTERY 7,8,9 P.E.C.

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
9	A19	12:18	:11	90%	:00	10%		
8	B19	12:24	:07	50%	:19	25%		
9	A21	12:29	:00	15%	:00	10%		
8	B21	12:34	:15	40%	:05	20%		
9	A23	12:41	:07	50%	:18	15%		
8	B23	12:47	:04	30%	:08	25%		
8	B25	12:58	:04	30%	:03	20%		
9	A27	1:03	:13	95%	:05	30%		
8	B27	1:09	:05	75%	:00	10%		
9	A14	1:15	:00	05%	:00	05%		
9	A29	1:22	:06	85%	:05	30%		
8	B29	1:29	:00	15%	:00	10%		
9	A31	1:34	:00	15%	:08	25%		
8	B31	1:40	:03	30%	:09	20%		
9	A18	1:45	:00	10%	:00	05%		
8	C2	1:51	:00	05%	:00	05%		
9	B2	1:57	:00	15%	:00	10%		
7	A2	2:02	:00	15%	:08	35%		
9	A22	2:07	:00	05%	:00	00%		

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

1 push out
Travel in

1 travel out
push in

Name Mark Zaleski
Date 3-9-94

Foreman _____ Crew _____

BATTERY 7,8,9 PEC.

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
9	B4	2:13	:00	05%	:00	05%		
7	A4	2:19	:00	15%	:08	35%		
9	B6	2:24	:00	15%	:00	10%		
7	A6	2:30	:00	15%	:00	10%		
9	B8	2:35	:00	05%	:00	00%		
7	A8	2:41	:00	15%	:00	05%		
9	B10	2:46	:00	10%	:00	10%		
7	A10	2:58	:00	05%	:00	00%		
9	B12	3:04	:03	35%	:00	05%		
7	A12	3:10	:00	05%	:00	05%		
9	B14	3:15	:00	00%	:00	05%		

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 ~~STACK~~ Baghouse

OBSERVER: Mark Zaleski

DATE: 3-10-94

FACILITY: USS - Clairton

OBSERVATION: START TIME: 8:10

END TIME: 9:10

OBSERVATION POINT:

By Batt. 7 temp. wharf

SOURCE: 7,8,9 Baghouse

DISTANCE: ~400'

DIRECTION FROM: SE

HEIGHT: ~100'

WIND:

SPEED: 14 mph

DIRECTION: West →

TEMPERATURE: 25

SKY CONDITION: Overcast

BACKGROUND: sky, plant structure

READING CONDITIONS: fair

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: FOREMAN:

COMMENTS:

	0	0	0	0	0		30	0	0	0	0	
	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	
9A27	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	8B31	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	
8B27	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	
9A29	16	0	0	0	0		46	0	0	0	0	
	17	0	0	0	0	9B2	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	
8B29	22	0	0	0	0		52	0	0	0	0	
	23	0	0	0	0	9A2	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	
9A31	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	

VISIBLE EMISSIONS OBSERVATIONS FORM

BAGHOUSE

7,8,9 ~~STACK~~

OBSERVER: Sam Dunlap

DATE: 3-9-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 13:30

END TIME: 14:30

OBSERVATION POINT:

7 BATTERY TEMP WHARF

SOURCE:

DISTANCE: 400'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 10 MPH

DIRECTION: EAST

TEMPERATURE: 31°F

SKY CONDITION: OVERCAST + L. RAIN

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: B FOREMAN: McCONKLE

COMMENTS:

	0	0	0	0	0		30	0	0	0	0	
8 B-29	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	7 A-2	34	0	0	0	0	
	5	0	0	0	0		35	0	0	0	0	
9 A-31	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	9 A-22	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	
8 B-31	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	9 B-4	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	
9 A-18	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	7 A-4	50	0	0	0	0	
	21	0	0	0	0		51	0	0	0	0	
8 C-2	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	9 B-6	56	0	0	0	0	
	27	0	0	0	0		57	0	0	0	0	
9 B-2	28	0	0	0	0		58	0	0	0	0	
	29	0	0	0	0		59	0	0	0	0	

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 Baghouse ~~Stack~~

OBSERVER: Mark Zaleski

DATE: 3-10-94

FACILITY: USS - Clairton

OBSERVATION: START TIME: 9:10

END TIME: 10:10

OBSERVATION POINT:

By Batt. 7 Temp. Wharf

SOURCE: 7,8,9 Baghouse

DISTANCE: ~400'

DIRECTION FROM: SE

HEIGHT: ~100'

WIND:

SPEED: 12 mph

DIRECTION: NW →

TEMPERATURE: 29

SKY CONDITION: Overcast

BACKGROUND: sky plant structure

READING CONDITIONS: fair

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20%

No. READINGS >= 60%

GREATEST OPACITY:

CREW: FOREMAN:

COMMENTS:

9B4	0	0	0	0	0		30	0	0	0	0
	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	9B10	35	0	0	0	0
7A4	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	7A10	41	0	0	0	0
9B6	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	9B12	46	0	0	0	0
7A6	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	7A12	52	0	0	0	0
9B8	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	9A5	57	0	0	0	0
	28	0	0	0	0		58	0	0	0	0
7 A8	29	0	0	0	0		59	0	0	0	0

VISIBLE EMISSIONS OBSERVATIONS FORM

7,8,9 ~~Stack~~ Baghouse

OBSERVER: Mark Zaleski

DATE: 3-10-94

FACILITY: USS-Clairton

OBSERVATION: START TIME: 10:10

END TIME: 11:10

OBSERVATION POINT: Batt. 7 Temp. Wharf.

SOURCE: 7,8,9 Baghouse

DISTANCE: ~400'

DIRECTION FROM: SE

HEIGHT: ~100'

WIND:

SPEED: 12 mph

DIRECTION: NW

TEMPERATURE: 29

SKY CONDITION: Overcast

BACKGROUND: sky, plant structure

READING CONDITIONS: fair

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: ____ FOREMAN:

COMMENTS:

	0	0	0	0	0		30	0	0	0	0
	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	7A18	33	0	0	0	0
	4	0	0	0	0		34	0	0	0	0
9B14	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	9B20	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
7A14	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	7A20	45	0	0	0	0
9B16	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	9B22	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
7A16	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	7A22	55	0	0	0	0
	26	0	0	0	0		56	0	0	0	0
9B18	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

VISIBLE EMISSIONS OBSERVATIONS FORM

7-89 Baghouss STACKS

OBSERVER: [signature]

DATE: 3-10-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 11:10

END TIME: 12:10

OBSERVATION POINT: 7 Batt Temp Coke Wharf

SOURCE: Baghouse Stakes

DISTANCE: 400'

DIRECTION FROM: South

HEIGHT: 100'

WIND:

SPEED: 13 mph

DIRECTION: West

TEMPERATURE: 29°F

SKY CONDITION: Overcast

BACKGROUND: Sky - 9 stack

READING CONDITIONS: Good

COLOR OF EMISSION: –

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: ____ FOREMAN: ____

COMMENTS: ____

0	0	0	0	0	30	0	0	0	0
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 9-B24

31 7-A-24

32 9-B26

33 7A-26

34 9-B28

35 7-A28

36 9-B-30

37 7-A-30

38 8-A-1

39 7-B1

VISIBLE EMISSIONS OBSERVATIONS FORM

7-8-9 Baghouse STACKS

OBSERVER: [signature]

DATE: 3-10-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 12:10

END TIME: 13:10

OBSERVATION POINT:

2 Batt Tame Coke Wharf

SOURCE: Baghouse Stacks

DISTANCE: 400'

DIRECTION FROM: South

HEIGHT: 100'

WIND:

SPEED: 14 mph

DIRECTION: NW

TEMPERATURE: 32°F

SKY CONDITION: OVERCAST

BACKGROUND: Sky - 9 stack

READING CONDITIONS: Good

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: FOREMAN:

COMMENTS:

0	0	0	0	0	30	0	0	0	0
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

40 8-A3

41 7-B3

42 8-A5

43 7-B5

44 8-A7

45 7-B7

46 8-A9

47 7-B9

48 8-A11

49 7-B11

VISIBLE EMISSIONS OBSERVATIONS FORM

7-8-9 Baghouse STACKS

OBSERVER: [illegible]

DATE: 3-10-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 13:10

END TIME: 14:10

OBSERVATION POINT:

7 Batt Temp Coke Wharf

SOURCE: Baghouse

DISTANCE: 400'

DIRECTION FROM: South

HEIGHT: 100'

WIND:

SPEED: 14 mph

DIRECTION: NW

TEMPERATURE: 31 °F

SKY CONDITION: Overcast

BACKGROUND: Sky - 9 stack

READING CONDITIONS: Good

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20%

No. READINGS >= 60%

GREATEST OPACITY:

CREW: FOREMAN:

COMMENTS:

0	0	0	0	0		30	0	0	0	0
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

50 8-A13

51 7-B13

52 8-A15

53 7-B15

54 8-A17

55 7-B17

56 8-A19

57 7-B19

58 8-A21

59 7-B21

60 8-A23

61 7-B23

Name [illegible]
Date 3-10-94
Foreman D. McCoakle Crew B

BATTERY 7-9 Dec

Battery	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	~~III. SCRUBBER Seconds Max. ≥ 20% Opac.~~		Comments:
9	A-27	8:14	0 = 5%	0 = 5%	—	1	Coke Face not visible
8	B-27	8:21	0 = 15%	19 = 30%	OUT	2	Good Face Top Hook
9	A-29	8:27	0 = 15%	0 = 10%	—	3	Slight Green Face over Top Latch
8	B-29	8:32	0 = 10%	17 = 30%	OUT	4	Slight Green Face Top Latch
9	A-31	8:38	7 = 35%	0 = 10%	OUT	5	Slight Green Face Top Latch
8	B-31	8:46	0 = 10%	20 = 30%	OUT	6	Green Face Top Latch
9	B-2	8:58	6 = 50%	7 = 30%	OUT	7	Slight Green Face Top Latch
7	A 2	9:05	1 = 70%	27 = 60%	OUT	8	Slight Green Face Top Latch
9	B-4	9:11	11 = 80%	16 = 30%	OUT	9	Good Face Top Latch
7	A-4	9:17	0 = 10%	0 = 10%	—	10	Slight Green Face Top Latch
9	B-6	9:22	10 = 100%	35 = 35%	OUT	11	Slight Green Face Top Latch
7	A-6	9:28	0 = 10%	0 = 5%	—	12	Good Face Top Latch
9	B-8	9:34	5 = 100%	28 = 20%	OUT	13	Good Face Top Latch
7	A-8	9:40	0 = 15%	0 = 10%	—	14	Slight Green Face Top Latch
9	B-10	9:45	8 = 80%	20 = 30%	OUT	15	Slight Green Face Top Latch
7	A-10	9:51	0 = 5%	0 = 10%	—	16	Slight Green Face Top Latch
9	B-12	9:57	7 = 80%	12 = 30%	OUT	17	Good Face Top Latch
7	A-12	10:03	0 = 5%	0 = 5%	—	18	Good Face Top Latch
9	A-5	10:08	0	0 = 5%	—	19	Good Face Top Latch

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name [illegible]
Date 3-10-94
Foreman D. McCorkle Crew B

BATTERY 7-9 Pcc

Battery	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.		Comments:
9	B-14	10:15	5=40%	0=10%	OUT	20	Green Face Top Latch
7	A-14	10:21	0=10%	0=10%	—	21	Good Face Top Latch
9	B-16	10:26	13=100%	27=40%	OUT	22	Slight Green Face Top Latch
7	A-16	10:32	0=15%	0=10%	—	23	Slight Green Face Top Latch
9	B-18	10:37	7=60%	13=20%	OUT	24	Slight Green Face Top Latch
7	A-18	10:43	0=15%	19=70%	OUT	25	Slight Green Face Top Latch
9	B-20	10:48	10=100%	40=100%	OUT	26	Slight Green Face Top Latch
7	A-20	10:54	10=40%	26=50%	OUT	27	Green Face Top Latch
9	B-22	10:59	12=100%	16=70%	OUT	28	Coke Face Not Visible
7	A-22	11:05	0=5%	0=10%	—	29	Slight Green Face Top Latch
9	B-24	11:10	10=80%	12=40%	OUT	30	Slight Green Face Top Latch

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name MARK ZALESKI
Date 3-10-94
Foreman _____ Crew _____

BATTERY 7-9 PEC

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:	
							Push / Travel		
7	A 24	11:16	:00	5%	:05	15%	IN / out	Did not see face	1
9	B 26	11:21	:04	60%	:03	15%	out / out	T.L.	2
7	A 26	11:27	:06	75%	:10	30%	out / out	T.L	3
9	B 28	11:32	:12	65%	:04	20%	out / out	Can't see face	4
7	A 28	11:37	:05	75%	:11	20%	out / out	T.L. Green face	5
9	B 30	11:43	:07	55%	:04	40%	out / out	Can't see face	6
7	A 30	11:55	:00	10%	:00	10%	IN / IN	T.L.	7
8	A 1	11:59	:03	45%	:07	15%	out / out	Can't see face	8
7	B 1	12:04	:03	40%	:09	30%	out / out	T.L. Green	9
8	A 3	12:10	:00	15%	:00	10%	IN / IN	Can't See face	10
7	B 3	12:17	:00	10%	:00	10%	IN / IN	T.L.	11
8	A 5	12:26	:03	35%	:08	30%	out / out	Can't see face	12
7	B 5	12:33	:04	30%	:16	25%	out / out		13
8	A 7	12:38	:00	15%	:00	10%	IN / IN		14
7	B 7	12:44	:00	15%	:00	10%	IN / IN		15
8	A 9	12:48	:03	75%	:05	20%	out / out		16
7	B 9	12:54	:00	10%	:03	30%	IN / out		17
8	A 11	1:00	:00	10%	:00	10%	IN / IN		18
7	B 11	1:06	:00	15%	:12	40%	IN / out		19

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name MARK ZALESKI
Date 3-10-94
Foreman _____ Crew _____

BATTERY 7-9 PEC

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac. (Push / Travel)	Comments:
8	A13	1:11	:00 15%	:00 10%	IN / IN	20
7	B13	1:14	:05 65%	:06 30%	OUT / OUT	21
8	A15	1:21	:00 00%	:00 05%	IN / IN	22
7	B15	1:27	:00 10%	:00 10%	IN / IN	23
8	A17	1:31	:00 15%	:16 20%	IN / OUT	24
7	B17	1:37	:06 60%	:10 40%	OUT / OUT	25
8	A19	1:41	:10 100%	:18 60%	OUT / OUT	26
7	B19	1:45	:00 15%	:00 10%	IN / IN	27
8	A21	1:52	:07 85%	:15 35%	OUT / OUT	28
7	B21	1:57	:03 60%	:00 10%	OUT / IN	29
8	A23	2:02	:11 100%	:15 50%	OUT / OUT	30
7	B23	2:07	:05 85%	:08 20%	OUT / OUT	31

Note: Column #I represents fugitive emissions from the coke collecting car, coke guice, and area between the coke guide and jamb, and emissions from the by-pass duct durin the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 2 BP 29.05 in. Hg
DATE 02-04-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	29.05				0.50	989.300		
HALF		69.0			95.0	81.0	88.0				
STOP	11.30		5.000						994.458		
CALCULATION	11.30	529.0	5.013	29.05			548.0	29.09	5.158	1.0054	1.416
START			0.000	29.05				1.00	994.800		
HALF		69.0			100.0	81.0	90.5				
STOP	8.67		5.000						999.925		
CALCULATION	8.67	529.0	5.013	29.05			550.5	29.12	5.125	1.0152	1.660
START			0.000	29.05				2.00	1000.600		
HALF		69.0			103.0	81.0	92.0				
STOP	5.93		5.000						1005.757		
CALCULATION	5.93	529.0	5.013	29.05			552.0	29.20	5.157	1.0091	1.549
AVERAGE										1.0099	1.541

POST TEST

BOX # 2 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.90				1.50	627.800		
HALF		74.0			104.0	86.0	95.0				
STOP	7.00		5.000						632.835		
CALCULATION	7.00	534.0	5.013	28.90			555.0	29.01	5.035	1.0307	1.649
START			0.000	28.90				1.50	633.200		
HALF		74.0			105.0	88.0	96.5				
STOP	6.98		5.000						638.265		
CALCULATION	6.98	534.0	5.013	28.90			556.5	29.01	5.065	1.0274	1.635
START			0.000	28.90				1.50	638.700		
HALF		74.0			105.0	89.0	97.0				
STOP	6.98		5.000						643.770		
CALCULATION	6.98	534.0	5.013	28.90			557.0	29.01	5.070	1.0273	1.633
AVERAGE										1.0285	1.639
DIFFERENCE										-1.8%	-6.0%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 2
DATE 01-03-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	0.98
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-01-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	988.645	988.775	0.130	10.000	0.001
WET	0.000	0.140	0.140		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-26-94
OPERATOR TM

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	41.0
0.40	50	51.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	151.0
3.82	200	202.0
6.09	300	303.0
8.31	400	402.0
10.57	500	503.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 2
DATE 03-22-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 03-22-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	627.360	627.550	0.190	10.000	0.0005
WET	0.000	0.195	0.195		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	401.0
10.57	500	501.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-04-94	B.P.	29.05
OPERATOR	RPC	BOX #	2		

RUN	1		2		3	
INITIAL CF	17.000		24.400		31.900	
FINAL CF	24.160		31.587		39.131	
DIFFERENCE	7.160		7.187		7.231	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	68	63	81	75	81	76
TEMP 5 MIN	78	71	81	75	82	76
TEMP 10 MIN	79	72	81	75	82	77
TEMP 15 MIN	81	75	81	76	82	77
		TEMP R		TEMP R		TEMP R
TEMP AVG	73.375	533.375	78.125	538.125	79.125	539.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.60	0.04	0.60	0.04	0.60	0.04
METER PRESSURE		29.09		29.09		29.09
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	19.5		19.5		19.5	
DGM CAL Y	1.0099		1.0099		1.0099	
STD CF	6.987		6.951		6.981	
STD CUBIC METERS	0.1979		0.1969		0.1977	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 3 BP 29 in. Hg
DATE 01-24-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	29.00				0.50	590.300		
HALF		70.0			90.0	81.0	85.5				
STOP	11.68		5.000						595.400		
CALCULATION	11.68	530.0	5.013	29.00			545.5	29.04	5.100	1.0103	1.528
START			0.000	29.00				1.00	595.700		
HALF		70.0			99.0	83.0	91.0				
STOP	8.52		5.000						600.795		
CALCULATION	8.52	530.0	5.013	29.00			551.0	29.07	5.095	1.0202	1.610
START			0.000	29.00				2.00	601.200		
HALF		70.0			102.0	85.0	93.5				
STOP	6.06		5.000						606.291		
CALCULATION	6.06	530.0	5.013	29.00			553.5	29.15	5.091	1.0230	1.622
AVERAGE										1.0179	1.587

POST TEST

BOX # 3 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.90				1.50	491.100		
HALF		74.0			90.0	83.0	86.5				
STOP	7.00		5.000						496.190		
CALCULATION	7.00	534.0	5.013	28.90			546.5	29.01	5.090	1.0040	1.674
START			0.000	28.90				1.50	496.500		
HALF		74.0			98.0	84.0	91.0				
STOP	7.00		5.000						501.615		
CALCULATION	7.00	534.0	5.013	28.90			551.0	29.01	5.115	1.0073	1.661
START			0.000	28.90				1.50	502.000		
HALF		74.0			98.0	84.0	91.0				
STOP	7.01		5.000						507.121		
CALCULATION	7.01	534.0	5.013	28.90			551.0	29.01	5.121	1.0061	1.665
AVERAGE										1.0058	1.667
DIFFERENCE										1.2%	-4.8%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 3
DATE 01-24-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.48
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 01-24-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	558.400	558.595	0.195	10.000	-0.000
WET	0.000	0.195	0.195		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-24-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	402.0
10.57	500	503.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 3
DATE 03-22-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 03-22-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	490.650	490.770	0.120	10.000	0.0005
WET	0.000	0.125	0.125		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	402.0
10.57	500	502.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	01-25-94	B.P.	29.05
OPERATOR	RPC	BOX #	3		

RUN	1		2		3	
INITIAL CF	611.400		619.100		626.800	
FINAL CF	618.700		626.400		634.131	
DIFFERENCE	7.300		7.300		7.331	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	78	76	82	79	84	81
TEMP 5 MIN	80	77	82	80	82	79
TEMP 10 MIN	81	78	83	81	82	80
TEMP 15 MIN	82	79	84	81	82	80
		TEMP R		TEMP R		TEMP R
TEMP AVG	78.875	538.875	81.5	541.5	81.25	541.25
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.65	0.05	0.65	0.05	0.65	0.05
METER PRESSURE		29.10		29.10		29.10
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	20.0		20.0		20.0	
DGM CAL Y	1.0179		1.0179		1.0179	
STD CF	7.107		7.073		7.106	
STD CUBIC METERS	0.2013		0.2003		0.2013	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 4 BP 28.95 in. Hg
DATE 02-03-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.95				0.50	653.400		
HALF		70.0			84.0	83.0	83.5				
STOP	11.82		5.000						658.469		
CALCULATION	11.82	530.0	5.013	28.95			543.5	28.99	5.069	1.0128	1.573
START			0.000	28.95				1.00	658.800		
HALF		70.0			86.0	85.0	85.5				
STOP	8.72		5.000						663.920		
CALCULATION	8.72	530.0	5.013	28.95			545.5	29.02	5.120	1.0051	1.706
START			0.000	28.95				2.00	664.300		
HALF		70.0			86.0	84.0	85.0				
STOP	6.33		5.000						669.436		
CALCULATION	6.33	530.0	5.013	28.95			545.0	29.10	5.136	0.9985	1.800
AVERAGE										1.0054	1.693

POST TEST

BOX # 4 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	28.90				1.50	333.400		
HALF		75.0			94.0	93.0	93.5				
STOP	7.16		5.000						338.610		
CALCULATION	7.16	535.0	5.013	28.90			553.5	29.01	5.210	0.9916	1.736
START			0.000	28.90				1.50	338.900		
HALF		75.0			96.0	94.0	95.0				
STOP	7.18		5.000						344.118		
CALCULATION	7.18	535.0	5.013	28.90			555.0	29.01	5.218	0.9927	1.741
START			0.000	28.90				1.50	344.500		
HALF		75.0			97.0	96.0	96.5				
STOP	7.21		5.000						349.700		
CALCULATION	7.21	535.0	5.013	28.90			556.5	29.01	5.200	0.9989	1.751
AVERAGE										0.9944	1.743
DIFFERENCE										1.1%	-2.8%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 4
DATE 02-03-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-03-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	652.800	653.100	0.300	10.000	0.002
WET	0.000	0.322	0.322		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-28-94
OPERATOR TM

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	41.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	201.0
6.09	300	302.0
8.31	400	400.0
10.57	500	501.0

POST-TEST MAGNEHELIC CALIBRATION

BOX# 4

DATE 03-22-94

OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK

DATE 03-22-94

OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	332.700	332.890	0.190	10.000	0.0000
WET	0.000	0.190	0.190		

PYROMETER CALIBRATION

DATE 04-28-88

OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK

DATE 03-22-94

OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-03-94	B.P.	28.95
OPERATOR	RPC	BOX #	4		

RUN	1		2		3	
INITIAL CF	628.900		636.700		644.600	
FINAL CF	636.304		644.254		652.298	
DIFFERENCE	7.404		7.554		7.698	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	81	81	82	81	82	81
TEMP 5 MIN	81	80	82	81	82	82
TEMP 10 MIN	81	80	82	81	83	82
TEMP 15 MIN	82	81	82	81	83	82
		TEMP R		TEMP R		TEMP R
TEMP AVG	80.875	540.875	81.5	541.5	82.125	542.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.70	0.05	0.70	0.05	0.70	0.05
METER PRESSURE		29.00		29.00		29.00
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	18.5		18.5		18.5	
DGM CAL Y	1.0054		1.0054		1.0054	
STD CF	7.070		7.205		7.334	
STD CUBIC METERS	0.2002		0.2041		0.2077	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 5 BP 28.95 In. Hg
DATE 02-03-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.95				0.50	680.400		
HALF		70.0			92.0	81.0	86.5				
STOP	13.08		5.000						685.550		
CALCULATION	13.08	530.0	5.013	28.95			546.5	28.99	5.150	1.0023	1.916
START			0.000	28.95				1.00	686.800		
HALF		70.0			91.0	85.0	88.0				
STOP	9.13		5.000						691.945		
CALCULATION	9.13	530.0	5.013	28.95			548.0	29.02	5.145	1.0048	1.862
START			0.000	28.95				2.00	692.300		
HALF		70.0			93.0	82.0	87.5				
STOP	6.40		5.000						697.439		
CALCULATION	6.40	530.0	5.013	28.95			547.5	29.10	5.139	1.0025	1.832
AVERAGE										1.0032	1.870

POST TEST

BOX # 5 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	28.90				1.50	985.900		
HALF		76.0			97.0	88.0	92.5				
STOP	7.25		5.000						991.009		
CALCULATION	7.25	536.0	5.013	28.90			552.5	29.01	5.109	1.0075	1.790
START			0.000	28.90				1.50	991.400		
HALF		76.0			101.0	88.0	94.5				
STOP	7.27		5.000						996.500		
CALCULATION	7.27	536.0	5.013	28.90			554.5	29.01	5.100	1.0129	1.793
START			0.000	28.90				1.50	996.900		
HALF		76.0			104.0	89.0	96.5				
STOP	7.25		5.000						1002.010		
CALCULATION	7.25	536.0	5.013	28.90			556.5	29.01	5.110	1.0146	1.777
AVERAGE										1.0116	1.787
DIFFERENCE										-0.8%	4.7%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 5
DATE 02-02-94
OPERATOR RPC

0 to 10.0" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE
SLANT TUBE
PRIMARY STANDARD

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-03-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	680.025	680.175	0.150	10.000	0.001
WET	0.000	0.160	0.160		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 02-03-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 5
DATE 03-22-94
OPERATOR RPC

0 to 10.0" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE
SLANT TUBE
PRIMARY STANDARD

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 10-22-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	985.100	985.310	0.210	10.000	0.0001
WET	0.000	0.211	0.211		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-03-94	B.P.	29.85
OPERATOR	RPC	BOX #	5		

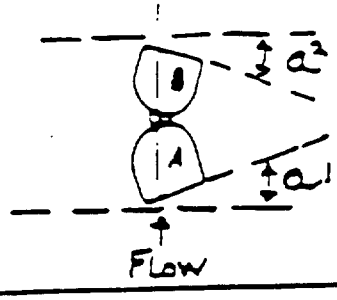
RUN	1		2		3	
INITIAL CF	657.400		664.900		672.400	
FINAL CF	664.620		672.184		679.700	
DIFFERENCE	7.220		7.284		7.300	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	77	77	79	78	79	78
TEMP 5 MIN	79	77	79	78	80	78
TEMP 10 MIN	79	77	79	78	81	78
TEMP 15 MIN	80	77	79	78	80	79
		TEMP R		TEMP R		TEMP R
TEMP AVG	77.875	537.875	78.5	538.5	79.125	539.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.75	0.06	0.75	0.06	0.75	0.06
METER PRESSURE		29.91		29.91		29.91
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	19.5		19.5		19.5	
DGM CAL Y	1.0032		1.0032		1.0032	
STD CF	7.134		7.188		7.196	
STD CUBIC METERS	0.2020		0.2036		0.2038	

GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck ✓
Post Check

Probe #: 5-1
Date: 3-4-94
Initials: TMM

①

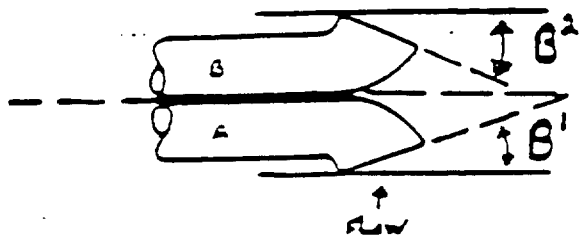


a^1 = 1°
a^2 = 6°
a^1, a^2 = <10°

B^1 = 3°
B^2 = 4°
B^1, B^2 = <5°

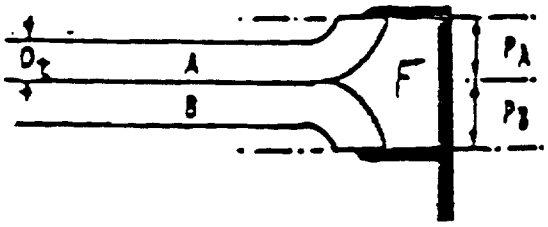
F = 1.024"

②



μ = 0.0178 — μ = ≤ 0.1250" (μ = F TAN γ)
V = 0.0268 — V = ≤0.03125" (V = F TAN θ)
W = 0.385 — W ≥ 0"
X = 1.015 — X ≥ 0.750" (3/4" using 1/2" nozzle)

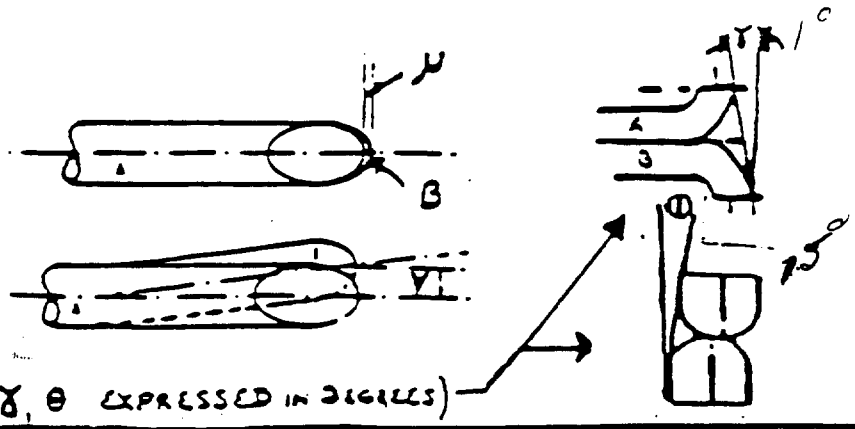
③



1.05 D_t < A < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

Y = 6.000 — Y ≥ 3.0"
Z = 3.65 — Z > 2.0"
D_t = 0.375 — D_t > .1875"

④



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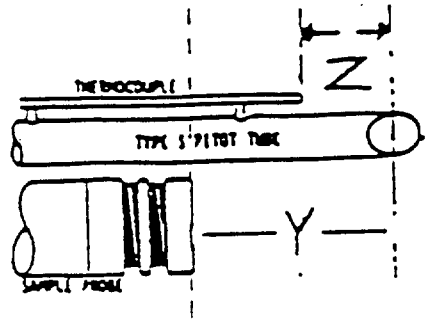

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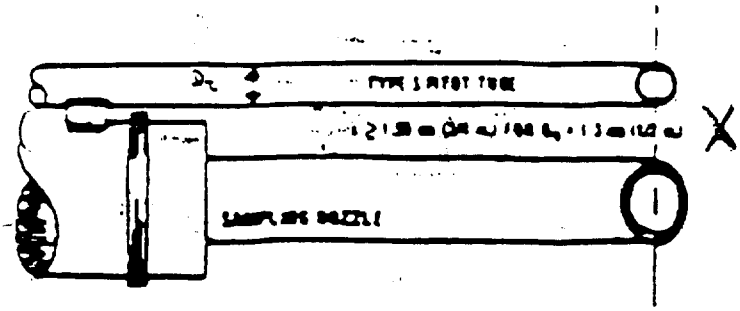

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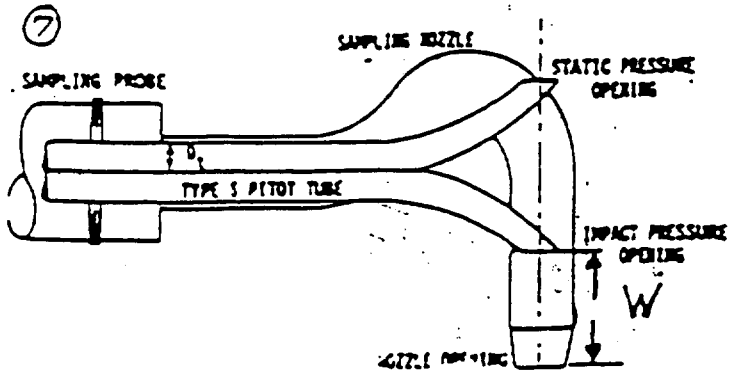
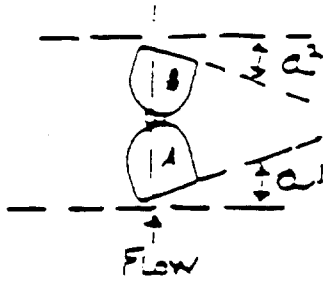


GEOMETRIC PITOT CALIBRATION

Caliper # XGF-59
Precheck:
Post Check: ✓

Probe #: 5-1
Date: 03-22-94
Initials: RPC

①

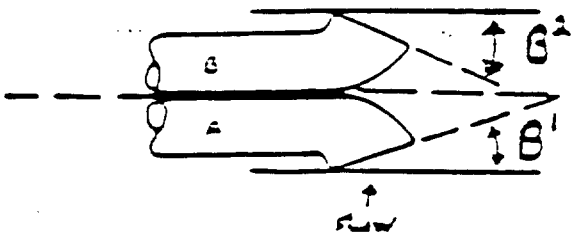


a¹ = 1°
a² = 3°
a¹, a² = <10°

B¹ = 3°
B² = 3°
B¹, B² = <5°

F = 1.03 "

②



μ = 0.0178 — μ = ≤ 0.1250" (μ = F tan γ)

V = .0269 — V = ≤0.03125" (V = F tan θ)

W = 1.0" — W ≥ 0"

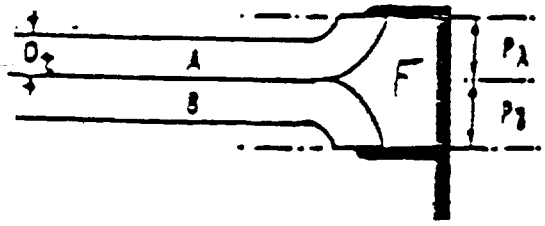
X = .800 — X ≥ 0.750" (3/4" using 1/2" nozzle)

Y = 6.0 — Y ≥ 3.0"

Z = 3.50 — Z > 2.0"

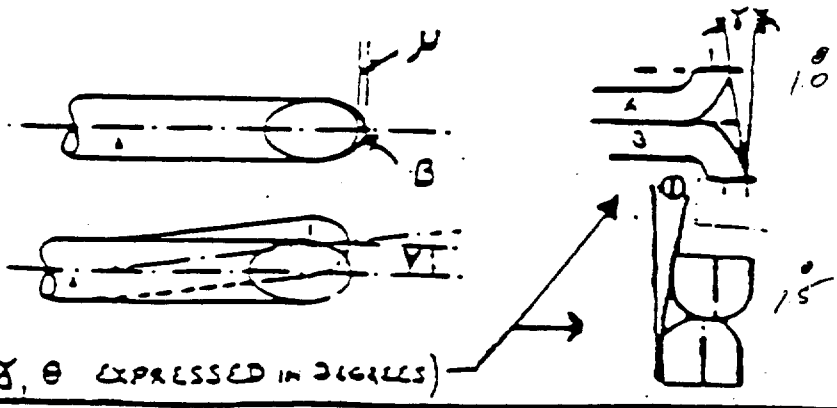
D_t = 0.375 — D_t > .1875"

③



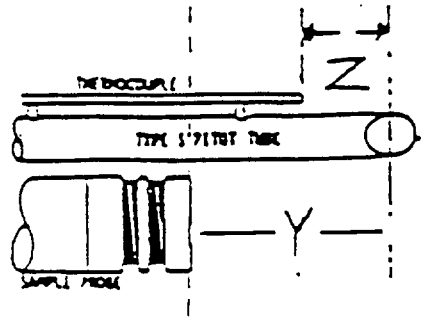
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

④



(γ, θ EXPRESSED IN DEGREES)

⑥



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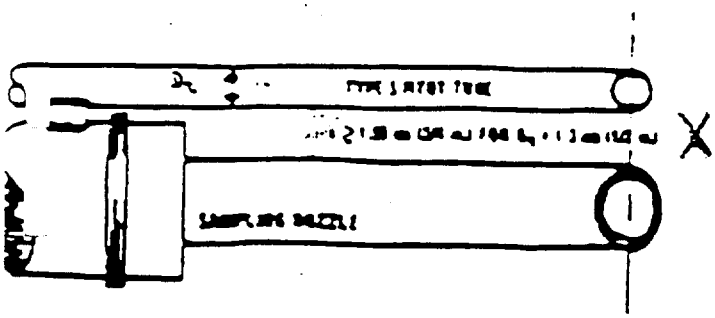

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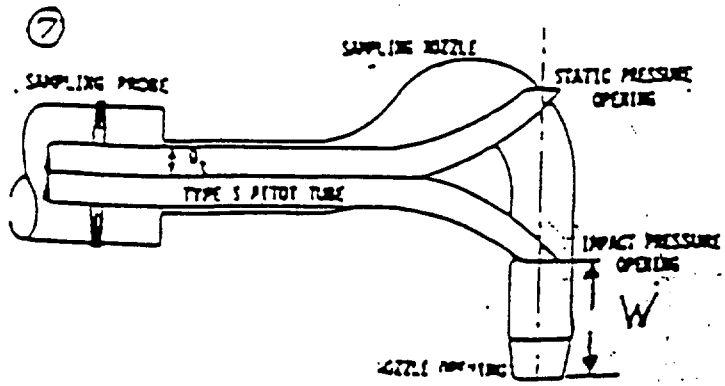
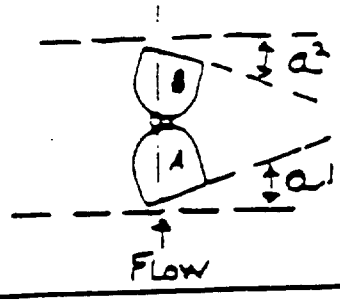


GEOMETRIC PITOT CALIBRATION

Caliper # VCF-59 | Probe #: S-2
Precheck ✓ | Date: 3-4-94
Post Check | Initials: [illegible]

①

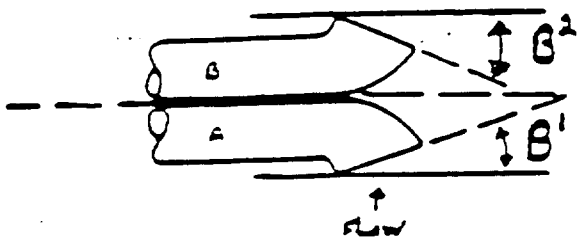


a^1 = 0°
a^2 = 5.0°
$a^1, a^2 = <10°$

B^1 = 4.0°
B^2 = 0°
$B^1, B^2, = <5°$

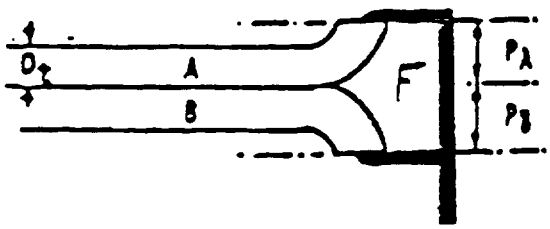
F = 1.000"

②



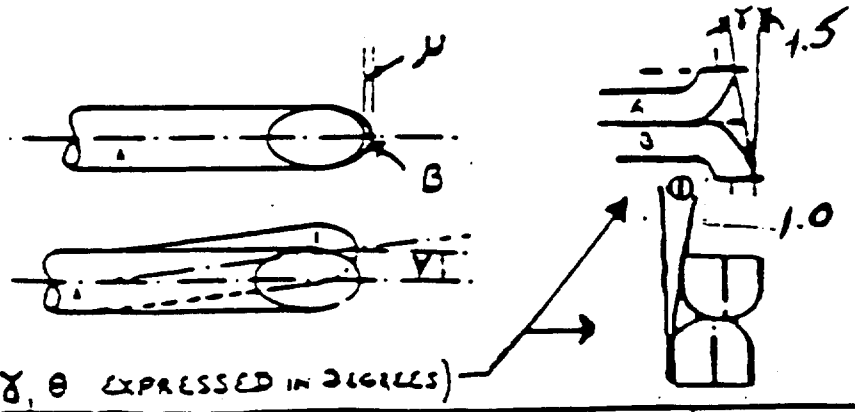
μ = 0.0262 | μ = ≤ 0.1250" (μ = F TAN γ)
V = 0.0174 | V = ≤0.03125" (V = F TAN θ)
W = 0.136 | W ≥ 0"
X = 1.155 | X ≥ 0.750" (3/4" using 1/2" nozzle)
Y = 6.000 | Y ≥ 3.0"
Z = 3.00" | Z > 2.0"
D_t = 0.376 | D_t > .1875"

③

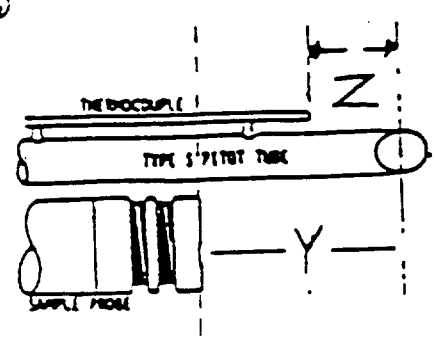


1.05 D_t < d < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

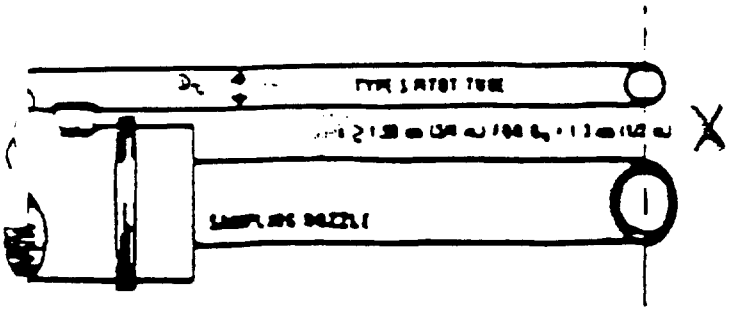
④



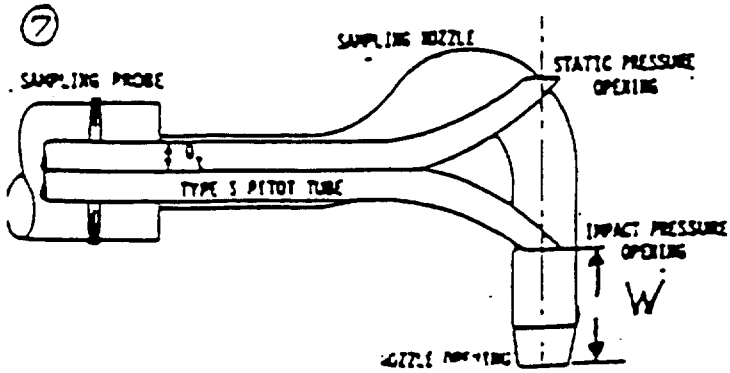
⑥



⑤



⑦

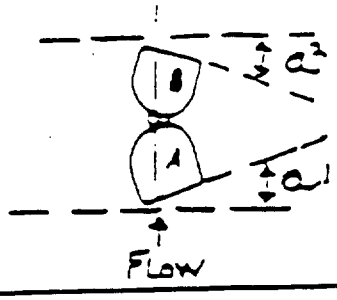


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck
Post Check ✓

Probe #: 52
Date: 03-22-94
Initials: RPC

①

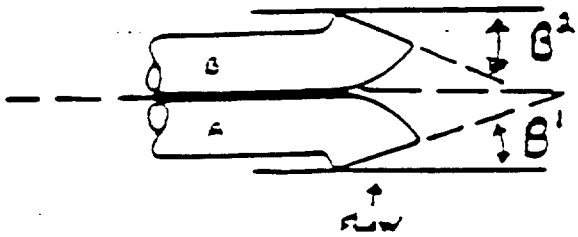


a¹ = 0°
a² = 4°
a¹, a² = <10°

B¹ = 4°
B² = 0°
B¹, B² = <5°

F = 1.000"

②



μ = 0.0174 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0174 — V = ≤0.03125" (V = F TAN θ)

W = .30 — W ≥ 0"

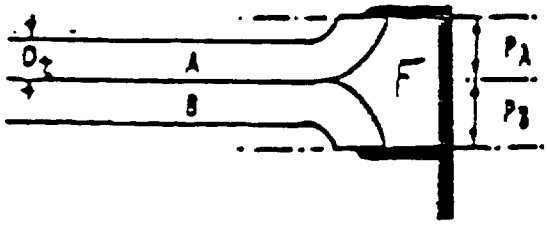
X = .800 — X ≥ 0.750" (3/4" using 1/2" nozzle)

Y = 6.00 — Y ≥ 3.0"

Z = 3.00 — Z > 2.0"

D_t = .375 — D_t > .1875"

③

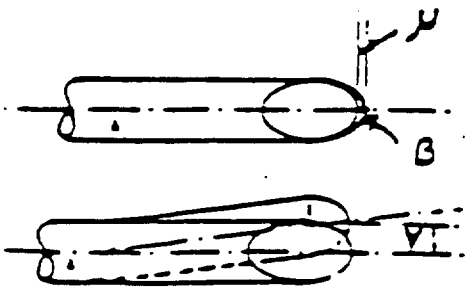


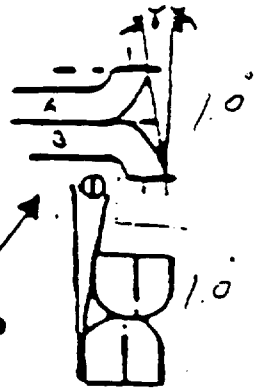
1.05 D_t < A < 1.50 D_t

P_A = P_B

2.10 D_t < A < 3.00 D_t

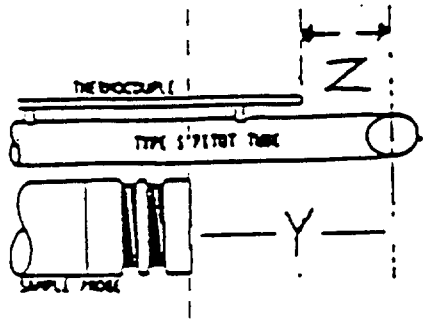
④



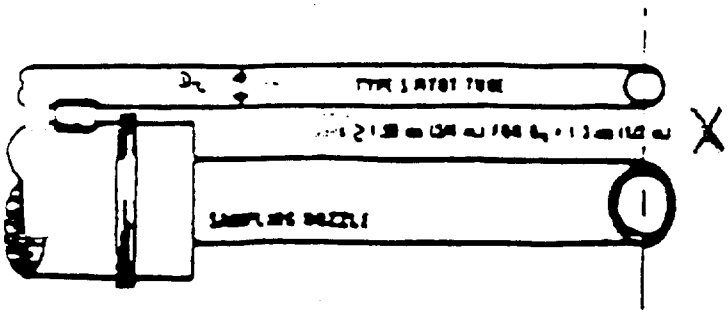


(γ, θ EXPRESSED IN DEGREES)

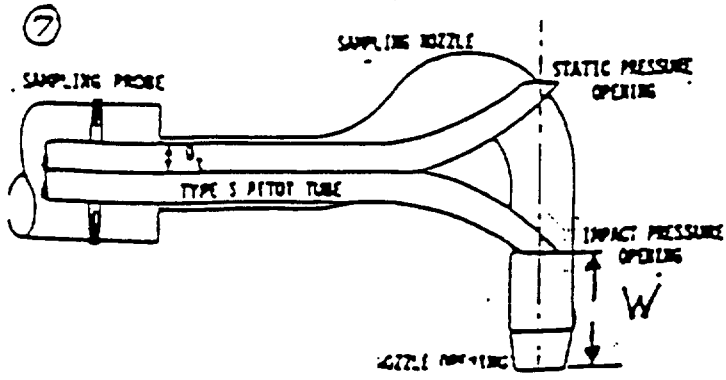
⑥



⑤



⑦

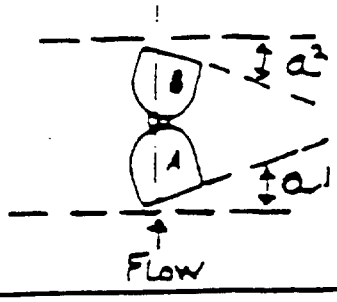


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck ✓
Post Check

Probe #: 5-3
Date: 3-4-94
Initials: TGM

①

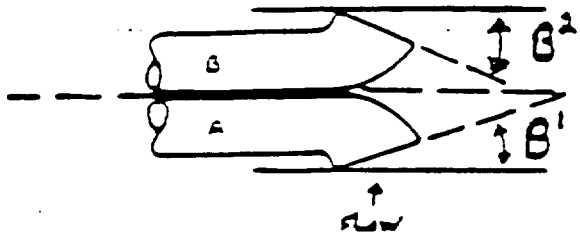


a^1 = 0°
a^2 = 2.0°
a^1, a^2 = <10°

B^1 = 1.0°
B^2 = 1.0°
B^1, B^2 = <5°

F = 0.880"

②



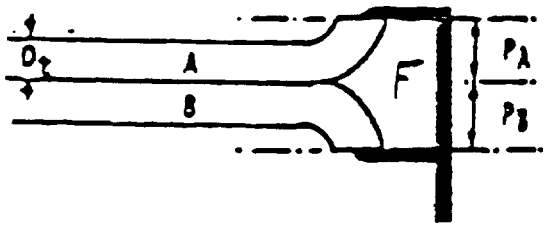
μ = 0.0154 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0154 — V = ≤0.03125" (V = F TAN θ)

W = 0.745 — W ≥ 0"

X = 1.150 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



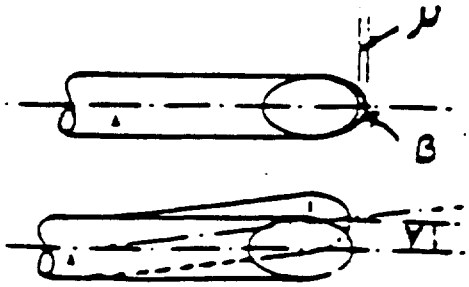
1.05 D_t < A < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

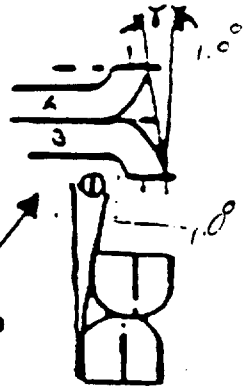
Y = 3.452 — Y ≥ 3.0"

Z = 3.0 — Z > 2.0"

D_t = .373 — D_t > .1875"

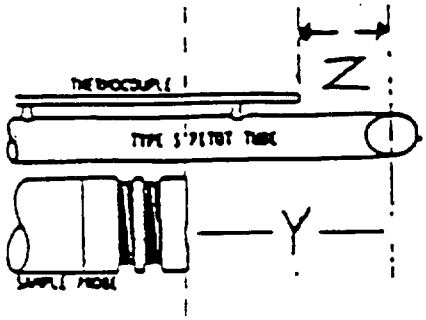
④



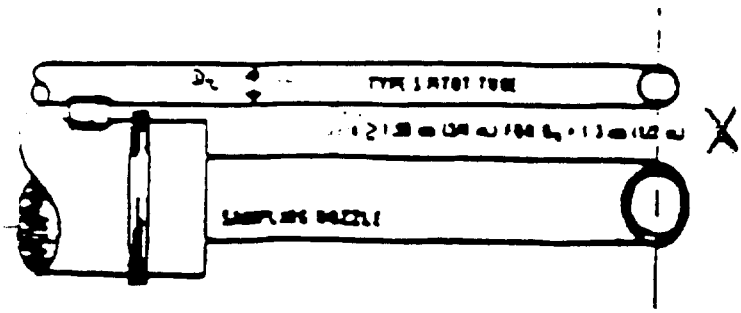


(γ, θ EXPRESSED IN DEGREES)

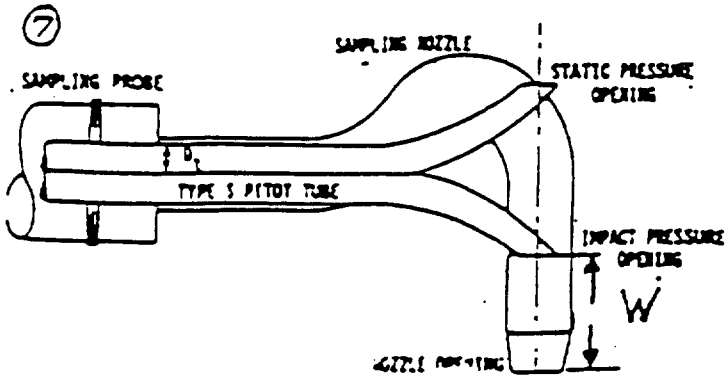
⑥



⑤



⑦



CC-10295 REV. 1161
03.00T.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 A.M.

Date 94-03-08 A.M.

8AM → 4pm
18 ovens pushed

BATTERY NO. 8-B's

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					I Don't
2	5	14	6	01	know
4	5	25	5	50	why!
6	5	36	6	12	
8	5	48	6	22	
10	5	59	6	30	
12	6	10	6	38	Double
14	6	15	6	48	"
16	6	26	6	55	Double
18	6	32	7	03	→ 6 Lakey
20	6	45	7	07	Double
22	6	50	7	15	"
24	7	01	8	16	
26	7	13	8	32	
28	8	22	8	43	
30	8	34	8	55	
C-1	8	45	9	06	
2					

BATTERY NO. 7-A's

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	8	57	9	30	
3	9	08	9	49	
5	9	19	9	56	
7	9	36	10	06	
9	9	47	10	12	
11	9	58	10	19	
13	10	09	10	30	
15	10	21	10	41	
17	10	32	10	47	
19	10	43	10	52	one of 6
21	10	49	11	00	" " 5
23	10	54	11	05	" " 4
25	11	02	11	11	" " 3
27	11	07			" " 2
29	11	13			" " 1
31					
2					
4			12	22	
6			12	33	
8	12	14	12	41	Double
10	12	20	12	54	"
12	12	31	1	05	Double
14	12	37	1	13	"
16	12	47	1	23	
18	12	59	1	30	
20	1	10	1	38	
22	1	21	1	46	
24	1	33	1	53	
26	1	44	2	03	
28	1	55	2	09	
30	2	12	2	20	
1					
2					

BATTERY NO. 7-B's

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	2	23	2	31	
3	2	34	2	41	
5	2	44	2	52	
7	2	55	3	02	
9	3	06	3	13	
11	3	17	3	23	
13	3	27	3	34	
15	3	39	3	45	
17	3	51	3	57	
19	4	02	4	09	
21	4	13	4	20	
23	4	23	4	32	
25	4	34	4	47	
27	4	45	4	59	
29	5	01	5	21	
31	12	04	12	11	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

REMARKS: 16/16 27/27 16/16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	7	5		6-7	6	7	39-38
1-2	5	7	12-12	7-8	2	3	41-41
2-3	5	6	17-18	8-9	4	4	
3-4	5	6	22-24	9-10	5	4	
4-5	5	5	27-29	10-11	6	7	
5-6	6	2		11-12	8	3	
	33	31			26	28	

Total Ovens Pushed 59

Total Ovens Charged 59

Pusherman

Battery Foreman

CC-10295 REV. 1161
03.001.002D

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 M

Date 3-8-94 PM

8AM → 4PM

18 ovens pushed

BATTERY NO. B Son 8

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	43	4	02	
3	3	55	4	21	
5	4	05	4	32	
7	4	24	4	42	
9	4	35	4	52	
11	4	44	5	02	
13	4	55	5	12	
15	5	05	5	25	
17	5	15	5	35	
19	5	27	5	45	
21	5	37	6	09	
23	5	47	6	20	
25	6	13	6	35	
27	6	23	6	44	
29	6	38	6	49	
31	6	47	7	01	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2	6	52	7	07	

BATTERY NO. A Son 7

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27			12	00	
29			12	16	
31	12	02	12	32	
2	7	04	7	17	
4	7	10	7	22	
6	7	20	7	32	
8	7	25	7	42	
10	7	35	7	47	
12	7	45	7	55	
14	7	50	8	05	
16	7	58	8	15	
18	8	08	8	21	
20	8	18	8	41	
22	8	24	8	47	
24	8	44	8	56	
26	8	50	9	11	
28	8	58	9	22	
30	9	14	9	32	
1					
2					

BATTERY NO. B Son 7

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	9	26	9	42	
3	9	35	9	52	
5	9	45	10	02	
7	9	55	10	11	
9	10	05	10	20	
11	10	14	10	29	
13	10	23	10	40	
15	10	32	11	02	
17	10	43	11	12	
19	11	00	11	22	
21	11	10			
23	11	20			
25					
27					
29					
31					
2	12	18	1	03	PB
4	12	49	1	18	PB
6	1	05	1	31	PB
8	1	20	1	43	PB
10	1	33	1	55	PB
12	1	45	2	09	
14	1	58	2	23	
16	2	11	2	24	
18	2	25	3	18	
20	2	36	3	29	
22	2	47	3	35	
24	2	58	3	41	
26	3	10	3	47	
28	3	21	3	53	
30	3	31	3	59	
1					
2					

REMARKS:

1 / 16 / 21 / 2

Condition of Signals | Condition of Pusher

3-8-94

8AM → 4pm

77 total ovens pushed

⇒ 9.63 ovens/hr

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	3	3		6-7	5	5	
1-2	5	5		7-8	8	8	
2-3	5	3		8-9	6	6	
3-4	5	7		9-10	5	5	
4-5	5	5		10-11	5	5	
5-6	5	5		11-12	3	3	
	28	28			32	32	

Total Ovens Pushed 60

Total Ovens Charged 60

Pusherman

Battery Foreman D [illegible]

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 M

Date 3-9-94

8AM 7 4pm

16 ovens pushed

BATTERY NO. A59

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	40	11	00	HPPB
3	10	52	11	14	HPPB
5	7	39	9	48	
7	11	10	11	31	P.B.
9	11	21	11	43	
11	11	33	11	54	P.B.
13	11	45			
15	11	56			
17					
19					
21					
23					
25					
27					
29					
31					
2	12	46	1	09	
4	12	58	1	19	
6	1	12	1	31	
8	1	22	1	42	
10	1	34	1	55	
12	1	45	2	12	
14	—	—	—	—	PASS UP
16	1	58	2	30	
18	—	—	—	—	PASS UP
20	2	15	2	42	
22	—	—	—	—	PASS UP
24	2	33	2	52	
26	2	45	3	02	
28	2	55	3	17	
30	3	05	3	32	
1					
2					

BATTERY NO. B59

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	20	3	49	
3	3	35	4	04	
5	3	52	4	15	
7	4	07	4	32	
9	4	18	4	43	
11	—	—	—	—	PASS UP
13	4	35	4	55	
15	4	46	5	06	
17	4	58	5	17	
19	5	09	5	27	
21	5	20	5	37	
23	5	30	5	47	
25	5	40	6	00	
27	5	50	6	10	
29	6	02	6	20	PB
31	6	13	6	25	PB
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
C2	6	23	6	37	

BATTERY NO. A58

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21			12	00	
23			12	12	
25	12	02	12	22	
27	12	15	12	32	
29	12	25	12	43	
31	12	35	12	55	
2	6	28	6	49	PB
4	6	40	7	00	
6	6	52	7	12	
8	7	03	7	24	
10	7	15	8	11	
12	7	27	8	23	
14	8	13	8	34	
16	8	25	8	45	
18	8	36	8	56	
20	8	49	9	06	
22	9	39	9	55	
24	9	51	10	10	
26	10	01	10	21	
28	10	12	10	31	
30	10	23	10	39	
1					
2					

REMARKS:

20 18 16 16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	6	6		6-7	6	6	
1-2	5	5		7-8	4	3	
2-3	4	4		8-9	4	5	
3-4	4	4		9-10	2	3	
4-5	5	5		10-11	5	4	
5-6	5	5		11-12	5	5	
	29	29			26	26	

Total Ovens Pushed 55

Total Ovens Charged 55

Pusherman

Battery Foreman D Sowbray

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 A. M.

Date 94-03-09 A.M

8AM → 4pm

16 ovens pushed

BATTERY NO. 8-B's

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
[illegible]	10	46	11	01	
[illegible]	10	58	11	13	
[illegible]	11	03	11	25	
[illegible]	11	15	11	37	
9	11	27	11	45	
11	11	39			
13	11	50			
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	12	55	1	19	
4	1	06	1	33	
6	1	17	1	45	
8	1	28	1	57	
10	1	39	2	08	
12	1	49	2	18	Double
14	1	54	2	30	"
16	2	06	2	43	Double
18	2	11	2	56	"
20	2	22	3	12	Double
22	2	27	3	19	"
24	2	38	3	26	
26	2	48	3	34	
28	2	59	3	44	
30	3	10	3	51	Double
C-1	3	16	4	00	"
2					

BATTERY NO. 7-A's

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	30	4	04	
3	3	46	4	17	
5	4	02	4	26	
7	4	13	4	34	
9	4	24	4	41	Double
11	4	30	4	47	"
13	4	42	4	58	
15	4	53	5	06	
17	5	04	5	18	
19	5	14	5	27	
21	5	25	5	40	
23	5	35	5	51	
25	5	46	6	01	
27	5	56	6	11	
29	6	07	6	21	
31	6	18	6	28	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. 7-B's.

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21			12	14	
23			12	28	
25	12	08	12	42	
27	12	18	12	49	
29	12	30	1	03	
31	12	40	1	10	
2	6	34	6	43	
4	6	45	6	54	
6	6	56	7	04	
8	7	07	7	13	
10	7	17	8	18	
12	7	27	8	29	
14	8	20	8	40	EM
16	8	31	8	50	EM
18	8	42	8	59	EM
20	9	34	9	43	EM
22	9	45	9	54	EM
24	9	56	10	05	
26	10	07	10	16	
28	10	18	10	27	
30	10	29	10	36	
1					
2					

REMARKS: 23/21 16/16 19/21

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	4		6-7	5	6	39-40
1-2	6	6	11-10	7-8	3	2	42-42
2-3	7	5	18-15	8-9	3	5	
3-4	4	6	22-21	9-10	3	2	
4-5	6	8	28-29	10-11	5	4	
5-6	6	5		11-12	5	5	
	34	34			24	24	

Total Ovens Pushed 58

Total Ovens Charged 58

Pusherman

Battery Foreman D. Sandner

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 P. M.

Date 03-09-94

8AM → 4pM

20 ovens pushed

BATTERY NO. A-9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13			12	05	
15			12	16	
17	12	07	12	27	
19	12	18	12	39	
21	12	29	12	51	
23	12	41	1	00	
25	12	53	1	10	P.B.
27	1	04	1	20	
29	1	23	1	30	
31	1	35	1	49	
2	8	18	8	40	
4	8	30	8	52	
6	8	42	9	04	
8	8	54	9	16	
10	9	06	9	34	
12	9	18	9	52	
14	1	16	1	28	
16	9	36	10	10	
18	1	46	2	05	
20	9	54	10	22	
22	2	07	2	15	
24	10	12	10	34	PB
26	10	24	10	46	
28	10	36	11	00	
30	10	48	11	10	PB
1					
2					

BATTERY NO. B-9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	[illegible]	[illegible]	[illegible]	[illegible]	
3	[illegible]	[illegible]	[illegible]	34	
5	11	24			
7	1	36			
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	1	57	2	23	
4	2	13	2	34	
6	2	25	2	45	
8	2	36	3	00	
10	2	47	3	14	P.B.
12	3	05	3	25	
14	3	16	3	37	
16	3	27	4	06	
18	3	39	[illegible]	[illegible]	
20	4	08	4	28	
22	4	19	4	39	
24	4	30	4	50	
26	4	41	5	01	
28	4	52	5	07	
30	5	03	5	18	
C 1	5	09	5	29	
2					

BATTERY NO. A-8					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	20	[illegible]	[illegible]	
3	[illegible]	31	[illegible]	[illegible]	
5	[illegible]	42	6	02	
7	5	53	6	13	
9	6	04	6	24	
11	6	15	6	35	
13	6	26	6	[illegible]	
15	6	37	[illegible]	[illegible]	
17	[illegible]	[illegible]	[illegible]	[illegible]	
19	[illegible]	[illegible]	[illegible]	[illegible]	
21	[illegible]	[illegible]	[illegible]	[illegible]	
23	[illegible]	[illegible]	[illegible]	[illegible]	
25	[illegible]	[illegible]	[illegible]	[illegible]	PB
27	[illegible]	[illegible]	[illegible]	[illegible]	
29	[illegible]	[illegible]	[illegible]	[illegible]	
31	8	08	[illegible]	[illegible]	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

REMARKS:

23 25 20 18 16 16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		6-7	5	5	
1-2	6	6		7-8	5	5	
2-3	5	5		8-9	6	6	
3-4	4	4		9-10	4	4	
4-5	5	5		10-11	4	4	
5-6	6	6		11-12	4	4	
	31	31			28	28	

Total Ovens Pushed 59

Total Ovens Charged 59

Pusherman

Battery Foreman A. Zacury

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 M

Date 3-9-94 P.M.

8AM → 4pm

19 ovens pushed

BATTERY NO. B s on 8					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11			12	00	
13			12	11	
15	12	02	12	22	
17	12	13	12	33	
19	12	24	12	45	
21	12	35	12	56	
23	12	47	1	08	
25	12	58	1	28	
27	1	10	1	38	
29	1	30	1	50	
31	1	40	2	00	
2	7	55	8	16	
4	8	10	8	27	
6	8	19	8	37	
8	8	30	8	45	
10	8	39	8	52	
12	8	48	9	03	
14	8	55	9	08	
16	9	05	9	20	
18	9	11	9	27	
20	9	23	9	37	
22	9	30	10	02	
24	9	40	10	12	
26	10	05	10	22	
28	10	15	10	27	
30	10	25	10	47	
C1	10	30	10	52	
C2	1	52	2	13	
REMARKS:	26/	28			

BATTERY NO. A s on 7					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	50	11	13	
3	11	04	11	23	
5	11	15			
7	11	25			
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	2	02	2	28	
4	2	19	2	40	
6	2	30	2	52	
8	2	42	3	08	
10	2	54	3	19	
12	3	10	3	30	
14	3	21	3	41	
16	3	32	4	12	
18	3	43	4	22	
20	4	15	4	32	
22	4	25	4	42	
24	4	35	4	53	
26	4	45	5	09	
28	4	56	5	19	
30	5	12	5	30	
1					
2					
	19/	17			

BATTERY NO. B s on 7					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	22	5	40	
3	5	32	5	50	
5	5	42	6	00	
7	5	52	6	10	
9	6	03	6	17	
11	6	13	6	27	
13	6	20	6	37	
15	6	30	6	48	
17	6	40	7	01	
19	6	50	7	07	
21	7	04	7	17	
23	7	11	7	28	
25	7	20	7	42	
27	7	31	7	52	
29	7	42	8	07	
31					
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					
	15/	15			

3-9-94

8AM → 4pm

71 total ovens pushed

⇒ 8.88 ovens/hr

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	6	6	
1-2	4	4	
2-3	5	5	
3-4	4	4	
4-5	5	5	
5-6	5	5	
	29	29	

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
6-7	6	6	
7-8	6	6	
8-9	6	6	
9-10	5	5	
10-11	5	6	
11-12	3	2	
	31	31	

Total Ovens Pushed	60
Total Ovens Charged	60
Pusherman	
Battery Foreman	A. Zaury

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3
12 Hrs. Beginning 12:00 AM
Date 3-10-94

8AM → 4pm
21 ovens pushed

BATTERY NO. A S 9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	30	5	58	
3	5	42	6	10	PB
5	10	07	10	19	PASS UP
7	6	—	6	22	PB
9	6	12	6	34	PB
11	6	24	6	46	PB
13	6	36	6	58	
15	6	48	7	10	
17	7	—	7	22	
19	7	12	7	34	
21	7	24	7	46	
23	7	36	8	12	
25	7	48	8	24	
27	8	14	8	35	
29	8	26	8	49	
31	8	37	9	08	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B S 9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5			12	09	
7			12	20	
9	12	11	12	31	
11	12	22	12	42	
13	12	33	12	53	
15	12	44	1	03	
17	12	55	1	14	
19	1	05	1	24	PB
21	1	16	1	34	
23	1	26	1	46	
25	1	36	1	58	
27	1	48	2	10	
29	2	—	2	22	
31	2	12	2	28	
2	8	57	9	20	
4	9	10	9	31	
6	9	22	9	43	
8	9	33	9	53	
10	9	45	10	13	
12	9	55	10	24	
14	10	15	10	35	
16	10	26	10	46	
18	10	37	10	57	
20	10	48	11	08	
22	10	59	11	19	
24	11	10	11	30	
26	11	21	11	41	
28	11	32	11	50	
30	11	43	11	57	
C-1	4	48			
C2	2	24	2	40	

BATTERY NO. A S 8					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	11	59			
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	2	30	2	52	
4	2	42	3	04	
6	2	54	3	16	
8	3	06	3	28	
10	3	18	3	40	
12	3	30	3	52	
14	3	42	4	04	
16	3	54	4	16	
18	4	06	4	28	
20	4	18	4	40	
22	4	30	4	52	
24	4	42	5	04	
26	4	54	5	16	
28	5	06	5	28	
30	5	18	5	40	
1					
2					

REMARKS:

16 16 29 30 16 15

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		6-7	5	5	
1-2	5	6		7-8	5	4	
2-3	6	5		8-9	4	4	
3-4	5	5		9-10	5	5	
4-5	5	5		10-11	6	6	
5-6	4	5		11-12	6	6	
	30	31			31	30	

Total Ovens Pushed 61
Total Ovens Charged 61

Pusherman

Battery Foreman R. Smith

CC-10285 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 M

Date 3-10-84 A.M.

8AM → 4pm
19 ovens pushed

BATTERY NO. B-8					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	14	5	29	
3	5	25	5	40	
5	5	31	5	51	
7	5	42	6	02	
9	5	53	6	13	
11	6	04	6	24	
13	6	15	6	35	
15	6	26	6	47	
17	6	37	7	00	
19	6	49	7	11	
21	7	02	7	22	
23	7	13	8	18	Em
25	7	24	8	29	Em
27	8	20	8	[illegible]	Em
29	8	31	8	49	Em
31	8	45	9	00	Em
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
C2	5	51	9	12	

BATTERY NO. A-7					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5			12	13	
7			12	25	
9	12	15	12	35	
11	12	27	12	45	
13	12	37	12	57	
15	12	47	1	07	
17	12	59	1	17	
19	1	09	1	28	
21	1	19	1	39	
23	1	30	1	49	
25	1	41	2	01	
27	1	51	2	11	
29	2	03	2	27	
31	2	13	2	37	
2	9	03	9	25	Em
4	9	16	9	37	P.B. Em
6	9	27	9	49	Em
8	9	39	10	00	Em
10	9	51	10	18	Em
12	10	02	10	29	
14	10	20	10	40	P.B.
16	10	31	10	51	
18	10	42	11	02	
20	10	53	11	13	
22	11	04	11	24	
24	11	15	11	35	
26	11	26	11	53	
28	11	37			
30	11	55			
1					
2					

BATTERY NO. B-7					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31	12	05	12	20	
2	2	29	2	45	Em
4	2	39	3	00	Em
6	2	51	3	11	Em
8	3	02	3	22	Em
10	3	13	3	33	Em
12	3	24	3	44	
14	3	35	3	55	
16	3	46	4	06	
18	3	57	4	17	
20	4	08	4	28	
22	4	19	4	39	
24	4	30	4	50	
26	4	41	5	01	
28	4	52	5	12	
30	5	03	5	23	
1					
2					

REMARKS: 17/17 27/27 16/16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	6	6		6-7	5	5	
1-2	5	5		7-8	3	3	
2-3	5	5		8-9	4	4	
3-4	6	6		9-10	5	5	
4-5	5	5		10-11	5	5	
5-6	6	6		11-12	5	5	
	33	33			27	27	

Total Ovens Pushed 60

Total Ovens Charged 60

Pusherman

Battery Foreman R E Smith

CC-1J295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3
12 Hrs. Beginning 12:00 AM
Date 03-10-94

8AM → 4pm

20 ovens pushed

BATTERY NO. A-9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	2	51	3	12	
4	3	04	3	22	
6	3	14	3	34	
8	3	25	4	08	
10	3	36	4	18	
12	4	10	4	29	
14	4	20	4	40	
16	4	31	4	51	
18	4	42	5	03	
20	4	53	5	14	
22	5	05	5	22	
24	5	16	5	36	
26	5	27	5	49	
28	5	38	6	05	
30	5	49	6	16	
1					
2					

BATTERY NO. B-9					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	6	07	6	27	
3	6	18	6	33	
5	6	29	6	49	
7	6	40	7	00	
9	6	51	7	11	
11	7	02	7	22	
13	7	13	7	32	
15	7	24	7	41	
17	7	35	7	55	PB
19	7	46	7	56	
21	7	57	8	53	
23	8	08	9	03	
25	8	55	9	13	
27	9	05	9	23	
29	9	15	9	34	
31	9	26	9	39	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
C-1			12	08	
C-2	9	36	9	54	

BATTERY NO. A-8					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1			12	18	
3	12	10	12	35	
5	12	25	12	46	
7	12	37	12	58	
9	12	48	1	08	
11	1	00	1	19	
13	1	10	1	29	
15	1	21	1	39	
17	1	31	1	49	
19	1	41	2	00	
21	1	51	2	10	
23	2	02	2	20	
25	2	12	2	31	
27	2	24	2	41	
29	2	34	2	53	
31	2	39	3	02	
2	9	47	10	12	
4	9	58	10	23	
6	10	14	10	33	
8	10	25	10	43	
10	10	35	10	54	
12	10	45	11	01	
14	10	56	11	12	
16	11	03	11	22	
18	11	14	11	32	
20	11	24	11	42	
22	11	34	11	53	
24	11	44			
26	11	55			
28					
30					
1					
2					

REMARKS:

15 15 17 18 28/28 29

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	4	5		6-7	5	5	
1-2	6	5		7-8	6	6	
2-3	6	6		8-9	2	2	
3-4	4	4		9-10	6	6	
4-5	5	5		10-11	5	5	
5-6	5	5		11-12	4	6	
	30	30			30	30	

Total Ovens Pushed

Total Ovens Charged

Pusherman

Battery Foreman A. Zacury

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 M

Date 3-10-94 P.M

BATTERY NO. B SON 8

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	3	04	3	26	
4	3	16	3	37	
6	3	25	4	03	
8	3	35	4	12	
10	4	05	4	24	
12	4	15	4	33	
14	4	27	4	44	
16	4	36	5	00	
18	4	47	5	09	
20	5	03	5	20	
22	5	13	5	33	
24	5	23	5	43	
26	5	35	5	52	
28	5	45	6	00	
30	5	55	6	09	
1	6	03	6	20	
2					

REMARKS: 16/16

BATTERY NO. A SON 7

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	6	12	6	27	
3	6	23	6	46	
5	6	30	6	52	
7	6	49	7	03	
9	6	55	7	13	
11	7	06	7	24	
13	7	16	7	35	
15	7	27	7	41	
17	7	38	7	46	
19	7	49	7	53	
21	7	56	8	49	
23	8	52	9	00	
25	9	03	9	08	
27	9	11	9	19	
29	9	22	9	29	
31	9	32	9	52	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28			12	03	
30			12	14	
1					
2					

REMARKS: 16/18

BATTERY NO. B SON 7

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	12	05	12	30	
3	12	16	12	41	
5	12	32	12	52	
7	12	43	1	03	
9	12	54	1	14	
11	1	05	1	25	
13	1	16	1	36	
15	1	27	1	47	
17	1	38	1	55	
19	1	49	2	00	
21	2	01	2	21	
23	2	12	2	32	
25	2	23	2	44	
27	2	34	2	50	
29	2	52	3	09	
31	1/4	55	0	17	
2	9	55	10	20	
4	10	12	10	29	
6	10	23	10	37	
8	10	32	10	50	
10	10	40	11	00	
12	10	53	11	09	
14	11	03	11	21	
16	11	12	11	27	
18	11	22	11	37	
20	11	30	11	45	
22	11	40	11	54	
24	11	48			
26	11	57			
28					
30					
1					
2					

REMARKS: 28/28

8AM → 4PM
19 ovens pushed

3-10-94
8AM → 4PM
79 total ovens pushed
⇒ 9.88 ovens/hr

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		6-7	6	6	
1-2	5	6		7-8	6	6	
2-3	5	5		8-9	1	1	
3-4	4	3		9-10	5	5	
4-5	5	5		10-11	5	5	
5-6	6	6		11-12	7	7	
	30	30			36	30	

Total Ovens Pushed 60

Total Ovens Charged 60

Pusherman

Battery Foreman

PUSHING SCHEDULE

Tuesday, March 8, 1994 Turn 1
Batteries: 7-9_2

S	#	Oven	Last Pushed	Earliest	Desired	Latest
1		A8 /7	18:57	11:38am	12:08am	12:18am
2		B31/7	19:03	11:57am	12:06am	12:16am
		B10/9	19:03	12:02am	12:12am	12:22am
		A10/7	19:03	12:08am	12:16am	12:26am
5		B12/9	19:02	12:14am	12:24am	12:34am
6		A12/7	19:02	12:20am	12:30am	12:40am
7		A14/7	19:02	12:26am	12:36am	12:46am
		B16/9	19:02	12:32am	12:42am	12:52am
		A16/7	19:02	12:38am	12:48am	12:58am
10		B18/9	19:02	12:44am	12:54am	1:04am
11		A18/7	19:02	12:50am	1:00am	1:10am
		B20/9	19:02	12:56am	1:06am	1:16am
		A20/7	19:02	1:02am	1:12am	1:22am
		B22/9	19:02	1:08am	1:18am	1:28am
14		A22/7	19:03	1:15am	1:25am	1:35am
15		B24/9	19:03	1:21am	1:31am	1:41am
16		A24/7	19:03	1:27am	1:37am	1:47am
		B26/9	19:02	1:33am	1:43am	1:53am
		A26/7	19:02	1:39am	1:49am	1:59am
19		B28/9	19:02	1:45am	1:55am	2:05am
20		A28/7	19:02	1:51am	2:01am	2:11am
21		B30/9	19:02	1:57am	2:07am	2:17am
		C1 /9	19:02	2:03am	2:13am	2:23am
		A30/7	19:02	2:09am	2:19am	2:29am
24		A1 /8	19:02	2:15am	2:25am	2:35am
25		B1 /7	19:02	2:21am	2:31am	2:41am
		A3 /8	19:02	2:27am	2:37am	2:47am
		B3 /7	19:03	2:34am	2:44am	2:54am
		A5 /8	19:03	2:40am	2:50am	3:00am
29		B5 /7	18:56	2:46am	2:56am	3:06am
30		A7 /8	18:56	2:52am	3:02am	3:12am
		B7 /7	18:56	2:58am	3:08am	3:18am
		A9 /8	18:58	3:04am	3:14am	3:24am
		B9 /7	18:44	3:10am	3:20am	3:30am
36		A11/8	18:44	3:16am	3:26am	3:36am
37		B11/7	18:44	3:22am	3:32am	3:42am
		A13/8	18:44	3:28am	3:38am	3:48am
		B13/7	18:44	3:34am	3:44am	3:54am
41		A15/8	18:44	3:40am	3:50am	4:00am
42		B15/7	18:44	3:46am	3:56am	4:06am
43		A17/8	18:45	3:53am	4:03am	4:13am
		B17/7	18:44	3:59am	4:09am	4:19am
		A19/8	18:44	4:05am	4:15am	4:25am
44		B19/7	18:44	4:11am	4:21am	4:31am
45		A21/8	18:44	4:17am	4:27am	4:37am
		B21/7	18:44	4:23am	4:33am	4:43am
		A23/8	18:44	4:29am	4:39am	4:49am
		B23/7	18:44	4:35am	4:45am	4:55am
49		A25/8	18:44	4:41am	4:51am	5:01am
50		B25/7	18:44	4:47am	4:57am	5:07am
		A27/8	18:44	4:53am	5:03am	5:13am
		B27/7	18:44	4:59am	5:09am	5:19am
		A29/8	18:44	5:05am	5:15am	5:25am
54		B29/7	18:45	5:12am	5:22am	5:32am
55		C1 /8	18:44	5:18am	5:28am	5:38am
		A2 /9	18:44	5:24am	5:34am	5:44am
		B2 /8	18:44	5:30am	5:40am	5:50am
		C4 /7	18:44	5:36am	5:46am	5:56am
59		A4 /9	18:44	5:42am	5:52am	6:02am
60		B4 /8	18:44	5:49am	5:59am	6:09am
		A6 /9	18:44	5:54am	6:04am	6:14am
		B6 /8	18:44	6:00am	6:10am	6:20am
		C8 /7	18:44	6:06am	6:16am	6:26am
64		A8 /9	18:44	6:12am	6:22am	6:32am
65		B8 /8	18:44	6:18am	6:28am	6:38am
		A10/9	18:44	6:24am	6:34am	6:44am
		B10/8	18:45	6:31am	6:41am	6:51am
69		A12/9	18:36	6:37am	6:47am	6:57am
70		B12/8	18:36	6:43am	6:53am	7:03am
		A14/9	18:36	6:49am	6:59am	7:09am
		B14/8	18:36	6:55am	7:05am	7:15am
		A16/9	18:36	7:01am	7:11am	7:21am
74		B16/8	18:37	7:07am	7:17am	7:27am
75		A18/9	18:36	7:13am	7:23am	7:33am
		B18/8	18:36	7:19am	7:29am	7:39am
		A20/9	18:36	7:25am	7:35am	7:45am
		B20/8	18:36	7:31am	7:41am	7:51am
79		A22/9	18:37	7:37am	7:47am	7:57am
80		B22/8	18:44	7:43am	7:53am	8:03am
		A24/9	18:44	7:49am	7:59am	8:09am

9/ -B14
A14
A18
A22

7/ -B31

B31/7 after A8/7

A14/9 after B26/8

PUSHING SCHEDULE

Tuesday, March 9, 1994 Turn 2
Batteries: 7-9_2

#	Oven	Last Pushed	Earliest	Desired	Latest
1	A28/9	18:32	7:00am	8:00am	8:20am
2	B28/6	18:32	7:07am	8:06am	8:12am
	A30/9	18:32	7:12am	8:12am	8:32am
	B30/8	18:32	7:16am	8:18am	8:40am
5	A18/9	18:32	8:14am	8:24am	8:47am
6	C1 /8	18:33	8:20am	8:30am	8:53am
	A22/9	18:44	8:12am	8:36am	9:01am
	B1 /9	18:45	8:33am	8:43am	9:08am
	A1 /7	18:45	8:37am	8:47am	9:14am
10	B3 /9	37:52	8:45am	8:55am	9:20am
11	A3 /7	37:52	8:51am	9:01am	9:26am
	B5 /9	37:52	8:57am	9:07am	9:32am
	A5 /7	37:52	9:03am	9:13am	9:38am
	B7 /9	37:53	9:12am	9:22am	9:45am
15	A7 /7	37:53	9:16am	9:26am	9:51am
16	B9 /9	37:53	9:22am	9:32am	9:57am
17	A9 /7	37:53	9:28am	9:38am	10:03am
	B11/9	37:53	9:34am	9:44am	10:09am
	A11/7	37:53	9:38am	9:50am	10:15am
20	B13/9	37:54	9:46am	9:56am	10:21am
21	A13/7	37:54	9:50am	10:03am	10:28am
	B15/9	37:55	9:59am	10:09am	10:34am
	A15/7	37:55	10:03am	10:15am	10:40am
24	B17/9	37:55	10:11am	10:21am	10:46am
25	A17/7	37:55	10:17am	10:27am	10:52am
26	B19/9	37:55	10:23am	10:33am	10:58am
	A19/7	37:56	10:30am	10:40am	11:06am
	B21/9	18:46	10:36am	10:46am	11:11am
	A21/7	18:47	10:42am	10:52am	11:17am
30	B23/9	18:47	10:45am	10:55am	11:23am
31	A23/7	18:47	10:54am	11:04am	11:29am
	B25/9	18:47	11:00am	11:10am	11:35am
	A25/7	18:47	11:06am	11:16am	11:41am
	B27/9	18:48	11:13am	11:23am	11:48am
35	A27/7	18:48	11:19am	11:29am	11:54am
	B29/9	18:48	11:25am	11:35am	12:00pm
	A29/7	18:48	11:31am	11:41am	12:06pm
	B31/9	18:48	11:37am	11:47am	12:12pm
40	A31/7	18:48	11:43am	11:53am	12:18pm
41	C2 /9	18:49	11:50am	12:00pm	12:25pm
	A2 /8	18:49	11:56am	12:06pm	12:31pm
	B2 /7	18:50	12:02pm	12:12pm	12:37pm
	A4 /8	18:50	12:09pm	12:19pm	12:43pm
46	B4 /7	18:50	12:14pm	12:24pm	12:49pm
47	A6 /8	18:50	12:20pm	12:30pm	12:55pm
48	B6 /7	38:03	12:26pm	12:36pm	1:01pm
	A8 /7	18:57	12:32pm	12:42pm	1:08pm
50	B10/9	38:12	12:37pm	12:47pm	1:14pm
	A8 /8	19:03	12:45pm	12:55pm	1:20pm
53	B14/9	38:19	12:51pm	1:01pm	1:26pm
54	A8 /7	19:09	12:57pm	1:07pm	1:32pm
	A10/8	19:09	1:03pm	1:13pm	1:38pm
	B18/7	19:09	1:07pm	1:17pm	1:44pm
58	A12/8	19:10	1:15pm	1:25pm	1:51pm
59	B22/7	19:10	1:22pm	1:32pm	1:57pm
60	A16/8	19:10	1:28pm	1:38pm	2:03pm
	B24/7	19:10	1:33pm	1:45pm	2:07pm
63	A18/8	19:11	1:40pm	1:50pm	2:15pm
64	B26/7	19:11	1:46pm	1:56pm	2:21pm
65	A15/8	19:12	1:52pm	2:02pm	2:28pm
	B28/7	19:12	1:58pm	2:08pm	2:34pm
	A22/8	19:12	2:05pm	2:15pm	2:40pm
	B30/7	19:12	2:11pm	2:21pm	2:46pm
70	A25/8	19:12	2:17pm	2:27pm	2:52pm
71	B32/7	19:12	2:23pm	2:33pm	2:58pm
	A27/8	19:12	2:29pm	2:39pm	3:04pm
	B34/7	19:13	2:36pm	2:46pm	3:10pm
	A29/8	19:13	2:42pm	2:52pm	3:16pm
77	B36/7	19:13	2:48pm	2:58pm	3:22pm
78	A31/8	19:13	2:54pm	3:04pm	3:28pm
	B38/7	19:13	3:00pm	3:10pm	3:34pm
	A33/8	19:14	3:06pm	3:16pm	3:40pm
	B40/7	19:14	3:12pm	3:22pm	3:46pm
82	A 9	19:15	3:18pm	3:28pm	3:52pm
83	B 9	19:15	3:24pm	3:34pm	3:58pm
	A 9	19:15	3:30pm	3:40pm	4:04pm
	B 9	19:15	3:36pm	3:46pm	4:10pm
87	A 9	19:15	3:42pm	3:52pm	4:16pm

+ A8/9 w B30/8
+ A22/9 w C1/8
+ B4/9 w A6/8
+ B18/9 w B6/7
+ B14/9 w A8/8
BANK A5/9

PUSHING SCHEDULE

Tuesday, March 8, 1994 Turn 3
Batteries: 7-9_2

Oven	Last Pushed	Earliest	Desired	Latest
B5 /8	19:16	3:50pm	4:00pm	4:10pm
B7 /9	19:16	3:56pm	4:06pm	4:16pm
B7 /8	19:16	4:02pm	4:12pm	4:22pm
B9 /9	19:16	4:08pm	4:18pm	4:28pm
B9 /8	19:16	4:14pm	4:24pm	4:34pm
B11/9	19:16	4:20pm	4:30pm	4:40pm
B11/8	19:17	4:26pm	4:36pm	4:46pm
B13/9	19:17	4:32pm	4:42pm	4:52pm
B13/8	19:17	4:38pm	4:48pm	4:58pm
B15/9	19:17	4:44pm	4:54pm	5:04pm
B15/8	19:17	4:50pm	5:00pm	5:10pm
B17/9	19:17	4:56pm	5:06pm	5:16pm
B17/8	19:17	5:02pm	5:12pm	5:22pm
B19/9	19:17	5:08pm	5:18pm	5:28pm
B19/8	19:17	5:14pm	5:24pm	5:34pm
B21/9	19:17	5:20pm	5:30pm	5:40pm
B21/8	19:17	5:26pm	5:36pm	5:46pm
B23/9	19:17	5:32pm	5:42pm	5:52pm
B23/8	19:17	5:38pm	5:48pm	5:58pm
B25/9	19:17	5:44pm	5:54pm	6:04pm
B25/8	19:18	5:50pm	6:00pm	6:10pm
B27/9	19:18	5:56pm	6:06pm	6:16pm
B27/8	19:18	6:02pm	6:12pm	6:22pm
B29/9	19:18	6:08pm	6:18pm	6:28pm
B29/8	19:18	6:14pm	6:24pm	6:34pm
B31/9	19:18	6:20pm	6:30pm	6:40pm
B31/8	19:18	6:26pm	6:36pm	6:46pm
C1 /9	19:19	6:32pm	6:42pm	6:52pm
B2 /9	19:18	6:38pm	6:48pm	6:58pm
A2 /7	19:18	6:44pm	6:54pm	7:04pm
A4 /7	19:19	6:50pm	7:00pm	7:10pm
B6 /9	19:18	6:56pm	7:06pm	7:16pm
A6 /7	19:18	7:02pm	7:12pm	7:22pm
A8 /7	19:18	7:08pm	7:18pm	7:28pm
B10/9	19:12	7:14pm	7:24pm	7:34pm
A10/7	19:12	7:20pm	7:30pm	7:40pm
B12/9	19:12	7:26pm	7:36pm	7:46pm
A12/7	19:12	7:32pm	7:42pm	7:52pm
A14/7	19:12	7:38pm	7:48pm	7:58pm
B15/9	19:12	7:44pm	7:54pm	8:04pm
A16/7	19:12	7:50pm	8:00pm	8:10pm
B18/9	19:12	7:56pm	8:06pm	8:16pm
A18/7	19:12	8:02pm	8:12pm	8:22pm
B20/9	19:12	8:08pm	8:18pm	8:28pm
A20/7	19:12	8:14pm	8:24pm	8:34pm
B22/9	19:11	8:20pm	8:30pm	8:40pm
A22/7	19:11	8:26pm	8:36pm	8:46pm
B24/9	19:11	8:32pm	8:42pm	8:52pm
A24/7	19:11	8:38pm	8:48pm	8:58pm
B26/9	19:11	8:44pm	8:54pm	9:04pm
A26/7	19:11	8:50pm	9:00pm	9:10pm
B28/9	19:11	8:56pm	9:06pm	9:16pm
A28/7	19:11	9:02pm	9:12pm	9:22pm
B30/9	19:11	9:08pm	9:18pm	9:28pm
A30/7	19:11	9:14pm	9:24pm	9:34pm
B1 /8	19:11	9:20pm	9:30pm	9:40pm
B1 /7	19:11	9:26pm	9:36pm	9:46pm
B3 /8	19:11	9:32pm	9:42pm	9:52pm
B3 /7	19:11	9:38pm	9:48pm	9:58pm
B5 /8	19:12	9:44pm	9:54pm	10:04pm
B5 /7	19:12	9:50pm	10:00pm	10:10pm
B7 /8	19:12	9:56pm	10:06pm	10:16pm
B7 /7	19:12	10:02pm	10:12pm	10:22pm
B9 /8	19:12	10:08pm	10:18pm	10:28pm
B9 /7	19:12	10:14pm	10:24pm	10:34pm
B11/8	19:12	10:20pm	10:30pm	10:40pm
B11/7	19:12	10:26pm	10:36pm	10:46pm
B13/8	19:12	10:32pm	10:42pm	10:52pm
B13/7	19:12	10:38pm	10:48pm	10:58pm
B15/8	19:12	10:44pm	10:54pm	11:04pm
B15/7	19:12	10:50pm	11:00pm	11:10pm
B17/8	19:12	10:56pm	11:06pm	11:16pm
B17/7	19:12	11:02pm	11:12pm	11:22pm
B19/8	19:12	11:08pm	11:18pm	11:28pm
B19/7	19:12	11:14pm	11:24pm	11:34pm
B21/8	19:12	11:20pm	11:30pm	11:40pm
B21/7	19:12	11:26pm	11:36pm	11:46pm
B23/8	19:12	11:32pm	11:42pm	11:52pm
B23/7	19:12	11:38pm	11:48pm	11:58pm
B25/8	19:12	11:44pm	11:54pm	12:04am
B25/7	19:12	11:50pm	12:00am	12:10am
B27/8	19:12	11:56pm	12:06am	12:16am
B27/7	19:12	12:02am	12:12am	12:22am
B29/8	19:12	12:08am	12:18am	12:28am
B29/7	19:12	12:14am	12:24am	12:34am
B31/8	19:12	12:20am	12:30am	12:40am
B31/7	19:12	12:26am	12:36am	12:46am

-B-4/9 -B-8/9 -B-14/9

PUSHING SCHEDULE

Wednesday, March 9, 1994 Turn 1
Batteries: 7-9_2

S	B	Oven	Last Pushed	Earliest	Desired	Latest
1		B25/9	19:09	11:50am	12:00am	12:10am
		B25/7	19:08	11:56am	12:05am	12:15am
		B27/8	19:08	12:01am	12:11am	12:21am
		B27/7	19:08	12:07am	12:17am	12:27am
3		B29/8	19:08	12:13am	12:23am	12:33am
4		B29/7	19:07	12:19am	12:29am	12:39am
		B31/8	19:07	12:25am	12:35am	12:45am
		B31/7	24:35	12:31am	12:41am	12:51am
		B2 /9	19:13	12:37am	12:47am	12:57am
14		B2 /8	19:13	12:43am	12:53am	1:03am
15		B4 /9	19:13	12:49am	12:59am	1:09am
		B4 /8	19:13	12:55am	1:05am	1:15am
		B6 /9	19:13	1:01am	1:11am	1:21am
		B6 /8	19:13	1:07am	1:17am	1:27am
15		B8 /9	19:12	1:12am	1:22am	1:32am
16		B8 /8	19:12	1:18am	1:28am	1:38am
		A19/9	19:12	1:24am	1:34am	1:44am
		B10/8	19:12	1:30am	1:40am	1:50am
		A12/9	19:12	1:36am	1:46am	1:56am
20		B12/9	19:11	1:42am	1:52am	2:02am
21		B14/8	19:11	1:48am	1:58am	2:08am
		A16/9	19:11	1:54am	2:04am	2:14am
		B16/9	19:11	2:00am	2:10am	2:20am
		B19/8	19:11	2:06am	2:16am	2:26am
25		A20/9	19:11	2:12am	2:22am	2:32am
26		B20/8	19:11	2:19am	2:29am	2:39am
		B22/8	19:11	2:25am	2:35am	2:45am
		A24/9	19:10	2:29am	2:39am	2:49am
		B24/8	19:10	2:35am	2:45am	2:55am
30		A26/9	19:10	2:41am	2:51am	3:01am
31		B26/8	19:10	2:47am	2:57am	3:07am
		A28/9	19:03	2:53am	3:03am	3:13am
		B28/8	19:03	2:59am	3:09am	3:19am
35		A30/9	19:03	3:05am	3:15am	3:25am
36		B30/8	19:03	3:11am	3:21am	3:31am
		A2 /9	18:57	3:17am	3:27am	3:37am
		B2 /8	18:58	3:23am	3:33am	3:43am
		A4 /9	18:58	3:29am	3:39am	3:49am
		B4 /8	18:58	3:35am	3:45am	3:55am
39		A6 /9	18:58	3:41am	3:51am	4:01am
40		B6 /8	18:58	3:47am	3:57am	4:07am
		A8 /9	18:49	3:52am	4:02am	4:12am
		B8 /8	18:49	3:58am	4:08am	4:18am
44		A10/9	18:49	4:04am	4:14am	4:24am
45		B10/8	18:49	4:10am	4:20am	4:30am
		A12/9	18:46	4:16am	4:26am	4:36am
		B12/8	18:42	4:22am	4:32am	4:42am
49		A14/9	18:42	4:28am	4:38am	4:48am
50		B14/8	18:41	4:34am	4:44am	4:54am
		A16/9	18:41	4:40am	4:50am	5:00am
		B16/8	18:41	4:46am	4:56am	5:06am
		A18/9	18:41	4:52am	5:02am	5:12am
		B18/8	18:41	4:58am	5:08am	5:18am
54		A20/9	18:41	5:04am	5:14am	5:24am
55		B20/8	18:39	5:09am	5:19am	5:29am
		A22/9	18:39	5:15am	5:25am	5:35am
		B22/8	18:39	5:21am	5:31am	5:41am
		A24/9	18:39	5:27am	5:37am	5:47am
59		B24/8	18:39	5:33am	5:43am	5:53am
60		A26/9	18:39	5:39am	5:49am	5:59am
		B26/8	18:39	5:45am	5:55am	6:05am
		A28/9	18:39	5:51am	6:01am	6:11am
		B28/8	18:38	5:57am	6:07am	6:17am
64		A30/9	18:38	6:03am	6:13am	6:23am
65		B30/8	18:38	6:09am	6:19am	6:29am
		A2 /9	18:38	6:15am	6:25am	6:35am
		B2 /8	18:38	6:21am	6:31am	6:41am
		A4 /9	18:38	6:27am	6:37am	6:47am
69		B4 /8	18:38	6:33am	6:43am	6:53am
70		A6 /9	18:38	6:39am	6:49am	6:59am
		B6 /8	18:37	6:45am	6:55am	7:05am
		A8 /9	18:37	6:51am	7:01am	7:11am
		B8 /8	18:37	6:57am	7:07am	7:17am
74		A10/9	18:37	7:03am	7:13am	7:23am
75		B10/8	18:37	7:09am	7:19am	7:29am
		A12/9	18:37	7:15am	7:25am	7:35am
		B12/8	18:37	7:21am	7:31am	7:41am
		A14/9	18:37	7:27am	7:37am	7:47am
		B14/8	18:37	7:33am	7:43am	7:53am
		A16/9	18:37	7:39am	7:49am	7:59am
		B16/8	18:37	7:45am	7:55am	8:05am
		A18/9	18:37	7:51am	8:01am	8:11am
		B18/8	18:37	7:57am	8:07am	8:17am
		A20/9	18:37	8:03am	8:13am	8:23am
		B20/8	18:37	8:09am	8:19am	8:29am
		A22/9	18:37	8:15am	8:25am	8:35am
		B22/8	18:37	8:21am	8:31am	8:41am
		A24/9	18:37	8:27am	8:37am	8:47am
		B24/8	18:37	8:33am	8:43am	8:53am
		A26/9	18:37	8:39am	8:49am	8:59am
		B26/8	18:37	8:45am	8:55am	9:05am
		A28/9	18:37	8:51am	9:01am	9:11am
		B28/8	18:37	8:57am	9:07am	9:17am
		A30/9	18:37	9:03am	9:13am	9:23am
		B30/8	18:37	9:09am	9:19am	9:29am
		A2 /9	18:37	9:15am	9:25am	9:35am
		B2 /8	18:37	9:21am	9:31am	9:41am
		A4 /9	18:37	9:27am	9:37am	9:47am
		B4 /8	18:37	9:33am	9:43am	9:53am
		A6 /9	18:37	9:39am	9:49am	9:59am
		B6 /8	18:37	9:45am	9:55am	10:05am
		A8 /9	18:37	9:51am	10:01am	10:11am
		B8 /8	18:37	9:57am	10:07am	10:17am
		A10/9	18:37	10:03am	10:13am	10:23am
		B10/8	18:37	10:09am	10:19am	10:29am
		A12/9	18:37	10:15am	10:25am	10:35am
		B12/8	18:37	10:21am	10:31am	10:41am
		A14/9	18:37	10:27am	10:37am	10:47am
		B14/8	18:37	10:33am	10:43am	10:53am
		A16/9	18:37	10:39am	10:49am	10:59am
		B16/8	18:37	10:45am	10:55am	11:05am
		A18/9	18:37	10:51am	11:01am	11:11am
		B18/8	18:37	10:57am	11:07am	11:17am
		A20/9	18:37	11:03am	11:13am	11:23am
		B20/8	18:37	11:09am	11:19am	11:29am
		A22/9	18:37	11:15am	11:25am	11:35am
		B22/8	18:37	11:21am	11:31am	11:41am
		A24/9	18:37	11:27am	11:37am	11:47am
		B24/8	18:37	11:33am	11:43am	11:53am
		A26/9	18:37	11:39am	11:49am	11:59am
		B26/8	18:37	11:45am	11:55am	12:05pm
		A28/9	18:37	11:51am	12:01pm	12:11pm
		B28/8	18:37	11:57am	12:07pm	12:17pm
		A30/9	18:37	12:03pm	12:13pm	12:23pm
		B30/8	18:37	12:09pm	12:19pm	12:29pm
		A2 /9	18:37	12:15pm	12:25pm	12:35pm
		B2 /8	18:37	12:21pm	12:31pm	12:41pm
		A4 /9	18:37	12:27pm	12:37pm	12:47pm
		B4 /8	18:37	12:33pm	12:43pm	12:53pm
		A6 /9	18:37	12:39pm	12:49pm	12:59pm
		B6 /8	18:37	12:45pm	12:55pm	1:05pm
		A8 /9	18:37	12:51pm	1:01pm	1:11pm
		B8 /8	18:37	12:57pm	1:07pm	1:17pm
		A10/9	18:37	1:03pm	1:13pm	1:23pm
		B10/8	18:37	1:09pm	1:19pm	1:29pm
		A12/9	18:37	1:15pm	1:25pm	1:35pm
		B12/8	18:37	1:21pm	1:31pm	1:41pm
		A14/9	18:37	1:27pm	1:37pm	1:47pm
		B14/8	18:37	1:33pm	1:43pm	1:53pm
		A16/9	18:37	1:39pm	1:49pm	1:59pm
		B16/8	18:37	1:45pm	1:55pm	2:05pm
		A18/9	18:37	1:51pm	2:01pm	2:11pm
		B18/8	18:37	1:57pm	2:07pm	2:17pm
		A20/9	18:37	2:03pm	2:13pm	2:23pm
		B20/8	18:37	2:09pm	2:19pm	2:29pm
		A22/9	18:37	2:15pm	2:25pm	2:35pm
		B22/8	18:37	2:21pm	2:31pm	2:41pm
		A24/9	18:37	2:27pm	2:37pm	2:47pm
		B24/8	18:37	2:33pm	2:43pm	2:53pm
		A26/9	18:37	2:39pm	2:49pm	2:59pm
		B26/8	18:37	2:45pm	2:55pm	3:05pm
		A28/9	18:37	2:51pm	3:01pm	3:11pm
		B28/8	18:37	2:57pm	3:07pm	3:17pm
		A30/9	18:37	3:03pm	3:13pm	3:23pm
		B30/8	18:37	3:09pm	3:19pm	3:29pm

- A14-9
A18
A22
B11

+ A5-9
W B12-7

PUSHING SCHEDULE

Wednesday, March 9, 1994 Turn 2
Batteries: 7-9_2

#	Oven	Last Pushed	Earliest	Desired	Latest
1	A14/8	18:22	7:50am	8:00am	8:25am
2	B14/7	18:22	7:57am	8:06am	8:31am
3	A16/8	18:22	8:02am	8:12am	8:37am
4	B16/7	18:22	8:08am	8:18am	8:43am
5	A18/8	18:21	8:14am	8:24am	8:49am
6	B18/7	18:21	8:20am	8:30am	8:55am
7	A20/8	18:21	8:26am	8:36am	9:01am
8	B20/7	18:22	8:33am	8:43am	9:08am
9	A22/8	18:22	8:39am	8:49am	9:14am
10	B22/7	18:22	8:45am	8:55am	9:20am
11	A24/8	18:22	8:51am	9:01am	9:26am
12	B24/7	18:21	8:57am	9:07am	9:32am
13	A26/8	18:21	9:03am	9:13am	9:38am
14	B26/7	18:22	9:10am	9:20am	9:45am
15	A28/8	18:22	9:16am	9:26am	9:51am
16	B28/7	18:22	9:22am	9:32am	9:57am
17	A30/8	18:22	9:28am	9:38am	10:03am
18	B30/7	18:21	9:34am	9:44am	10:09am
19	A1 /9	18:21	9:40am	9:50am	10:15am
20	B1 /8	18:21	9:46am	9:56am	10:21am
21	A3 /9	18:22	9:53am	10:03am	10:28am
22	B3 /8	18:22	9:59am	10:09am	10:34am
23	B5 /8	18:15	10:05am	10:15am	10:40am
24	A7 /9	18:15	10:11am	10:21am	10:46am
25	B7 /8	18:15	10:17am	10:27am	10:52am
26	A9 /9	18:15	10:23am	10:33am	10:58am
27	B9 /8	18:16	10:30am	10:40am	11:05am
28	A11/9	18:16	10:36am	10:46am	11:11am
29	B11/8	18:16	10:42am	10:52am	11:17am
30	A13/9	18:16	10:48am	10:58am	11:23am
31	B13/8	18:16	10:54am	11:04am	11:29am
32	A15/9	18:16	11:00am	11:10am	11:35am
33	B15/8	18:16	11:06am	11:16am	11:41am
34	A17/9	18:17	11:13am	11:23am	11:48am
35	B17/8	18:17	11:19am	11:29am	11:54am
36	A19/9	18:17	11:25am	11:35am	12:00pm
37	B19/8	18:17	11:31am	11:41am	12:06pm
38	A21/9	18:17	11:37am	11:47am	12:12pm
39	B21/8	18:17	11:43am	11:53am	12:18pm
40	A23/9	18:18	11:50am	12:00pm	12:25pm
41	B23/8	18:18	11:56am	12:06pm	12:31pm
42	A25/9	18:18	12:02pm	12:12pm	12:37pm
43	B25/8	18:18	12:08pm	12:18pm	12:43pm
44	A27/9	18:19	12:14pm	12:24pm	12:49pm
45	B27/8	18:19	12:20pm	12:30pm	12:55pm
46	A29/9	18:16	12:26pm	12:36pm	1:01pm
47	A14/9	37:43	12:33pm	12:43pm	1:08pm
48	B29/8	18:25	12:39pm	12:49pm	1:14pm
49	A16/9	37:49	12:45pm	12:55pm	1:20pm
50	A31/9	18:31	12:51pm	1:01pm	1:26pm
51	B31/8	18:31	12:57pm	1:07pm	1:32pm
52	C2 /8	18:31	1:03pm	1:13pm	1:38pm
53	B2 /9	18:31	1:09pm	1:19pm	1:44pm
54	A22/9	37:56	1:16pm	1:26pm	1:51pm
55	A2 /7	18:38	1:22pm	1:32pm	1:57pm
56	B4 /9	25:02	1:28pm	1:38pm	2:03pm
57	A4 /7	18:44	1:34pm	1:44pm	2:09pm
58	B6 /9	18:44	1:40pm	1:50pm	2:15pm
59	A6 /7	18:44	1:46pm	1:56pm	2:21pm
60	B8 /9	53:45	1:53pm	2:03pm	2:28pm
61	A8 /7	18:51	1:59pm	2:09pm	2:34pm
62	B10/9	18:51	2:05pm	2:15pm	2:40pm
63	A10/7	18:51	2:11pm	2:21pm	2:46pm
64	B12/9	18:51	2:17pm	2:27pm	2:52pm
65	A12/7	18:51	2:23pm	2:33pm	2:58pm
66	B14/9	25:38	2:29pm	2:39pm	3:04pm
67	A14/7	18:58	2:36pm	2:46pm	3:11pm
68	B16/9	18:58	2:42pm	2:52pm	3:17pm
69	A16/7	18:58	2:48pm	2:58pm	3:23pm
70	B18/9	18:58	2:54pm	3:04pm	3:29pm
71	A18/7	18:58	3:00pm	3:10pm	3:35pm
72	B20/9	18:58	3:06pm	3:16pm	3:41pm
73	A20/7	18:59	3:13pm	3:23pm	3:48pm
74	B22/9	18:59	3:19pm	3:29pm	3:54pm
75	A22/7	18:59	3:25pm	3:35pm	4:00pm
76	B24/9	18:59	3:31pm	3:41pm	4:06pm
77	A24/7	18:59	3:37pm	3:47pm	4:12pm
78	B26/9	18:59	3:43pm	3:53pm	4:18pm

- A5/9
+ A14/9 w A29/9
+ A18/9 w B29/8
+ B22/9 w B2/9

PUSHING SCHEDULE

Wednesday, March 9, 1994 Turn 3
Batteries: 7-9_2

7/-B31 9/-A14 9/-A18 9/-A22

S	#	Oven	Last Pushed	Earliest	Desired	Latest
1		B20/9	0:44	3:50pm	4:00pm	4:10pm
2		A20/7	0:43	3:56pm	4:06pm	4:16pm
		B22/9	0:43	4:02pm	4:12pm	4:22pm
		A22/7	0:43	4:08pm	4:18pm	4:28pm
		B24/9	0:43	4:14pm	4:24pm	4:34pm
6		A24/7	0:43	4:20pm	4:30pm	4:40pm
7		B26/9	0:43	4:26pm	4:36pm	4:46pm
		A26/7	19:42	4:32pm	4:42pm	4:52pm
		B28/9	19:42	4:38pm	4:48pm	4:58pm
		A28/7	19:42	4:44pm	4:54pm	5:04pm
11		B30/9	19:42	4:50pm	5:00pm	5:10pm
12		C1 /9	19:42	4:56pm	5:06pm	5:16pm
		A30/7	19:42	5:02pm	5:12pm	5:22pm
		A1 /8	19:42	5:08pm	5:18pm	5:28pm
		B1 /7	19:42	5:14pm	5:24pm	5:34pm
16		A3 /8	19:42	5:20pm	5:30pm	5:40pm
17		B3 /7	19:42	5:26pm	5:36pm	5:46pm
		A5 /8	19:42	5:32pm	5:42pm	5:52pm
		B5 /7	19:42	5:38pm	5:48pm	5:58pm
		A7 /8	19:42	5:44pm	5:54pm	6:04pm
21		B7 /7	19:42	5:50pm	6:00pm	6:10pm
22		A9 /8	19:42	5:56pm	6:06pm	6:16pm
		B9 /7	19:42	6:02pm	6:12pm	6:22pm
		A11/8	19:42	6:08pm	6:18pm	6:28pm
		B11/7	19:42	6:14pm	6:24pm	6:34pm
26		A13/8	19:42	6:20pm	6:30pm	6:40pm
27		B13/7	19:42	6:26pm	6:36pm	6:46pm
		A15/8	19:42	6:32pm	6:42pm	6:52pm
		B15/7	19:42	6:38pm	6:48pm	6:58pm
30		A17/8	19:42	6:44pm	6:54pm	7:04pm
31		B17/7	19:42	6:50pm	7:00pm	7:10pm
32		A19/8	19:42	6:56pm	7:06pm	7:16pm
		B19/7	19:42	7:02pm	7:12pm	7:22pm
		A21/8	19:42	7:08pm	7:18pm	7:28pm
35		B21/7	19:42	7:14pm	7:24pm	7:34pm
36		A23/8	19:42	7:20pm	7:30pm	7:40pm
37		B23/7	19:42	7:26pm	7:36pm	7:46pm
		A25/8	19:42	7:32pm	7:42pm	7:52pm
		B25/7	19:43	7:38pm	7:48pm	7:58pm
40		A27/8	19:43	7:44pm	7:54pm	8:04pm
41		B27/7	19:43	7:50pm	8:00pm	8:10pm
42		A29/8	19:43	7:56pm	8:06pm	8:16pm
		B29/7	19:43	8:02pm	8:12pm	8:22pm
		A31/8	19:43	8:08pm	8:18pm	8:28pm
45		A2 /9	19:37	8:14pm	8:24pm	8:34pm
46		B2 /8	19:37	8:20pm	8:30pm	8:40pm
47		A4 /9	19:37	8:26pm	8:36pm	8:46pm
		B4 /8	19:37	8:32pm	8:42pm	8:52pm
		A6 /9	19:37	8:38pm	8:48pm	8:58pm
50		B6 /8	19:37	8:44pm	8:54pm	9:04pm
51		A8 /9	19:38	8:50pm	9:00pm	9:10pm
		B8 /8	19:38	8:56pm	9:06pm	9:16pm
		A10/9	19:38	9:02pm	9:12pm	9:22pm
		B10/8	19:38	9:08pm	9:18pm	9:28pm
55		A12/9	19:38	9:14pm	9:24pm	9:34pm
56		B12/8	19:38	9:20pm	9:30pm	9:40pm
		B14/8	19:38	9:26pm	9:36pm	9:46pm
		A16/9	19:38	9:32pm	9:42pm	9:52pm
		B16/8	19:38	9:38pm	9:48pm	9:58pm
60		B18/8	19:38	9:44pm	9:54pm	10:04pm
61		A20/9	19:38	9:50pm	10:00pm	10:10pm
		B20/8	19:38	9:56pm	10:06pm	10:16pm
		B22/8	19:38	10:02pm	10:12pm	10:22pm
		A24/9	19:39	10:08pm	10:18pm	10:28pm
65		B24/8	19:39	10:14pm	10:24pm	10:34pm
66		A26/9	19:39	10:20pm	10:30pm	10:40pm
		B26/8	19:39	10:26pm	10:36pm	10:46pm
		A28/9	19:39	10:32pm	10:42pm	10:52pm
69		B28/8	19:39	10:38pm	10:48pm	10:58pm
70		A30/9	19:39	10:44pm	10:54pm	11:04pm
71		B30/8	19:39	10:50pm	11:00pm	11:10pm
		C1 /8	19:39	10:56pm	11:06pm	11:16pm
		B1 /9	19:39	11:02pm	11:12pm	11:22pm
74		A1 /7	19:39	11:08pm	11:18pm	11:28pm
75		B3 /9	19:39	11:14pm	11:24pm	11:34pm
76		A3 /7	19:39	11:20pm	11:30pm	11:40pm
		B5 /9	19:45	11:26pm	11:36pm	11:46pm
		A5 /7	19:51	11:32pm	11:42pm	11:52pm
79		B7 /9	19:57	11:38pm	11:48pm	11:58pm
80		A7 /7	20:03	11:44pm	11:54pm	12:04am

Thursday, March 10, 1994 Turn 1
Batteries: 7-9_2

Se	#	Oven	Last Pushed	Earliest	Desired	Latest
		B9 /9	19:40	11:50am	12:00am	12:10am
2		B31/7	19:45	11:56am	12:05am	12:15am
3		A9 /7	19:45	12:01am	12:11am	12:21am
		B11/9	38:33	12:07am	12:17am	12:27am
		A11/7	19:51	12:13am	12:23am	12:33am
		B13/9	19:51	12:19am	12:29am	12:39am
7		A13/7	19:51	12:25am	12:35am	12:45am
8		B15/9	19:51	12:31am	12:41am	12:51am
		A15/7	19:51	12:37am	12:47am	12:57am
		B17/9	19:51	12:43am	12:53am	1:03am
11		A17/7	19:51	12:49am	12:59am	1:09am
12		B19/9	19:51	12:55am	1:05am	1:15am
13		A19/7	19:52	1:01am	1:11am	1:21am
		B21/9	19:52	1:07am	1:17am	1:27am
		A21/7	19:51	1:12am	1:22am	1:32am
16		B23/9	19:51	1:18am	1:28am	1:38am
17		A23/7	19:51	1:24am	1:34am	1:44am
18		B25/9	19:51	1:30am	1:40am	1:50am
		A25/7	19:51	1:36am	1:46am	1:56am
		B27/9	19:51	1:42am	1:52am	2:02am
21		A27/7	19:51	1:48am	1:58am	2:08am
22		B29/9	19:51	1:54am	2:04am	2:14am
23		A29/7	19:51	2:00am	2:10am	2:20am
		B31/9	19:51	2:06am	2:16am	2:26am
		A31/7	19:51	2:12am	2:22am	2:32am
26		C2 /9	19:51	2:18am	2:28am	2:38am
27		A2 /8	19:52	2:24am	2:34am	2:44am
28		B2 /7	19:51	2:29am	2:39am	2:49am
		A4 /8	19:51	2:35am	2:45am	2:55am
		B4 /7	19:51	2:41am	2:51am	3:01am
31		A6 /8	19:51	2:47am	2:57am	3:07am
32		B6 /7	19:51	2:53am	3:03am	3:13am
		A8 /8	19:51	2:59am	3:09am	3:19am
		B8 /7	19:51	3:05am	3:15am	3:25am
		A10/9	19:51	3:11am	3:21am	3:31am
36		B10/7	19:51	3:17am	3:27am	3:37am
37		A12/8	19:51	3:23am	3:33am	3:43am
		B12/7	19:51	3:29am	3:39am	3:49am
		A14/8	19:45	3:35am	3:45am	3:55am
		B14/7	19:45	3:41am	3:51am	4:01am
41		A16/8	19:45	3:47am	3:57am	4:07am
42		B16/7	19:44	3:52am	4:02am	4:12am
		A18/8	19:44	3:58am	4:08am	4:18am
		B18/7	19:44	4:04am	4:14am	4:24am
		A20/8	19:44	4:10am	4:20am	4:30am
46		B20/7	19:43	4:16am	4:26am	4:36am
47		A22/8	19:43	4:22am	4:32am	4:42am
		B22/7	19:43	4:28am	4:38am	4:48am
		A24/8	19:43	4:34am	4:44am	4:54am
		B24/7	19:43	4:40am	4:50am	5:00am
51		A26/8	19:43	4:46am	4:56am	5:06am
52		B26/7	19:42	4:52am	5:02am	5:12am
		A28/8	19:42	4:58am	5:08am	5:18am
		B28/7	19:42	5:04am	5:14am	5:24am
55		A30/8	19:41	5:09am	5:19am	5:29am
56		B30/7	19:41	5:15am	5:25am	5:35am
57		A1 /9	19:41	5:21am	5:31am	5:41am
		B1 /8	19:41	5:27am	5:37am	5:47am
		A3 /9	19:40	5:33am	5:43am	5:53am
60		B3 /8	19:40	5:39am	5:49am	5:59am
61		B5 /8	19:40	5:45am	5:55am	6:05am
62		A7 /9	19:40	5:51am	6:01am	6:11am
		B7 /8	19:40	5:57am	6:07am	6:17am
		A9 /9	19:40	6:03am	6:13am	6:23am
65		B9 /8	19:39	6:09am	6:19am	6:29am
66		A11/9	19:39	6:15am	6:25am	6:35am
67		B11/8	19:39	6:21am	6:31am	6:41am
		A13/9	19:39	6:27am	6:37am	6:47am
		B13/8	19:38	6:32am	6:42am	6:52am
70		A15/9	19:38	6:38am	6:48am	6:58am
71		B15/8	19:38	6:44am	6:54am	7:04am
72		A17/9	19:37	6:50am	7:00am	7:10am
		B17/8	19:37	6:56am	7:06am	7:16am
		A19/9	19:37	7:02am	7:12am	7:22am
75		B19/8	19:37	7:08am	7:18am	7:28am
76		A21/9	19:37	7:14am	7:24am	7:34am
		B21/8	19:37	7:20am	7:30am	7:40am
		A23/9	19:36	7:26am	7:36am	7:46am
		B23/8	19:36	7:32am	7:42am	7:52am
80		A25/9	19:36	7:38am	7:48am	7:58am

- A5-9
+ B31-7

Thursday, March 10, 1994 Turn 2
Batteries: 7-9_2

S	#	Oven	Last Pushed	Earliest	Desired	Latest
	1	A27/9	19:36	7:50am	8:00am	8:25am
	2	B27/8	19:36	7:57am	8:06am	8:31am
	3	A29/9	19:36	8:02am	8:12am	8:37am
		B29/8	19:29	8:08am	8:18am	8:43am
		A31/9	19:23	8:14am	8:24am	8:49am
	6	B31/8	19:23	8:20am	8:30am	8:55am
	7	C2 /8	19:23	8:26am	8:36am	9:01am
	8	B2 /9	19:23	8:32am	8:42am	9:07am
		A2 /7	19:16	8:38am	8:48am	9:13am
		B4 /9	19:16	8:44am	8:54am	9:19am
	11	A4 /7	19:16	8:50am	9:00am	9:25am
	12	B6 /9	19:16	8:56am	9:06am	9:31am
	13	A6 /7	19:16	9:02am	9:12am	9:37am
		B8 /9	19:15	9:08am	9:18am	9:43am
		A8 /7	19:16	9:15am	9:25am	9:50am
	16	B10/9	19:16	9:21am	9:31am	9:56am
	17	A10/7	19:16	9:27am	9:37am	10:02am
	18	B12/9	19:16	9:33am	9:43am	10:08am
		A5 /9	19:22	9:39am	9:49am	10:14am
		A12/7	19:22	9:45am	9:55am	10:20am
	21	B14/9	19:22	9:51am	10:01am	10:26am
	22	A14/7	19:21	9:57am	10:07am	10:32am
	23	B16/9	19:21	10:03am	10:13am	10:38am
		A16/7	19:21	10:09am	10:19am	10:44am
		B18/9	19:21	10:15am	10:25am	10:50am
	26	A18/7	19:21	10:21am	10:31am	10:56am
	27	B20/9	18:37	10:27am	10:37am	11:02am
	28	A20/7	18:38	10:34am	10:44am	11:09am
		B22/9	18:38	10:40am	10:50am	11:15am
	30	A22/7	18:38	10:46am	10:56am	11:21am
	31	B24/9	18:38	10:52am	11:02am	11:27am
	32	A24/7	18:38	10:58am	11:08am	11:33am
		B26/9	18:38	11:04am	11:14am	11:39am
		A26/7	18:38	11:10am	11:20am	11:45am
	35	B28/9	18:38	11:16am	11:26am	11:51am
	36	A28/7	18:38	11:22am	11:32am	11:57am
	37	B30/9	18:38	11:28am	11:38am	12:03pm
		C1 /9	18:38	11:34am	11:44am	12:09pm
		A30/7	18:38	11:40am	11:50am	12:15pm
	40	A1 /8	18:38	11:46am	11:56am	12:21pm
	41	B1 /7	18:39	11:53am	12:03pm	12:28pm
	42	A3 /8	18:39	11:59am	12:09pm	12:34pm
		B3 /7	18:39	12:05pm	12:15pm	12:40pm
		A5 /8	18:39	12:11pm	12:21pm	12:46pm
		B5 /7	18:39	12:17pm	12:27pm	12:52pm
	46	A7 /8	18:39	12:23pm	12:33pm	12:58pm
	47	B7 /7	18:39	12:27pm	12:39pm	1:04pm
		A9 /8	18:39	12:35pm	12:45pm	1:10pm
		B9 /7	18:39	12:41pm	12:51pm	1:16pm
	50	A11/8	18:39	12:47pm	12:57pm	1:22pm
	51	B11/7	18:39	12:53pm	1:03pm	1:28pm
	52	A13/8	18:39	12:59pm	1:09pm	1:34pm
		B13/7	18:39	1:05pm	1:15pm	1:40pm
		A15/8	18:40	1:12pm	1:22pm	1:47pm
	55	B15/7	18:40	1:18pm	1:28pm	1:53pm
	56	A17/8	18:40	1:24pm	1:34pm	1:59pm
	57	B17/7	18:40	1:30pm	1:40pm	2:05pm
		A19/8	18:40	1:36pm	1:46pm	2:11pm
		B19/7	18:40	1:42pm	1:52pm	2:17pm
	60	A21/8	18:40	1:48pm	1:58pm	2:23pm
	61	B21/7	18:40	1:54pm	2:04pm	2:29pm
		A23/8	18:40	2:00pm	2:10pm	2:35pm
		B23/7	18:40	2:06pm	2:16pm	2:41pm
		A25/8	18:40	2:12pm	2:22pm	2:47pm
	65	B25/7	18:40	2:18pm	2:28pm	2:53pm
	66	A27/8	18:40	2:24pm	2:34pm	2:59pm
		B27/7	18:41	2:31pm	2:41pm	3:06pm
		A29/8	18:41	2:37pm	2:47pm	3:12pm
		B29/7	18:41	2:43pm	2:53pm	3:18pm
	72	A31/8	18:41	2:49pm	2:59pm	3:24pm
	73	A2 /9	18:41	2:55pm	3:05pm	3:30pm
		B2 /8	18:41	3:01pm	3:11pm	3:36pm
		A4 /9	18:41	3:07pm	3:17pm	3:42pm
		B4 /8	18:41	3:13pm	3:23pm	3:48pm
	75	A6 /9	18:41	3:19pm	3:29pm	3:54pm
	76	B6 /8	18:41	3:25pm	3:35pm	4:00pm
	77	A8 /9	18:41	3:31pm	3:41pm	4:06pm
		B8 /8	18:41	3:37pm	3:47pm	4:12pm
		A10/9	18:41	3:43pm	3:53pm	4:18pm

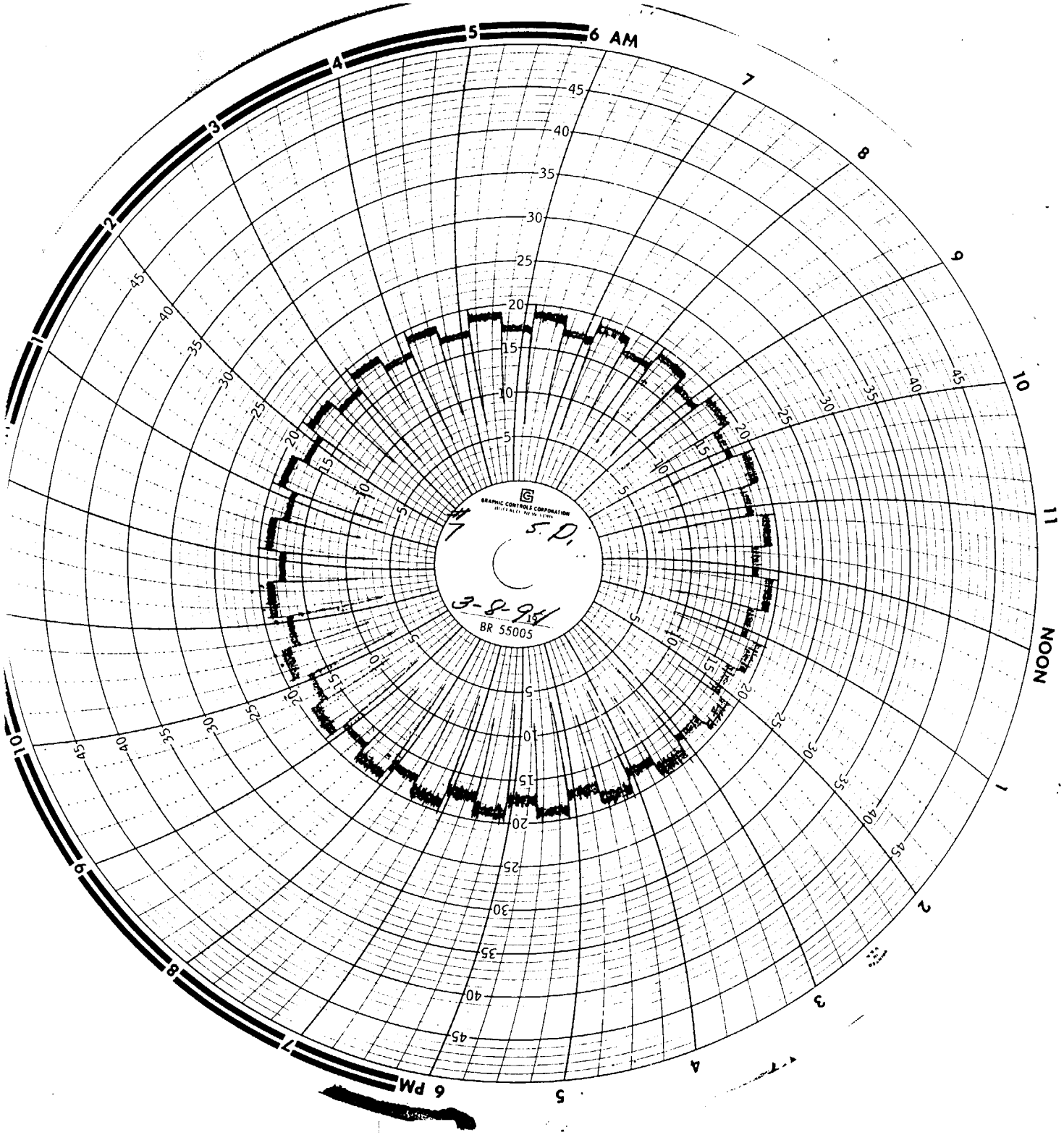
-B31/7
+ A5/9 W B12/9

PUSHING SCHEDULE

Thursday, March 10, 1994 Turn 3
Batteries: 7-9_2

#	Oven	Last Pushed	Earliest	Desired	Latest
1	B10/8	18:42	3:56pm	4:00pm	4:10pm
2	A12/9	18:41	3:56pm	4:05pm	4:15pm
3	B12/8	18:41	4:01pm	4:11pm	4:21pm
4	A14/9	27:34	4:07pm	4:17pm	4:27pm
5	B14/8	18:47	4:13pm	4:23pm	4:33pm
6	A16/9	18:47	4:19pm	4:29pm	4:39pm
7	B16/8	18:47	4:25pm	4:35pm	4:45pm
8	A18/9	27:46	4:31pm	4:41pm	4:51pm
9	B18/8	18:53	4:37pm	4:47pm	4:57pm
10	A20/9	18:53	4:43pm	4:53pm	5:03pm
11	B20/8	18:53	4:49pm	4:59pm	5:09pm
12	A22/9	27:39	4:55pm	5:05pm	5:15pm
13	B22/8	18:59	5:01pm	5:11pm	5:21pm
14	A24/9	18:59	5:07pm	5:17pm	5:27pm
15	B24/8	18:58	5:12pm	5:22pm	5:32pm
16	A26/9	18:58	5:18pm	5:28pm	5:38pm
17	B26/8	18:58	5:24pm	5:34pm	5:44pm
18	A28/9	18:58	5:30pm	5:40pm	5:50pm
19	B28/8	18:58	5:36pm	5:46pm	5:56pm
20	A30/9	18:58	5:42pm	5:52pm	6:02pm
21	B30/8	18:58	5:48pm	5:58pm	6:08pm
22	C1 /8	18:58	5:54pm	6:04pm	6:14pm
23	B1 /9	18:58	6:00pm	6:10pm	6:20pm
24	A1 /7	18:58	6:06pm	6:16pm	6:26pm
25	B3 /9	18:58	6:12pm	6:22pm	6:32pm
26	A3 /7	18:58	6:18pm	6:28pm	6:38pm
27	B5 /9	18:58	6:24pm	6:34pm	6:44pm
28	A5 /7	18:57	6:29pm	6:39pm	6:49pm
29	B7 /9	18:57	6:35pm	6:45pm	6:55pm
30	A7 /7	18:57	6:41pm	6:51pm	7:01pm
31	B9 /9	18:57	6:47pm	6:57pm	7:07pm
32	A9 /7	18:52	6:53pm	7:03pm	7:13pm
33	B11/9	18:52	6:59pm	7:09pm	7:19pm
34	A11/7	18:52	7:05pm	7:15pm	7:25pm
35	B13/9	18:52	7:11pm	7:21pm	7:31pm
36	A13/7	18:52	7:17pm	7:27pm	7:37pm
37	B15/9	18:52	7:23pm	7:33pm	7:43pm
38	A15/7	18:52	7:29pm	7:39pm	7:49pm
39	B17/9	18:52	7:35pm	7:45pm	7:55pm
40	A17/7	18:52	7:41pm	7:51pm	8:01pm
41	B19/9	18:52	7:47pm	7:57pm	8:07pm
42	A19/7	18:51	7:52pm	8:02pm	8:12pm
43	B21/9	18:51	7:58pm	8:08pm	8:18pm
44	A21/7	18:52	8:04pm	8:14pm	8:24pm
45	B23/9	18:52	8:10pm	8:20pm	8:30pm
46	A23/7	18:52	8:16pm	8:26pm	8:36pm
47	B25/9	18:52	8:22pm	8:32pm	8:42pm
48	A25/7	18:52	8:28pm	8:38pm	8:48pm
49	B27/9	18:52	8:34pm	8:44pm	8:54pm
50	A27/7	18:52	8:40pm	8:50pm	9:00pm
51	B29/9	18:52	8:46pm	8:56pm	9:06pm
52	A29/7	18:52	8:52pm	9:02pm	9:12pm
53	B31/9	18:52	8:58pm	9:08pm	9:18pm
54	A31/7	18:52	9:04pm	9:14pm	9:24pm
55	C2 /9	18:51	9:09pm	9:19pm	9:29pm
56	A2 /8	18:51	9:15pm	9:25pm	9:35pm
57	B2 /7	18:52	9:21pm	9:31pm	9:41pm
58	A4 /8	18:52	9:27pm	9:37pm	9:47pm
59	B4 /7	18:52	9:33pm	9:43pm	9:53pm
60	A6 /8	18:52	9:39pm	9:49pm	9:59pm
61	B6 /7	18:52	9:45pm	9:55pm	10:05pm
62	A8 /8	18:52	9:51pm	10:01pm	10:11pm
63	B8 /7	18:52	9:57pm	10:07pm	10:17pm
64	A10/8	18:52	10:03pm	10:13pm	10:23pm
65	B10/7	18:52	10:09pm	10:19pm	10:29pm
66	A12/8	18:52	10:15pm	10:25pm	10:35pm
67	B12/7	18:52	10:21pm	10:31pm	10:41pm
68	A14/8	18:52	10:27pm	10:37pm	10:47pm
69	B14/7	18:51	10:32pm	10:42pm	10:52pm
70	A16/8	18:51	10:38pm	10:48pm	10:58pm
71	B16/7	18:52	10:44pm	10:54pm	11:04pm
72	A18/8	18:52	10:50pm	11:00pm	11:10pm
73	B18/7	18:52	10:56pm	11:06pm	11:16pm
74	A20/8	18:52	11:02pm	11:12pm	11:22pm
75	B20/7	18:52	11:08pm	11:18pm	11:28pm
76	A22/8	18:52	11:14pm	11:24pm	11:34pm
77	B22/7	18:51	11:20pm	11:30pm	11:40pm
78	A24/8	18:52	11:26pm	11:36pm	11:46pm
79	B24/7	18:51	11:32pm	11:42pm	11:52pm
80	A26/8	18:52	11:38pm	11:48pm	11:58pm

6 P.M.
6 A.M.
NOON
MIDNIGHT
BR-55003
3-8
Run #1
94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GRAPHIC CONTROLS CORPORATION
BR 55005
3-8-94

6 AM
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GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y. 14240
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3-8-81

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Garner Products Corporation

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GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y.
S. D.
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NOON
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GRAPHIC CONTROLS CORPORATION
BR 32008
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NOON
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GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
BR 727

NOON
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BR 32008
GRAPHIC CONTROLS CORPORATION

6 AM
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6 PM
BR 55005
19

MIDNIGHT
6 A.M.
NOON
6 P.M.
BR-55003
3-9

NOON
MIDNIGHT
6 AM
6 PM
BR 32008
Volume # 7
3-9 94

MIDNIGHT
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MIDNIGHT
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MIDNIGHT
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Volume # 8
3-9 1994
BR 32008

MIDNIGHT
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GRAPHIC CONTROLS CORPORATION
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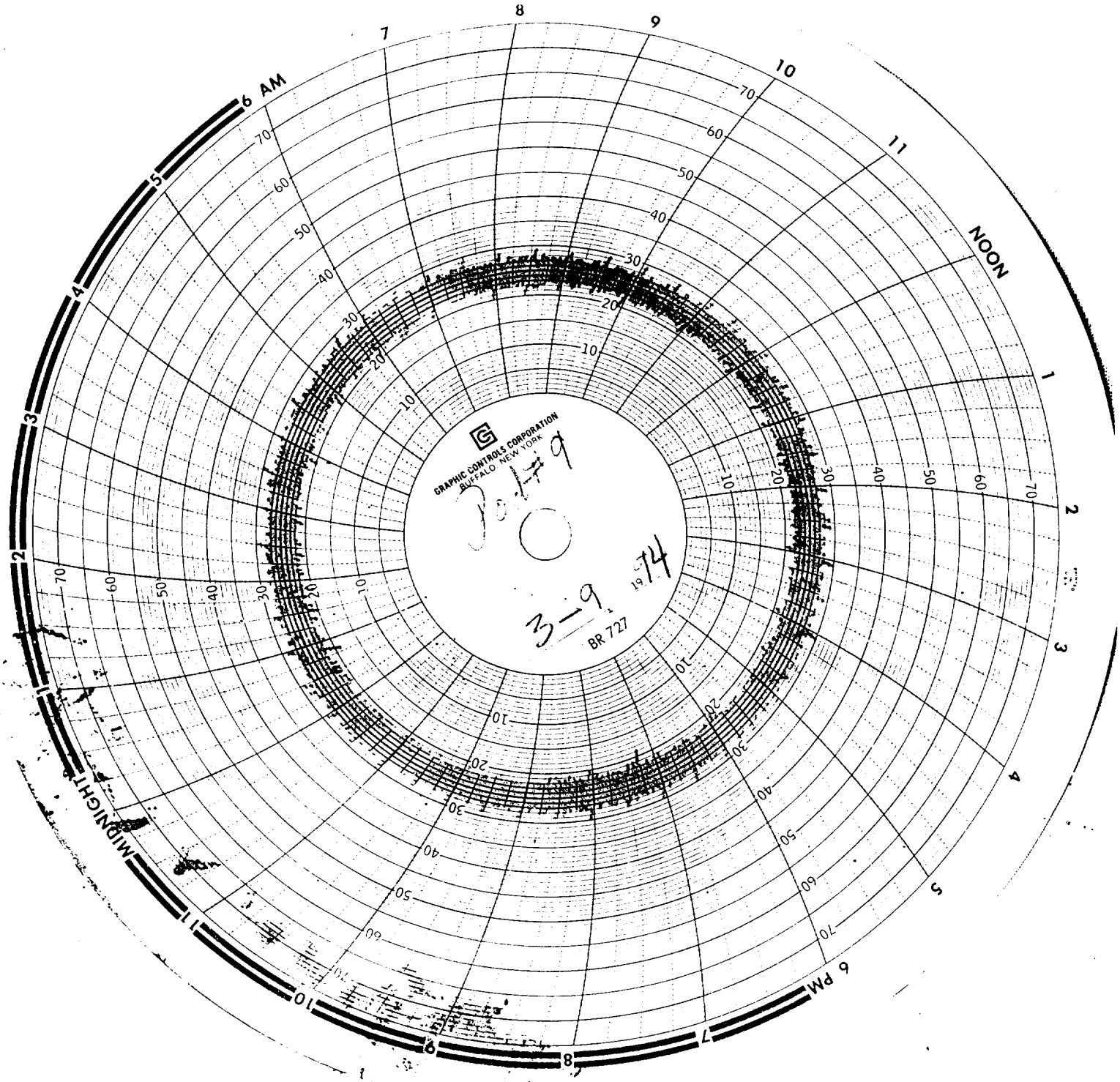
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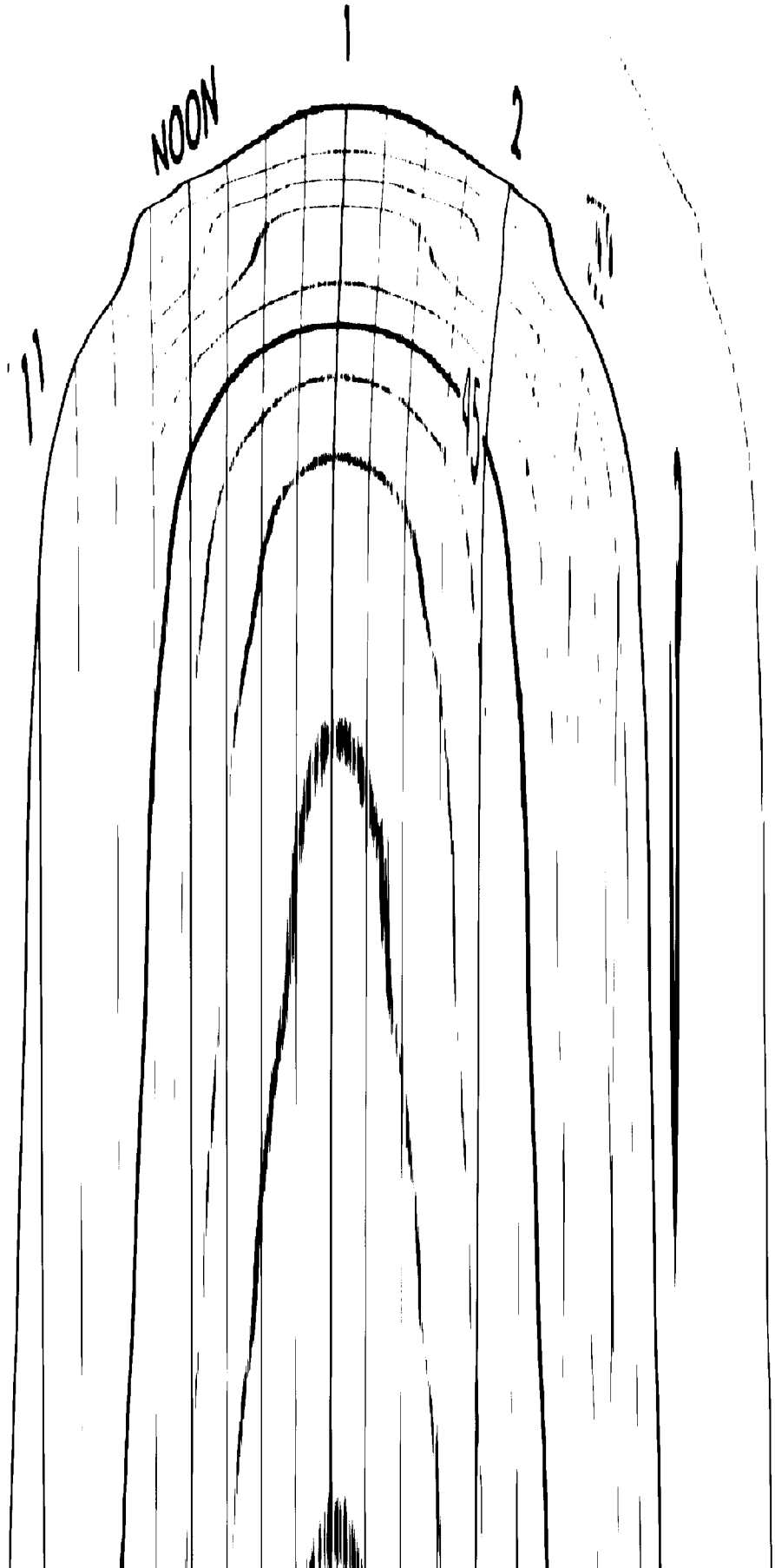
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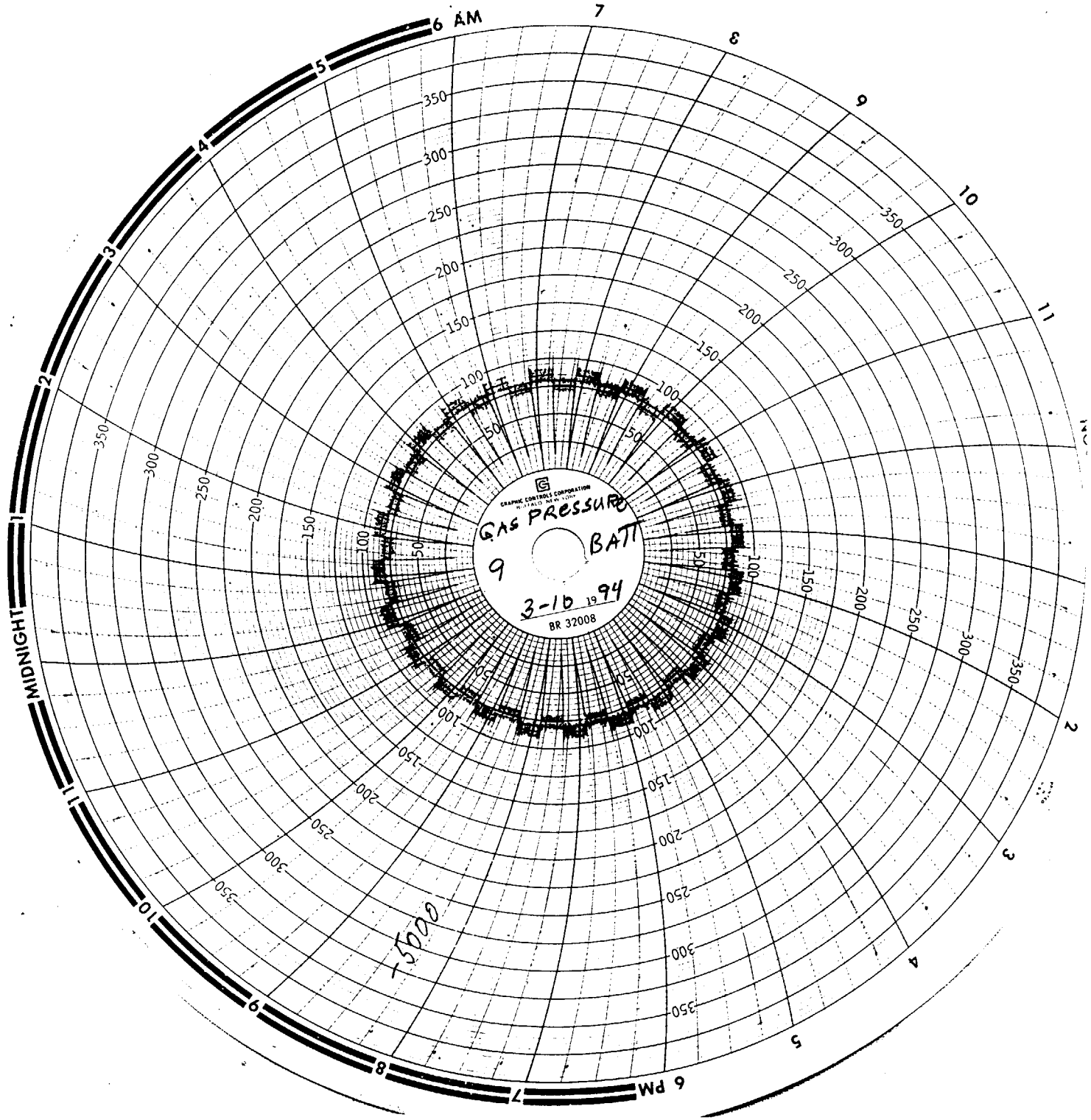
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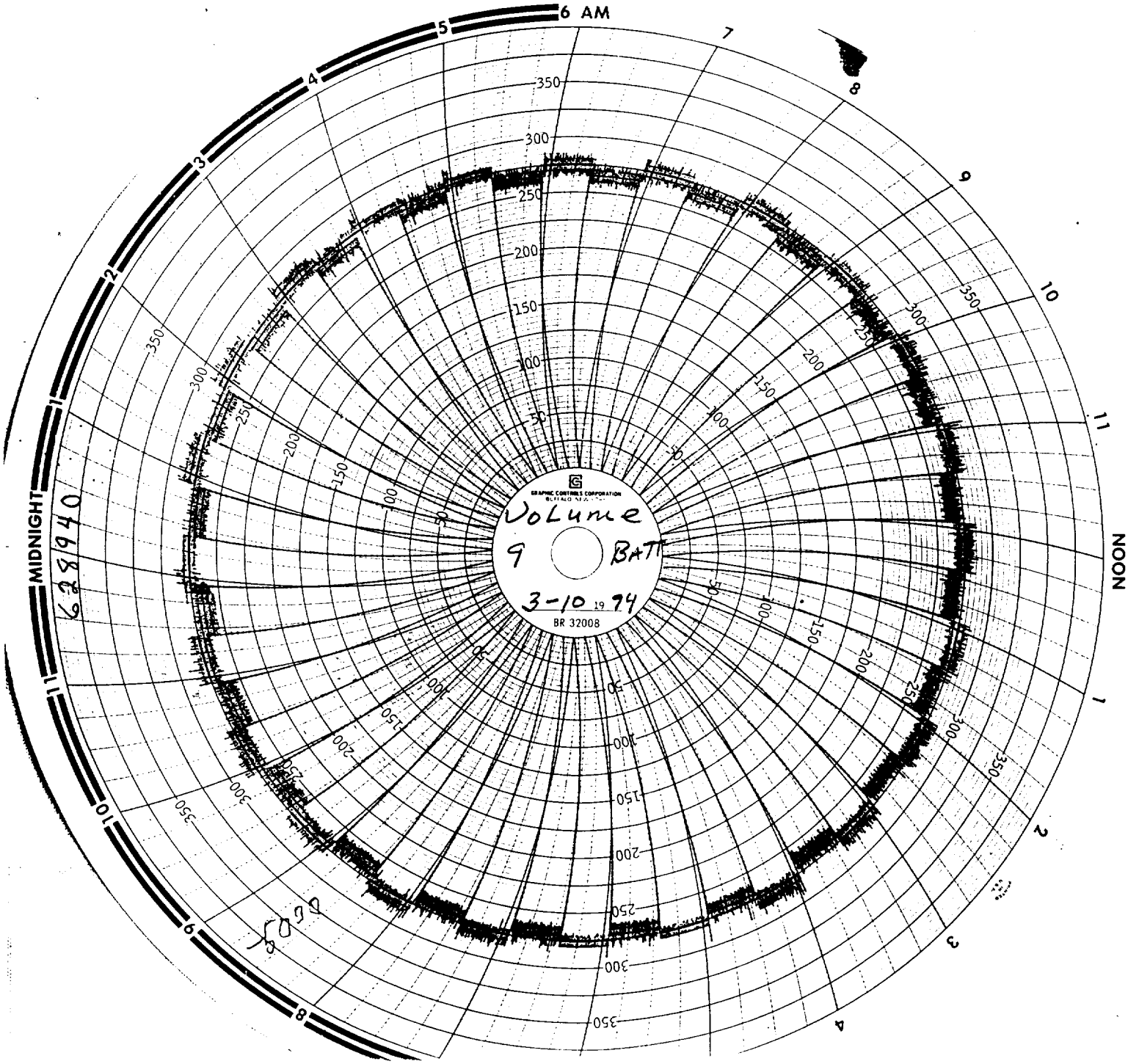
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COMPLIANCE DEMONSTRATION
NO. 7, 8, AND 9 BATTERY
PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

APPENDIX C

GRAVIMETRIC RESULTS, EMISSIONS CALCULATIONS

CHESTER
ENVIRONMENTAL

CHESTER ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

ANALYTICAL REPORTING FORM

CLIENT: USS - Clairton Steel
PLANT LOCATION: Clairton Works
PROJECT NUMBER: 393445-10
UNIT TESTED: 7,8,9 Battery PEC

TEST DATE: 3/8, 3/9 + 3/10/94
DATE RECEIVED: 3/8, 3/9 + 3/10/94
DATE ANALYZED: 3/14, 3/15 + 3/16/94
ANALYTICAL METHOD:

Test Number	Filter ID Number	Component	Cyclone Weight Units ( )	Filter Weight Units (grams)	Soluble Portion of Front Half H2O Rinse Units (grams)	Soluble Portion of Front Half Acetone Rinse Units (grams)	Soluble Portion of Back Half H2O Rinse Units (grams)	Soluble Portion of Back Half Acetone Rinse Units (grams)	0.22µm Filter Insoluble Portion of Back Half H2O Rinse Units (grams)
CLR-2-1-1	1177	Particulate		0.0032	0.0026	0.0033	0.0069	0.0036	0.0003
CLR-2-2-1	1176	Particulate		0.0054	0.0037	0.0091	0.0083	0.0050	0.0017
CLR-2-4-1	1163	Particulate		0.0019	0.0051	0.0101	0.0179	0.0021	0.0002
CLR-2-5-1	1164	Particulate		0.0025	0.0027	0.0035	0.0056	0.0016	0.0006
CLR-2-1-2	1180	Particulate		0.0029	0.0009	0.0006	0.0111	0.0020	0.0016
CLR-2-2-2	1179	Particulate		0.0053	0.0018	0.0019	0.0007	0.0070	0.0017
CLR-2-4-2	1181	Particulate		0.0023	0.0028	0.0036	0.0064	0.0010	0.0018
CLR-2-5-2	1178	Particulate		0.0019	0.0004	0.0040	0.0026	0.0013	0.0003
CLR-2-1-3	1185	Particulate		0.0048	0.0010	0.0002	0.0062	0.0021	0.0008
CLR-2-2-3	1184	Particulate		0.0062	0.0030	0.0031	0.0032	0.0030	0.0003
CLR-2-4-3	1186	Particulate		0.0076	0.0016	0.0032	0.0056	0.0021	0.0002
CLR-2-5-3	1165	Particulate		0.0023	0.0004	0.0019	0.0052	0.0023	0.0001
CLR-BLANK	1200	Particulate		0.0000	0.0000	0.0000			

Analyst's Signature: Patricia J. Stockton
Date: 3/23/94

Comments

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-08-94
TEST NUMBER: CLR-2-1-1

A.	Barometric Pressure	29.47	in. Hg	
B.	Static Pressure	0.8	in. H2O	
C.	Stack Pressure	29.53	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.10	in. H2O	
E.	Meter Pressure	29.55	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.0	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	100	°F	
N.	Average Stack Temperature	560	°R	(460+M)
O.	Average Meter Temperature	62	°F	
P.	Average Meter Temperature	522	°R	(460+O)
Q.	Condensate Volume	5.8	mL	
R.	Absorbed H2O	6.7	mL	
S.	Total H2O	12.5	mL	(Q+R)
T.	Filter Weight	0.0032	g	
U.	Probe Weight	0.0059	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0094	g	(T+U+V)
X.	Metered Gas Volume	38.418	dcf	
Y.	Corrected Metered Gas Volume	38.798	dcf	(X*H)
Z.	H2O Gas Volume	0.591	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	39.390	cf	(Y+Z)
BB.	Percent H2O	1.5	%	(100*Z/AA)
CC.	Gas Volume Sampled	38.760	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0037	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.015		18	0.270
CO2	0.000	0.985	44	0.000
CO	0.000	0.985	28	0.000
O2	0.205	0.985	32	6.462
N2	0.795	0.985	28	21.926

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	58.4	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	24800	acfm	(60*FF*J)
HH.	Standard Flow Rate	23100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	101.9	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.73	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-08-94
TEST NUMBER: CLR-2-2-1

A.	Barometric Pressure	29.47	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.54	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.13	in. H2O	
E.	Meter Pressure	29.55	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	98	°F	
N.	Average Stack Temperature	558	°R	(460+M)
O.	Average Meter Temperature	54	°F	
P.	Average Meter Temperature	514	°R	(460+O)
Q.	Condensate Volume	5.9	mL	
R.	Absorbed H2O	6.5	mL	
S.	Total H2O	12.4	mL	(Q+R)
T.	Filter Weight	0.0054	g	
U.	Probe Weight	0.0128	g	
V.	Impinger Weight	0.0017	g	
W.	Total Weight	0.0199	g	(T+U+V)
X.	Metered Gas Volume	37.192	dcf	
Y.	Corrected Metered Gas Volume	37.858	dcf	(X*H)
Z.	H2O Gas Volume	0.577	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	38.435	cf	(Y+Z)
BB.	Percent H2O	1.5	%	(100*Z/AA)
CC.	Gas Volume Sampled	38.412	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0080	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.015		18	0.270
CO2	0.000	0.985	44	0.000
CO	0.000	0.985	28	0.000
O2	0.205	0.985	32	6.461
N2	0.795	0.985	28	21.926

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	63.9	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27100	acfm	(60*FF*J)
HH.	Standard Flow Rate	25300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	101.6	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.71	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS — TEST DATE: 03-08-94

TEST SITE 7,8,9 BATTERY PEC — TEST NUMBER: CLR-2-4-1

A.	Barometric Pressure	29.47	in. Hg	
B.	Static Pressure	1.2	in. H2O	
C.	Stack Pressure	29.56	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.57	in. H2O	
E.	Meter Pressure	29.59	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.25	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	100	°F	
N.	Average Stack Temperature	560	°R	(460+M)
O.	Average Meter Temperature	64	°F	
P.	Average Meter Temperature	524	°R	(460+O)
Q.	Condensate Volume	5.3	mL	
R.	Absorbed H2O	8.5	mL	
S.	Total H2O	13.8	mL	(Q+R)
T.	Filter Weight	0.0019	g	
U.	Probe Weight	0.0152	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0173	g	(T+U+V)
X.	Metered Gas Volume	44.618	dcf	
Y.	Corrected Metered Gas Volume	44.859	dcf	(X*H)
Z.	H2O Gas Volume	0.655	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	45.514	cf	(Y+Z)
BB.	Percent H2O	1.4	%	(100*Z/AA)
CC.	Gas Volume Sampled	44.696	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0060	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.014		18	0.259
CO2	0.000	0.986	44	0.000
CO	0.000	0.986	28	0.000
O2	0.205	0.986	32	6.466
N2	0.795	0.986	28	21.940

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	65.3	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27700	acfm	(60*FF*J)
HH.	Standard Flow Rate	25800	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	104.1	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.30	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS — TEST DATE: 03-08-94

TEST SITE 7,8,9 BATTERY PEC — TEST NUMBER: CLR-2-5-1

A.	Barometric Pressure	29.47	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.51	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.85	in. H2O	
E.	Meter Pressure	29.61	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	99	°F	
N.	Average Stack Temperature	559	°R	(460+M)
O.	Average Meter Temperature	64	°F	
P.	Average Meter Temperature	524	°R	(460+O)
Q.	Condensate Volume	6.4	mL	
R.	Absorbed H2O	8.1	mL	
S.	Total H2O	14.5	mL	(Q+R)
T.	Filter Weight	0.0025	g	
U.	Probe Weight	0.0062	g	
V.	Impinger Weight	0.0006	g	
W.	Total Weight	0.0093	g	(T+U+V)
X.	Metered Gas Volume	45.636	dcf	
Y.	Corrected Metered Gas Volume	45.782	dcf	(X*H)
Z.	H2O Gas Volume	0.688	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	46.470	cf	(Y+Z)
BB.	Percent H2O	1.5	%	(100*Z/AA)
CC.	Gas Volume Sampled	45.647	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0031	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.015		18	0.267
CO2	0.000	0.985	44	0.000
CO	0.000	0.985	28	0.000
O2	0.205	0.985	32	6.463
N2	0.795	0.985	28	21.930

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	66.6	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28200	acfm	(60*FF*J)
HH.	Standard Flow Rate	26300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	105.4	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.70	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-09-94
TEST NUMBER: CLR-2-1-2

A.	Barometric Pressure	29.68	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.72	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.06	in. H2O	
E.	Meter Pressure	29.76	in. Hg	[A+(D/13.6)]
F.	Average Δ P	0.9	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	88	°F	
N.	Average Stack Temperature	548	°R	(460+M)
O.	Average Meter Temperature	53	°F	
P.	Average Meter Temperature	513	°R	(460+O)
Q.	Condensate Volume	4.1	mL	
R.	Absorbed H2O	9.7	mL	
S.	Total H2O	13.8	mL	(Q+R)
T.	Filter Weight	0.0029	g	
U.	Probe Weight	0.0015	g	
V.	Impinger Weight	0.0016	g	
W.	Total Weight	0.0060	g	(T+U+V)
X.	Metered Gas Volume	37.041	dcf	
Y.	Corrected Metered Gas Volume	37.408	dcf	(X*H)
Z.	H2O Gas Volume	0.637	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	38.045	cf	(Y+Z)
BB.	Percent H2O	1.7	%	(100*Z/AA)
CC.	Gas Volume Sampled	38.293	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0024	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.017		18	0.301
CO2	0.000	0.983	44	0.000
CO	0.000	0.983	28	0.000
O2	0.205	0.983	32	6.450
N2	0.795	0.983	28	21.887

Average Molecular Weight 28.64 lb./lb. mol

FF.	Average Stack Velocity	54.7	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	23200	acfm	(60*FF*J)
HH.	Standard Flow Rate	22200	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	105.0	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.45	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS — TEST DATE: 03-09-94

TEST SITE 7,8,9 BATTERY PEC — TEST NUMBER: CLR-2-2-2

A.	Barometric Pressure	29.68	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.75	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.08	in. H2O	
E.	Meter Pressure	29.76	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	87	°F	
N.	Average Stack Temperature	547	°R	(460+M)
O.	Average Meter Temperature	45	°F	
P.	Average Meter Temperature	505	°R	(460+O)
Q.	Condensate Volume	4.4	mL	
R.	Absorbed H2O	10.0	mL	
S.	Total H2O	14.4	mL	(Q+R)
T.	Filter Weight	0.0053	g	
U.	Probe Weight	0.0037	g	
V.	Impinger Weight	0.0017	g	
W.	Total Weight	0.0107	g	(T+U+V)
X.	Metered Gas Volume	38.750	dcf	
Y.	Corrected Metered Gas Volume	39.444	dcf	(X*H)
Z.	H2O Gas Volume	0.654	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	40.098	cf	(Y+Z)
BB.	Percent H2O	1.6	%	(100*Z/AA)
CC.	Gas Volume Sampled	41.019	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0040	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.016		18	0.294
CO2	0.000	0.984	44	0.000
CO	0.000	0.984	28	0.000
O2	0.205	0.984	32	6.453
N2	0.795	0.984	28	21.897

Average Molecular Weight 28.64 lb./lb. mol

FF.	Average Stack Velocity	63.0	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	26700	acfm	(60*FF*J)
HH.	Standard Flow Rate	25600	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	107.4	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.87	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS — TEST DATE: 03-09-94

TEST SITE 7,8,9 BATTERY PEC — TEST NUMBER: CLR-2-4-2

A.	Barometric Pressure	29.68	in. Hg	
B.	Static Pressure	0.8	in. H2O	
C.	Stack Pressure	29.74	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.57	in. H2O	
E.	Meter Pressure	29.80	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.20	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	92	°F	
N.	Average Stack Temperature	552	°R	(460+M)
O.	Average Meter Temperature	59	°F	
P.	Average Meter Temperature	519	°R	(460+O)
Q.	Condensate Volume	3.1	mL	
R.	Absorbed H2O	11.4	mL	
S.	Total H2O	14.5	mL	(Q+R)
T.	Filter Weight	0.0023	g	
U.	Probe Weight	0.0064	g	
V.	Impinger Weight	0.0018	g	
W.	Total Weight	0.0105	g	(T+U+V)
X.	Metered Gas Volume	43.627	dcf	
Y.	Corrected Metered Gas Volume	43.863	dcf	(X*H)
Z.	H2O Gas Volume	0.677	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	44.540	cf	(Y+Z)
BB.	Percent H2O	1.5	%	(100*Z/AA)
CC.	Gas Volume Sampled	44.437	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0036	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.015		18	0.274
CO2	0.000	0.985	44	0.000
CO	0.000	0.985	28	0.000
O2	0.205	0.985	32	6.460
N2	0.795	0.985	28	21.922

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	63.3	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	26900	acfm	(60*FF*J)
HH.	Standard Flow Rate	25600	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	104.4	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.79	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-09-94
TEST NUMBER: CLR-2-5-2

A.	Barometric Pressure	29.68	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.72	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.82	in. H2O	
E.	Meter Pressure	29.81	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.4	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	89	°F	
N.	Average Stack Temperature	549	°R	(460+M)
O.	Average Meter Temperature	55	°F	
P.	Average Meter Temperature	515	°R	(460+O)
Q.	Condensate Volume	2.5	mL	
R.	Absorbed H2O	14.0	mL	
S.	Total H2O	16.5	mL	(Q+R)
T.	Filter Weight	0.0019	g	
U.	Probe Weight	0.0044	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0066	g	(T+U+V)
X.	Metered Gas Volume	45.406	dcf	
Y.	Corrected Metered Gas Volume	45.551	dcf	(X*H)
Z.	H2O Gas Volume	0.764	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	46.316	cf	(Y+Z)
BB.	Percent H2O	1.7	%	(100*Z/AA)
CC.	Gas Volume Sampled	46.535	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0022	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.017		18	0.297
CO2	0.000	0.983	44	0.000
CO	0.000	0.983	28	0.000
O2	0.205	0.983	32	6.452
N2	0.795	0.983	28	21.893

Average Molecular Weight 28.64 lb./lb. mol

FF.	Average Stack Velocity	68.2	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28900	acfm	(60*FF*J)
HH.	Standard Flow Rate	27600	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	102.6	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.51	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-10-94
TEST NUMBER: CLR-2-1-3

A.	Barometric Pressure	29.22	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.26	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.09	in. H2O	
E.	Meter Pressure	29.30	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.0	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	93	°F	
N.	Average Stack Temperature	553	°R	(460+M)
O.	Average Meter Temperature	56	°F	
P.	Average Meter Temperature	516	°R	(460+O)
Q.	Condensate Volume	4.6	mL	
R.	Absorbed H2O	7.1	mL	
S.	Total H2O	11.7	mL	(Q+R)
T.	Filter Weight	0.0048	g	
U.	Probe Weight	0.0012	g	
V.	Impinger Weight	0.0008	g	
W.	Total Weight	0.0068	g	(T+U+V)
X.	Metered Gas Volume	37.381	dcf	
Y.	Corrected Metered Gas Volume	37.751	dcf	(X*H)
Z.	H2O Gas Volume	0.552	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	38.303	cf	(Y+Z)
BB.	Percent H2O	1.4	%	(100*Z/AA)
CC.	Gas Volume Sampled	37.829	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0028	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.014		18	0.259
CO2	0.000	0.986	44	0.000
CO	0.000	0.986	28	0.000
O2	0.205	0.986	32	6.466
N2	0.795	0.986	28	21.939

Average Molecular Weight 28.66 lb./lb. mol

FF.	Average Stack Velocity	58.3	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	24700	acfm	(60*FF*J)
HH.	Standard Flow Rate	23100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	99.4	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.54	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-10-94
TEST NUMBER: CLR-2-2-3

A.	Barometric Pressure	29.22	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.29	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.15	in. H2O	
E.	Meter Pressure	29.30	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	90	°F	
N.	Average Stack Temperature	550	°R	(460+M)
O.	Average Meter Temperature	49	°F	
P.	Average Meter Temperature	509	°R	(460+O)
Q.	Condensate Volume	0.7	mL	
R.	Absorbed H2O	11.0	mL	
S.	Total H2O	11.7	mL	(Q+R)
T.	Filter Weight	0.0062	g	
U.	Probe Weight	0.0061	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0126	g	(T+U+V)
X.	Metered Gas Volume	37.699	dcf	
Y.	Corrected Metered Gas Volume	38.374	dcf	(X*H)
Z.	H2O Gas Volume	0.544	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	38.918	cf	(Y+Z)
BB.	Percent H2O	1.4	%	(100*Z/AA)
CC.	Gas Volume Sampled	38.987	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0050	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.014		18	0.252
CO2	0.000	0.986	44	0.000
CO	0.000	0.986	28	0.000
O2	0.205	0.986	32	6.468
N2	0.795	0.986	28	21.949

Average Molecular Weight 28.67 lb./lb. mol

FF.	Average Stack Velocity	63.7	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27000	acfm	(60*FF*J)
HH.	Standard Flow Rate	25400	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	102.6	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.07	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-10-94
TEST NUMBER: CLR-2-4-3

A.	Barometric Pressure	29.22	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.29	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.64	in. H2O	
E.	Meter Pressure	29.34	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	93	°F	
N.	Average Stack Temperature	553	°R	(460+M)
O.	Average Meter Temperature	52	°F	
P.	Average Meter Temperature	512	°R	(460+O)
Q.	Condensate Volume	4.5	mL	
R.	Absorbed H2O	8.1	mL	
S.	Total H2O	12.6	mL	(Q+R)
T.	Filter Weight	0.0076	g	
U.	Probe Weight	0.0048	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0126	g	(T+U+V)
X.	Metered Gas Volume	45.050	dcf	
Y.	Corrected Metered Gas Volume	45.293	dcf	(X*H)
Z.	H2O Gas Volume	0.589	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	45.883	cf	(Y+Z)
BB.	Percent H2O	1.3	%	(100*Z/AA)
CC.	Gas Volume Sampled	45.804	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0042	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.013		18	0.231
CO2	0.000	0.987	44	0.000
CO	0.000	0.987	28	0.000
O2	0.205	0.987	32	6.476
N2	0.795	0.987	28	21.974

Average Molecular Weight 28.68 lb./lb. mol

FF.	Average Stack Velocity	63.8	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27100	acfm	(60*FF*J)
HH.	Standard Flow Rate	25300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	108.6	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.91	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 7,8,9 BATTERY PEC

TEST DATE: 03-10-94
TEST NUMBER: CLR-2-5-3

A.	Barometric Pressure	29.22	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.26	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.88	in. H2O	
E.	Meter Pressure	29.36	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.4	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.190	in.	
L.	Nozzle Area	1.97E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	90	°F	
N.	Average Stack Temperature	550	°R	(460+M)
O.	Average Meter Temperature	55	°F	
P.	Average Meter Temperature	515	°R	(460+O)
Q.	Condensate Volume	0.6	mL	
R.	Absorbed H2O	13.0	mL	
S.	Total H2O	13.6	mL	(Q+R)
T.	Filter Weight	0.0023	g	
U.	Probe Weight	0.0023	g	
V.	Impinger Weight	0.0001	g	
W.	Total Weight	0.0047	g	(T+U+V)
X.	Metered Gas Volume	46.546	dcf	
Y.	Corrected Metered Gas Volume	46.695	dcf	(X*H)
Z.	H2O Gas Volume	0.640	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	47.335	cf	(Y+Z)
BB.	Percent H2O	1.4	%	(100*Z/AA)
CC.	Gas Volume Sampled	46.975	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0015	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.014		18	0.243
CO2	0.000	0.986	44	0.000
CO	0.000	0.986	28	0.000
O2	0.205	0.986	32	6.471
N2	0.795	0.986	28	21.959

Average Molecular Weight 28.67 lb./lb. mol

FF.	Average Stack Velocity	68.8	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	29200	acfm	(60*FF*J)
HH.	Standard Flow Rate	27400	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	104.0	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.36	lb/hr	[DD*HH*(1-BB/100)*60/7000]