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.

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USS CLAIRTON WORKS
A DIVISION OF USX CORPORATION
CLAIRTON, PA

Report on
COMPLIANCE DEMONSTRATION
1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

FEBRUARY 1993

Prepared By: CHESTER ENVIRONMENTAL
Project No.: 300196-01

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BUREAU OF
AIR POLLUTION CONTROL

CHESTER
ENVIRONMENTAL

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ABSTRACT

A demonstration of the pushing emissions control system for Batteries 1, 2, and 3 operated at USS Clairton Works was conducted on November 3, 4, and 5, 1992. 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 1, 2, or 3.

The results of the testing showed an average particulate matter emissions rate of 0.35 lbs per hour, while the allowable emissions rate is 4.35 lbs per hour. No visible emissions were observed from any of the baghouse stacks during the test program. Over the three day test program, a maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 14 times (all cases occurring on the second day of the test program), while a maximum plume opacity during the travelling operation greater than 10 percent was observed on six of the 60 cases on the first day of the test program, 15 of the 60 cases on the second day of the test program, and none of the 60 cases on the second day of the test program. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 0.5 seconds. During the travelling operation, the plume opacity was greater than 10 percent for an average of 1.4 seconds.

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 1, 2, and 3 operated at USS Clairton Works was conducted on November 3, 4, and 5, 1992. A baghouse controls the emissions which result from the pushing operations from the ovens of Batteries 1, 2, and 3. 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 1, 2, or 3.

The field work activities were completed by Chester Environmental. The test crew included David Beranek, Richard Casselberry, Mark Grunebach, Bernie May, Darren McKoy, Paul Pastorik, Tim Redenbaugh, John Shimshock, and Patrick Stockton. All test procedures were witnessed by the Allegheny County Health Department Bureau of Air Pollution Control (BAPC).

2.0 METHODOLOGIES

A test protocol was prepared by Chester Environmental and submitted to BAPC 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 were 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 determined 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 determined with the use of a Bacharach "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 determined by measuring 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 train included a water and acetone rinse of both the front-half and back-half components. The water soluble and water insoluble portions of the front-half of the sampling train were determined as a total, while the water soluble and water insoluble portions of the back-half were determined separately. The back-half water and the water soluble rinses of the back-half components of the sampling train were treated in accordance with Section 139.12 of the DER Source Testing Manual.

All plume opacity determinations were performed in accordance with EPA Method 9 and Section F of Chapter 18 of the BAPC 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 for one minute for each push in which emissions testing was conducted.

3.0 RESULTS

All testing was performed during periods of normal plant operation. Copies of the plant operational data for each day of the test program for Batteries 1, 2, and 3 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 BAPC can be found in Appendix C. The post test calibration of the control box used on Stack 1-4 yielded an average dry gas meter coefficient which was more than five percent lower than the dry gas meter coefficient determined during the initial three point calibration of the control box. Therefore, in accordance with EPA Method 5, the lower coefficient was used in the emissions calculations.

Copies of the field data sheets can be found in Appendix A. The analytical results and emissions calculations for each test can be found in Appendix D. The results have been summarized in Tables 3-1, 3-2, 3-3, and 3-4. The total particulate matter emissions rates for each day of testing was obtained by summing the emissions rates from each stack. The three day average particulate matter emissions rate is 2.16 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, 9.63 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:

$$\frac{2.16 \text{ lb}}{\text{hr pushing}} \times \frac{1 \text{ hr pushing}}{60 \text{ min pushing}} \times \frac{1 \text{ min pushing}}{1 \text{ push}} \times \frac{9.63 \text{ pushes}}{\text{hr}} = 0.35 \text{ lbs/hr}$$

The allowable particulate matter emissions rate is equal to 0.04 lbs per ton of coke pushed. Since there were on average 11.3 tons of coke per oven, and on average 9.63 ovens were pushed per hour, the particulate matter emissions rate is equal to (0.04 lbs / ton coke pushed) x (11.3 tons coke pushed / oven) x (9.63 ovens pushed / hour), or

TABLE 3-1

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 1
TEST DATE: 11-3-92
TEST TIME: 9:08 TO 15:11

Stack Number Test Number		1-1 CLR-1-1-1	1-2 CLR-1-2-1	1-3 CLR-1-3-1	1-4 CLR-1-4-1	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.43	0.38	0.89	0.69	2.39
	(gr/dscf)	0.0023	0.0020	0.0049	0.0037	
Stack Conditions						
Flow Rate	(acfm)	25807	26687	24216	25123	
	(scfm)	22227	23197	21357	22024	
	(dscfm)	21791	22775	20947	21634	
Temperature	(°F)	142	137	128	132	
Moisture Content	(%)	2.0	1.8	1.9	1.8	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	34.216	33.665	26.211	25.679	
Isokinetics	(%)	104.7	98.5	108.3	102.7	

TABLE 3-2

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 2
TEST DATE: 11-4-92
TEST TIME: 8:29 TO 15:08

Stack Number Test Number		1-1 CLR-1-1-2	1-2 CLR-1-2-2	1-3 CLR-1-3-2	1-4 CLR-1-4-2	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.72	0.47	0.84	0.79	2.81
	(gr/dscf)	0.0035	0.0022	0.0041	0.0036	
Stack Conditions						
Flow Rate	(acfm)	28656	29354	28359	29564	
	(scfm)	24398	25293	24793	26012	
	(dscfm)	23859	24691	24265	25450	
Temperature	(°F)	144	137	128	125	
Moisture Content	(%)	2.2	2.4	2.1	2.2	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	36.051	37.565	29.641	28.251	
Isokinetics	(%)	100.8	101.4	105.7	96.0	

TABLE 3-3

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 3
TEST DATE: 11-5-92
TEST TIME: 8:18 TO 14:23

Stack Number Test Number		1-1 CLR-1-1-3	1-2 CLR-1-2-3	1-3 CLR-1-3-3	1-4 CLR-1-4-3	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.27	0.19	0.42	0.41	1.29
	(gr/dscf)	0.0013	0.0008	0.0019	0.0018	
Stack Conditions						
Flow Rate	(acfm)	28269	29316	27958	29036	
	(scfm)	25116	26387	25569	26604	
	(dscfm)	24702	25999	25109	26157	
Temperature	(°F)	121	113	104	103	
Moisture Content	(%)	1.7	1.5	1.8	1.7	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	37.973	40.115	32.683	30.884	
Isokinetics	(%)	102.5	102.9	112.6	102.2	

TABLE 3-4

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 1, 2, AND 3
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	11-3-92	2.39
2	11-4-92	2.81
3	11-5-92	1.29
Average		2.16

4.35 lbs per hour. The average particulate matter emissions rate determined in the test program is less than the allowable emissions rate.

Tables 3-1, 3-2, and 3-3 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% and 110% is considered acceptable. All sample volumes were greater than 25 dscf per test. One of the twelve isokinetics values was slightly above the acceptable range of values. However, the emissions rates determined in this test program were low in comparison with the standard.

The plume opacity data has been summarized in Table 3-5. No visible emissions were observed from any of the baghouse stacks during the test program. Over the three day test program, a maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 14 times, with all cases occurring on the second day of the test program. For these particular cases, a maximum plume opacity during the travelling operation greater than 10 percent was observed 12 times.

Over the three day test program, a maximum plume opacity during the travelling operation greater than 10 percent was observed on six of the 60 cases on the first day of the test program, 15 of the 60 cases on the second day of the test program, and none of the 60 cases on the third day of the test program.

A pushing performance or travel performance of 100 percent was registered if the maximum plume opacity observed during the pushing or travelling operation was less than 20 percent or less than or equal to 10 percent, respectively. A pushing performance or travel performance of 0 percent was registered if the maximum plume opacity was greater than or equal to 20 percent or greater than 10 percent, respectively.

TABLE 3-5

USS CLAIRTON WORKS
CLAIRTON, PA

1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL
VISIBLE EMISSIONS DATA SUMMARY

Baghouse Stacks

Observation Date	Number of Observations	Greatest Opacity (%)
11-3-92	240	0
11-4-92	240	0
11-5-92	240	0

Pushing Operation

Observation Date	Number of Observations	Number of Observations with Opacity >=20%	Pushing Performance (%)	Average Time with Opacity > 20% (sec)
11-3-92	60	0	100	0
11-4-92	60	14	76.7	1.6
11-5-92	60	0	100	0
Average			92.2	0.5

Travelling Operation

Observation Date	Number of Observations	Number of Observations with Opacity >10%	Travelling Performance (%)	Average Time with Opacity >=10% (sec)
11-3-92	60	6	90.0	1.1
11-4-92	60	15	75.0	3.2
11-5-92	60	0	100.0	0.0
Average			88.3	1.4

The average pushing performance for test program was 92.2 percent, while the average travel performance was 88.3 percent. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 0.5 seconds. During the travelling operation, the plume opacity was greater than 10 percent for an average of 1.4 seconds.

COMPLIANCE DEMONSTRATION
1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX A

TEST PROTOCOL, FIELD DATA SHEETS

COMPLIANCE TEST PROTOCOL
BATTERIES 1, 2, & 3
PUSHING EMISSIONS CONTROL SYSTEM

Prepared for:

USS CLAIRTON WORKS
CLAIRTON, PA

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES
3000 TECH CENTER DRIVE
MONROEVILLE, PA 15146

PROJECT NUMBER: 300196-01

OCTOBER 1992

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

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 1, 2, and 3 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 Pollution Control (BAPC) 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. A schematic diagram of the stack and traverse points is presented in Figure 1.

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 BAPC Method 18F. Visible

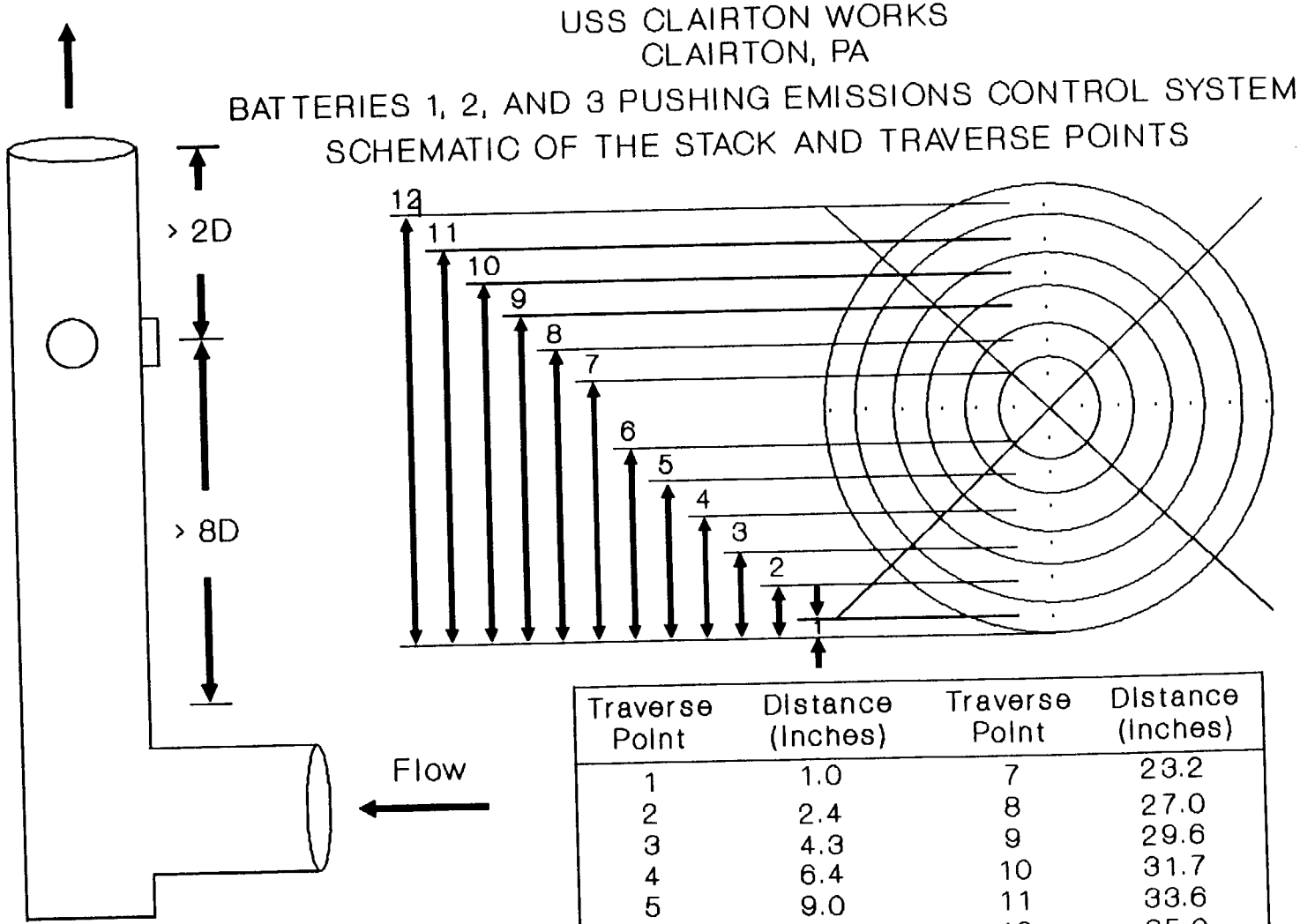
emissions will be recorded for the duration of each of the sixty oven pushes. All plume opacity measurements will also be performed in accordance with EPA Method 9 and BAPC Method 18F. During the pushing operation, the maximum plume opacity and length of time (in seconds) when the plume opacity is greater 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 BAPC, field data sheets for the particulate matter sampling and visible emissions determinations, computer-generated emissions calculations, and analytical results for each test.

FIGURE 1

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 1, 2, AND 3 PUSHING EMISSIONS CONTROL SYSTEM
SCHEMATIC OF THE STACK AND TRAVERSE POINTS



Traverse Point	Distance (Inches)	Traverse Point	Distance (Inches)
1	1.0	7	23.2
2	2.4	8	27.0
3	4.3	9	29.6
4	6.4	10	31.7
5	9.0	11	33.6
6	12.8	12	35.0

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1,2,3 PEC 11-03-92 RPC

9.94 pushes/hr

#	OVEN	BATTERY	TIME
1	B-25	2	9:08
2	A-25	3	9:14
3	B-27	2	9:19
4	A-27	3	9:25
5	B-29	2	9:31
6	A-29	3	9:36
7	B-31	2	9:42
8	A-31	3	9:47
9	C-2	2	9:53
10	B-2	3	10:01
11	A-2	1	10:07
12	B-4	3	10:12
13	A-4	1	10:18
14	B-3	3	10:25
15	A-6	1	10:31
16	B-8	3	10:36
17	A-8	1	10:43
18	B-10	3	10:48
19	A-10	1	10:54
20	B-12	3	10:59
21	A-12	1	11:05
22	B-14	3	11:11
23	A-14	1	11:17
24	B-16	3	11:23
25	A-16	1	11:29
26	B-18	3	11:34
27	A-18	1	11:40
28	B-20	3	11:46
29	A-20	1	11:51
30	B-22	3	11:58

#	OVEN	BATTERY	TIME
31	A-22	1	12:34
32	B-24	3	12:39
33	A-24	1	12:45
34	B-26	3	12:50
35	A-26	1	12:56
36	B-28	3	13:01
37	A-28	1	13:07
38	B-30	3	13:12
39	A-30	1	13:18
40	C-2	3	13:23
41	B-1	1	13:29
42	A-1	2	13:33
43	B-3	1	13:39
44	A-3	2	13:44
45	B-5	1	13:50
46	A-5	2	13:55
47	B-7	1	14:01
48	A-7	2	14:06
49	B-9	1	14:11
50	A-9	2	14:16
51	B-11	1	14:22
52	A-11	2	14:27
53	B-13	1	14:33
54	A-13	2	14:38
55	B-15	1	14:44
56	A-15	2	14:49
57	B-17	1	14:54
58	A-17	2	14:59
59	B-19	1	15:05
60	A-19	2	15:10

1,2,3 PEC 11-04-92 RPC

9.05 pushes/hr

	#	OVEN	BATTERY	TIME
	1	C-1	3	08:29
	2	B-1	1	08 35
	3	A-1	2	08 40
	4	B-3	1	08 46
	5	A-3	2	08:51
	6	B-5	1	08:57
	7	A 5	2	09:01
	8	B-7	1	09:10
A-7	9	A-7	2	09:15
	10	B-9	1	09:21
A-9	11	A-9	2	09:26
	12	B-11	1	09:32
A-11	13	A-11	2	09:38
	14	B-13	1	09:44
A-13	15	A-13	2	09:49
	16	B-15	1	09:56
A-15	17	A-15	2	10:01
	18	B-17	1	10:07
A-17	19	A-17	2	10:12
B-19	20	B-19	1	10:18
A-19	21	A-19	2	10:23
B-21	22	B-21	1	10:29
A-21	23	A-21	2	10:34
	24	B-23	1	10:40
	25	B-23	2	10:44
	26	B-25	1	10:50
	27	B-25	2	10:55
	28	B-27	1	11:01
	29	A-27	2	12:08
	30	B-29	1	12:14

#	OVEN	BATTERY	TIME
31	A-29	2	12:19
32	B-31	1	12:25
33	A-31	2	12:29
34	C-1	1	12:35
35	A-2	3	12:42
36	B-2	2	12:54
37	B-4	2	13:01
38	A-4	3	13:05
39	B-6	2	13:11
40	A-6	3	13:16
41	B-8	2	13:22
42	A-8	3	13:27
43	B-10	2	1333
44	A-10	3	13:38
45	B-12	2	13:44
46	A-12	3	13:49
47	B-14	2	13:55
48	A-14	3	14:00
49	B-16	2	14:06
50	A-16	3	14:12
51	B-18	2	14:17
52	A-18	3	14:23
53	B-20	2	14:29
54	A-20	3	14:34
55	B-22	2	14:39
[illegible]	[illegible]-22	3	14:45
57	B-24	2	14:51
[illegible]	[illegible]-24	3	14:56
[illegible]	[illegible]-26	2	[illegible]
60	A-26	3	15:07

1,2,3 PEC — 11-05-92 — RPC

#	OVEN	BATTERY	TIME
1	A-4	3	08:18
3	B-6	2	08:25
3	A-6	3	09:31
4	B-8	2	08:37
5	A-8	3	08:45
6	B-10	2	08:51
7	A-10	3	08:56
8	B-12	2	09:02
9	A-12	3	09:08
10	B-14	2	09:14
11	A-14	3	09:19
12	B-16	2	09:25
13	A-16	3	09:30
14	B-18	2	09:36
15	A-18	3	09:41
16	B-20	2	09:46
17	A-20	3	09:54
18	B-22	2	10:00
19	A-22	3	10:05
20	B-24	2	10:11
21	A-24	3	10:16
22	B-26	2	10:22
23	A-26	3	10:27
24	B-28	2	10:33
25	A-28	3	10:38
26	B-30	2	10:44
27	A-30	3	10:49
28	C-1	2	10:55
29	B-1	3	11:01
30	A-1	1	11:07

9.89 pushes/hr

A-23

B-29

A-29

B-31

A-31

#	OVEN	BATTERY	TIME
31	B-3	3	11:12
32	A-3	1	11:18
33	B-5	3	11:24
34	A-5	1	11:29
35	B-7	3	11:35
36	A-7	1	11:41
37	B-9	3	11:46
38	A-9	1	11:52
39	B-11	3	11:57
40	A-11	1	12:33
41	B-13	3	12:38
42	A-13	1	12:44
43	B-15	3	12:48
44	A-15	1	12:54
45	B-17	3	12:59
46	A-17	1	13:04
47	B-19	3	13:09
48	A-19	1	13:18
49	B-21	3	13:22
50	A-21	1	13:28
51	B-23	3	13:33
52	A-23	1	13:38
53	B-25	3	13:43
54	A-25	1	13:49
55	B-27	3	13:53
56	A-27	1	13:59
57	B-29	3	14:03
58	A-29	1	14:11
59	B-31	3	14:16
60	A-31	1	14:22

STACK 1-1

(1)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery Pot
PROJECT NO. 300196-01
CONTROL BOX OPERATOR M.G
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.180 #22
STATIC PRESSURE 0.80
PORT DIRECTION East

ORIFICE CORRECTION 1.756
METER CORRECTION 0.9721
CALIBRATION DATE 6-3-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 4

HOT BOX NO. 7
COLD BOX NO. 7
PROBE NO. 5-1
FILTER NO. 137 QTZ
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		512.407	1.5	1.46	1.46	61	60	8.0	128	250	<68°F	250	1 min/point
33.6		513.730	1.55	1.50	1.50	61	61	8.0	130		Iced Down		
31.7		514.449	1.55	1.50	1.50	62	61	8.0	132				
29.6		515.111	1.45	1.40	1.40	64	63	8.0	134				
27.0		515.813	1.40	1.33	1.33	65	64	7.0	135				
23.2		516.510	1.30	1.25	1.25	65	65	7.0	139				
12.8		517.122	1.0	.97	.97	65	65	5.5	140				
9.0		517.717	1.0	.94	.94	68	67	5.5	142				
6.4		518.323	.95	.89	.89	68	67	5.5	144				
4.3		518.902	.90	.84	.84	68	67	5.0	140				
2.4		519.455	.95	.89	.89	69	67	5.5	135				
1.0		520.009	.85	.80	.80	70	68	5.0	129				
		520.604											
													Estimates:
													MW=28.7
													%H2O=2%

LEAK CHECK

	in. Hg	Rate (cfm)
Before	5.0	0.005
After	8.0	~~0.006~~ 0.002

PITOT LEAK CHECK

POS.	NEG.
15 sec OK	15 sec OK
15 sec OK	15 sec OK

	1	2
CO2	0.0	
O2	20.5	AIR
CO	0.0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H_2O	554.5	547.4	7.1
2.	100mL H_2O	535.5	534.4	1.1
3.	Empty	436.2	436.0	0.2
4.	Silica Gel	587.5	581.4	6.1
5.				

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK 1-1

(2)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 3001961-01
CONTROL BOX OPERATOR M.G
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.180 #22
STATIC PRESSURE .85
PORT DIRECTION EAST

ORIFICE CORRECTION 1.756
METER CORRECTION 0.9721
CALIBRATION DATE 6-3-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 4

HOT BOX NO. 7
COLD BOX NO. 7
PROBE NO. S-1
FILTER NO. 137 QTZ
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		520.604	.90	.84	.84	[redacted]	69	5.0	128	250	<68°F	250	1 minute/point
2.4		521.202	.95	.89	.89	70	69	5.5	130		Teed Dan		
4.3		521.803	.95	.89	.89	71	70	5.5	141				
6.4		522.381	.90	.86	.86	72	70	5.0	140				
9.0		523.001	1.0	.96	.96	73	71	5.5	144				
12.8		523.605	1.0	.96	.96	74	73	5.5	145				
23.2		524.237	1.1	1.06	1.06	74	73	6.0	144				
27.0		524.850	1.0	.96	.96	75	73	5.5	142				
29.6		525.461	1.0	.96	.96	74	74	5.5	141				
31.7		526.080	.90	.84	.84	75	74	5.0	139				
33.6		526.656	.90	.84	.84	75	75	5.0	140				
35.0		527.204	.75	.72	.72	75	75	5.0	141				
		527.756											Estimates:
													MW=
													%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

PITOT LEAK CHECK

POS.	NEG.

KEYSTONE
ENVIRONMENTAL RESOURCES INC

STACK 1-1

(3)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery Pkg
PROJECT NO. 30096-101
CONTROL BOX OPERATOR MG
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLP-1-1-1
NOZZLE (SIZE,#) 0.180 #22
STATIC PRESSURE 0.80
PORT DIRECTION EAST

ORIFICE CORRECTION 1.756
METER CORRECTION 0.9721
CALIBRATION DATE 6-3-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 4

HOT BOX NO. 7
COLD BOX NO. 7
PROBE NO. 5-1
FILTER NO. 137 072
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		527.756	.80	.77	.77	75	75	5.0	145	250	<68°F	250	1 minute/point
33.6		528.311	.80	.77	.77	75	75	5.0	144		Feed Down		
31.7		528.985	1.2	1.15	1.15	76	75	6.0	146				
29.6		529.610	1.0	.96	.96	76	75	5.5	146				
27.0		530.245	1.1	1.06	1.06	76	75	5.5	144				
23.2		530.858	1.0	.96	.96	77	76	5.5	142				
12.8		531.444	1.0	.96	.96	77	76	5.5	141				
9.0		532.061	1.0	.96	.96	78	77	5.5	137				
6.4		532.620	1.0	.96	.96	78	77	5.5	143				
4.3		533.248	.95	.89	.89	78	78	5.0	135				
2.4		533.845	.90	.84	.84	78	78	5.0	136				
1.0		534.418	1.0	.96	.96	78	78	5.5	133				
		534.961											

Estimates:
MW=
%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

PITOT LEAK CHECK

POS.	NEG.

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

KEYSTONE
ENVIRONMENTAL RESOURCES INC

STACK 1-1

STACK SAMPLING DATA SHEET

(4)

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196-101
CONTROL BOX OPERATOR MG
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.180 #22
STATIC PRESSURE 0.80
PORT DIRECTION SOUTH

ORIFICE CORRECTION 1.756
METER CORRECTION 0.9721
CALIBRATION DATE 6-3-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 4

HOT BOX NO. 7
COLD BOX NO. 7
PROBE NO. S-1
FILTER NO. 37 072
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		534.961	1.0	.96	.96	79	78	5.5	143	250	<68°F	250	Immunite/point
33.6		535.572	1.0	.96	.96	80	79	5.5	145		Ice Down		
31.7		536.208	1.1	1.06	1.06	80	79	6.0	146				
29.6		536.831	1.1	1.06	1.06	80	79	6.0	144				
27.0		537.453	1.1	1.06	1.06	80	80	6.0	147				
23.2		538.115	1.1	1.06	1.06	81	80	6.0	146				
12.8		538.723	.90	.84	.84	82	81	5.0	149				
9.0		539.255	.80	.77	.77	82	81	5.0	147				
6.4		539.832	.90	0.86	0.86	82	81	5.0	149				
4.3		540.448	1.0	.96	.96	82	82	5.5	143				
2.4		540.940	.80	.77	.77	83	82	5.0	142				
1.0		541.357	.50	.48	.48	84	82	4.0	142				
		541.927											Estimates:
													MW=
													%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

PITOT LEAK CHECK

POS.	NEG.

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

KEYSTONE
ENVIRONMENTAL RESOURCES INC

STACK 1-1

(5)

STACK SAMPLING DATA SHEET

CLIENT	USS Clairton Works	TEST DATE	11-3-92	ORIFICE CORRECTION	1.756	HOT BOX NO.	7
TEST UNIT	1-3 Battery POC	TEST NO.	EAR-1-1-1	METER CORRECTION	0.9721	COLD BOX NO.	7
PROJECT NO.	300196-01	NOZZLE (SIZE,#)	0.180 #22	CALIBRATION DATE	6-3-92	PROBE NO.	5-1
CONTROL BOX OPERATOR	MG	STATIC PRESSURE	0.80	PITOT CORRECTION	0.84	FILTER NO.	137 QTZ
BAROMETRIC PRESSURE	29.32	PORT DIRECTION	SOUTH	CONTROL BOX NO.	4	STACK DIA.	36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		541.927	.85	.72	.72	84	83	5.0	138	250	<68°F	250	1 minute/point
2.4		542.459	.80	.77	.77	84	84	5.0	142		Ice Bath		
4.3		543.049	1.0	.96	.96	84	84	5.5	134				
6.4		543.608	.90	.86	.86	85	84	5.0	146				
9.0		544.161	.90	.86	.86	85	84	5.0	149				
12.8		544.762	.90	.86	.86	85	83	5.0	154				
23.2		545.405	1.1	1.06	1.06	85	84	6.0	153				
27.0		546.064	1.2	1.15	1.15	85	84	6.0	152				
29.6		546.764	1.3	1.25	1.25	85	84	6.5	154				
31.7		547.460	1.2	1.15	1.15	85	84	6.0	151				
33.6		548.104	1.1	1.06	1.06	85	84	6.0	155				
35.0		548.748	1.1	1.06	1.06	85	84	6.0	153				
													Estimates:
													MW=
													%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

PITOT LEAK CHECK

POS.	NEG.

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC

STACK 1-2

(1)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 200196 -01
CONTROL BOX OPERATOR JB
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92.
TEST NO. CLR-1-2-1
NOZZLE (SIZE,#) 0.180 #11
STATIC PRESSURE 0.8
PORT DIRECTION East

ORIFICE CORRECTION 1.618
METER CORRECTION 0.9915
CALIBRATION DATE 5-5-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT BOX NO. 5
COLD BOX NO. 5
PROBE NO. 5-4
FILTER NO. 134 QTZ
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		897.511	1.80	1.60	1.60	69	61	8.0	124	250	<68°F	250	1 minute/point
33.6		898.237	1.70	1.51	1.51	72	64	8.0	124		Iced Down		
31.7		898.942	1.80	1.60	1.60	74	63	8.0	126				
29.6		899.660	1.60	1.43	1.43	75	65	7.0	128				
27.0		900,344	1.50	1.34	1.34	76	66	7.0	130				
23.2		901,025	1.30	1.15	1.15	77	67	6.0	130				
12.8		901.650	1.10	0.97	0.97	77	67	5.0	134				
9.0		902.235	1.10	0.97	0.97	78	70	5.0	134				
6.4		902.813	1.10	0.97	0.97	79	69	5.0	135				
4.3		903.400	1.10	0.97	0.97	79	71	5.0	131				
2.4		903.993	0.90	0.80	0.80	80	71	4.0	130				
1.0		904.542	0.70	0.62	0.62	82	73	3.5	130				
		905.035											Estimates:
													MW=28.7
													%H2O=2%

LEAK CHECK

	in. Hg	Rate (cfm)
Before	5.0	0.016
After	8.0	0.010

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

PITOT LEAK CHECK

POS.	NEG.
15sec OK	15sec OK
15sec OK	15sec OK

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100ml H_2O	552.5	545.7	6.8
2.	100ml H_2O	571.2	570.5	0.7
3.	Empty	462.6	462.4	0.2
4.	Silica Gel	676.4	670.9	5.5
5.				

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK 1-2

STACK SAMPLING DATA SHEET

(2)

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 30096-01
CONTROL BOX OPERATOR JPS
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-2-1
NOZZLE (SIZE,#) 0.180 #11
STATIC PRESSURE 0.8
PORT DIRECTION East

ORIFICE CORRECTION 1.618
METER CORRECTION 0.9915
CALIBRATION DATE 5-5-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT BOX NO. 5
COLD BOX NO. 5
PROBE NO. 5-4
FILTER NO. 134 QTZ
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		905.035	0.70	0.62	0.62	81	72	3.5	130	250	68°F	250	1 min/pt
2.4		905.517	1.00	0.90	0.90	82	74	4.5	130		Ice Down		
4.3		906.095	1.10	0.99	0.99	83	74	5.0	131				
6.4		906.680	1.10	0.99	0.99	84	74	5.0	135				
9.0		907.277	1.10	0.99	0.99	84	76	5.0	136				
12.8		907.864	1.10	0.99	0.99	85	76	5.0	137				
23.2		908.468	1.20	1.08	1.08	85	77	5.0	134				
27.0		909.087	1.20	1.08	1.08	86	76	5.0	135				
29.6		909.705	1.20	1.08	1.08	86	78	5.0	136				
31.7		910.326	0.80	0.72	0.72	85	77	4.0	137				
33.6		910.850	0.80	0.72	0.72	85	79	4.0	137				
35.0		911.362	1.00	0.90	0.90	88	78	4.5	136				
		911.927											

Estimates:
MW=
%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

PITOT LEAK CHECK

POS.	NEG.

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

KEYSTONE
ENVIRONMENTAL RESOURCES INC

STACK 1-2

(3)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery POC
PROJECT NO. 3001961.01
CONTROL BOX OPERATOR JPS
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-2-1
NOZZLE (SIZE,") 0.180 #11
STATIC PRESSURE 0.8
PORT DIRECTION East

ORIFICE CORRECTION 1.618
METER CORRECTION 0.9915
CALIBRATION DATE 5-5-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT BOX NO. 5
COLD BOX NO. 5
PROBE NO. 5-4
FILTER NO. 134 QTZ
STACK DIA. 36"

Traverse Point	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		911.927	1.00	0.90	0.90	87	79	4.5	136	250	46°F	250	1 minute/point
33.6		912.510	0.90	0.81	0.81	87	79	4.0	136		Ice Bath		
31.7		913.053	0.90	0.81	0.81	87	80	4.0	136				
29.6		913.611	1.00	0.90	0.90	88	79	4.5	137				
27.0		914.186	1.10	0.99	0.99	88	80	5.0	137				
23.2		914.786	1.10	0.99	0.99	88	79	5.0	139				
12.8		915.392	1.10	0.99	0.99	88	82	5.0	135				
9.0		915.980	1.20	1.08	1.08	90	82	5.0	135				
6.4		916.598	1.20	1.08	1.08	90	83	5.0	136				
4.3		917.235	1.20	1.08	1.08	90	81	5.0	133				
2.4		917.861	1.00	0.90	0.90	90	83	4.5	131				
1.0		918.434	0.80	0.72	0.72	91	82	4.0	130				
		918.958											
													Estimates:
													MW=
													%H2O=

LEAK CHECK

	in. Hg	Rate (cfm)
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

PITOT LEAK CHECK

POS.	NEG.

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK 1-2

(4)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-3-92	ORIFICE CORRECTION 1.618	HOT BOX NO. 5
TEST UNIT 1-3 Battery PEC	TEST NO. CLR-1-2-1	METER CORRECTION 0.9915	COLD BOX NO. 5
PROJECT NO. 32196 401	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	PROBE NO. 5-4
CONTROL BOX OPERATOR JPS	STATIC PRESSURE 0.8	PITOT CORRECTION 0.84	FILTER NO. 134 CST2
BAROMETRIC PRESSURE 29.32	PORT DIRECTION South	CONTROL BOX NO. 3	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		918.958	1.00	0.90	0.90	90	83	4.5	137	250	46°F	250	1-minute point
33.6		919.537	1.30	1.17	1.17	92	83	6.0	139		Iced Down		
31.7		920.174	1.30	1.17	1.17	92	84	6.0	140				
29.6		920.841	1.30	1.17	1.17	92	83	6.0	141				
27.0		921.480	1.40	1.26	1.26	92	85	6.0	140				
23.2		922.132	1.30	1.17	1.17	93	85	6.0	141				
12.8		922.776	0.90	0.81	0.81	93	88	4.0	141				
9.0		923.320	0.90	0.81	0.81	94	88	4.0	142				
6.4		923.838	0.90	0.82	0.82	93	87	4.0	144				
4.3		924.382	0.90	0.82	0.82	93	86	4.0	137				
2.4		924.929	0.90	0.82	0.82	93	86	4.0	135				
1.0		925.489	0.80	0.73	0.73	94	86	4.0	134				
		926.020											

Estimates:
MW=
%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-2

(5)

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-3-92 | ORIFICE CORRECTION 1.618 | HOT BOX NO. 5
TEST UNIT 1-3 Battery PCE | TEST NO. CLR-1-2-1 | METER CORRECTION 0.9915 | COLD BOX NO. 5
PROJECT NO. 300196/-01 | NOZZLE (SIZE,#) 0.180 #11 | CALIBRATION DATE [redacted]5-5-92 | PROBE NO. 5-4
CONTROL BOX OPERATOR JB | STATIC PRESSURE 0.8 | PITOT CORRECTION 0.84 | FILTER NO. 134 QTZ
BAROMETRIC PRESSURE 29.32 | PORT DIRECTION South | CONTROL BOX NO. 3 | STACK DIA. 76"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		926.020	0.80	0.73	0.73	94	86	4.0	130	250	46°F	250	1 minute/point
2.4		926.540	0.90	0.82	0.82	94	88	4.0	133		Iced Down		
4.3		927.095	1.00	0.91	0.91	95	89	4.5	137				
6.4		927.670	1.00	0.91	0.91	95	90	4.5	145				
9.0		928.239	0.90	0.82	0.82	95	90	4.0	148				
11.3		928.770	0.90	0.82	0.82	95	90	4.0	147				
23.2		929.318	1.30	1.18	1.18	95	88	5.5	147				
27.0		[redacted]929.967	1.30	1.18	1.18	95	89	5.5	146				
29.6		930.615	1.30	1.18	1.18	95	88	5.5	148				
31.7		931.264	1.10	1.00	1.00	95	89	5.0	147				
33.6		931.865	1.30	1.18	1.18	94	87	5.5	151				
35.0		932.507	0.90	0.82	0.82	94	90	4.0	147				
		933.063											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-3-92 | ORIFICE CORRECTION 1.768 | HOT BOX NO. 8
TEST UNIT 1-3 Battery Pit | TEST NO. CLR-1-3-1 | METER CORRECTION 1.0295 | COLD BOX NO. 8
PROJECT NO. 30096-101 | NOZZLE (SIZE,#) #16 .158 | CALIBRATION DATE 10-16-92 | PROBE NO. 5-3
CONTROL BOX OPERATOR RLK | STATIC PRESSURE -1.0 | PITOT CORRECTION 0.84 | FILTER NO. 136 QTZ
BAROMETRIC PRESSURE 29.32 | PORT DIRECTION East | CONTROL BOX NO. 1 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		659.354	2.0	1.15	1.15	63	64	5.0	118	250	48°F	250	1 minute/point
33.6		659.982	1.3	0.74	0.74	63	65	5.0	120		Ice down		
31.7		660.510	1.4	0.80	0.80	64	66	5.0	120				
29.6		661.025	1.3	0.74	0.74	64	68	4.5	120				
27.0		661.560	1.5	0.86	0.86	65	69	5.0	122				
23.2		662.100	1.3	0.74	0.74	66	71	4.5	123				
12.8		662.610	0.7	0.40	0.40	67	71	3.0	124				
9.0		663.000	0.7	0.40	0.40	68	73	3.0	123				
6.4		663.375	0.7	0.40	0.40	69	73	3.0	125				
4.3		663.790	0.6	0.34	0.34	70	74	2.5	124				
2.4		664.149	0.9	0.52	0.52	71	75	3.0	125				
1.-		664.585	0.9	0.52	0.52	72	75	3.0	125				
		665.015											
													Estimates:
													MW=28.7
													%H2O=27%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.002
After	5.5	0.003

PITOT LEAK CHECK

	Positive	Negative
Before	OK 15 sec.	OK 15 sec.
After	OK 15 sec.	OK 15 sec.

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H2O	562.9	557.5	5.4
2.	100mL H2O	513.3	512.2	1.1
3.	Empty	449.8	449.5	0.3
4.	Silica Gel	644.6	640.5	4.1
5.				

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS - Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196-01
CONTROL BOX OPERATOR PJ
BAROMETRIC PRESSURE 29.32

TEST DATE 11-3-92
TEST NO. CLR-1-3-1
NOZZLE (SIZE,#) #16 .158
STATIC PRESSURE +1.0
PORT DIRECTION East

ORIFICE CORRECTION 1.768
METER CORRECTION 1.0295
CALIBRATION DATE 10-16-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 1

HOT BOX NO. 8
COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 136 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
~~35~~ 1.0		665.015	0.7	0.41	0.41	73	77	3.0	126	250	ICED DOWN <68°F	250	1 min./point
2.4		665.395	0.7	0.41	0.41	73	78	3.0	124				
4.3		665.765	0.7	0.41	0.41	74	78	3.0	125				
6.4		666.215	0.9	0.52	0.52	74	79	3.5	125				
9.0		666.673	0.9	0.52	0.52	75	79	3.0	125				
12.8		667.141	0.8	0.47	0.47	76	80	3.0	125				
23.2		667.550	0.9	0.52	0.52	76	80	3.5	125				
27.0		668.020	1.0	0.58	0.58	76	81	4.0	124				
29.6		668.545	1.0	0.58	0.58	77	81	4.0	126				
31.7		669.039	1.1	0.65	0.65	77	81	4.0	125				
33.6		669.540	1.1	0.65	0.65	77	81	4.0	125				
35.0		670.060	1.0	0.59	0.59	78	81	4.0	127				
		670.517											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS-Clairton Works	TEST DATE 11/3/92	ORIFICE CORRECTION 1.768	HOT BOX NO. 8
TEST UNIT 1-3 Battery PEC	TEST NO. CLR-1-3-1	METER CORRECTION 1.0245	COLD BOX NO. 8
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10-16-92	PROBE NO. 5-3
CONTROL BOX OPERATOR RJL	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	FILTER NO. 136 QTZ.
BAROMETRIC PRESSURE 29.32	PORT DIRECTION East	CONTROL BOX NO. 1	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		670.517	1.0	0.59	0.59	78	82	4.0	126	250	Fuel Down 468°F	250	1 min./point
33.6		671.060	1.0	0.59	0.59	78	82	4.0	127				
31.7		671.520	1.0	0.59	0.59	78	82	3.5	127				
29.6		672.022	0.8	0.47	0.47	79	82	3.0	127				
27.0		672.465	0.9	0.53	0.53	78	83	3.5	128				
23.2		672.915	0.9	0.53	0.53	79	82	3.5	127				
12.8		673.355	0.8	0.47	0.47	78	81	3.0	125				
9.0		673.760	0.7	0.41	0.41	79	82	3.0	122				
6.4		674.166	0.7	0.41	0.41	79	83	3.0	123				
4.3		674.553	0.7	0.41	0.41	80	83	3.0	125				
2.4		674.964	0.7	0.41	0.41	80	83	3.0	127				
1.0		675.340	0.6	0.35	0.35	80	84	2.5	127				
		675.730											Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS - Clairton Works	TEST DATE 11/3/92	ORIFICE CORRECTION 1.768	HOT BOX NO. 8
TEST UNIT 1-3 Battery PEC	TEST NO. CLR-1-3-1	METER CORRECTION 1.0245	COLD BOX NO. 8
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10-16-92	PROBE NO. 5-3
CONTROL BOX OPERATOR [illegible]	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	FILTER NO. 136 QTZ.
BAROMETRIC PRESSURE 29.32	PORT DIRECTION EAST	CONTROL BOX NO. 1	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		675.730	1.2	0.71	0.71	80	85	4.5	126	250	ICED DOWN <68°F	250	1 min./pt.
33.6		676.231	1.1	0.65	0.65	81	86	4.0	127				
31.7		676.715	1.1	0.65	0.65	81	85	4.0	128				
29.6		677.180	1.0	0.59	0.59	81	85	4.0	130				
27.0		677.650	1.0	0.59	0.59	81	86	3.5	130				
23.2		678.070	0.9	0.53	0.53	82	86	3.5	130				
12.8 ~~27.0~~		678.476	0.7	0.41	0.41	82	85	3.0	130				
9.0 ~~29.6~~		678.865	0.7	0.41	0.41	82	86	3.0	133				
~~36.4~~		679.234	0.7	0.41	0.41	83	86	3.0	133				
4.3		679.610	0.7	0.41	0.41	82	87	3.0	134				
2.4		679.963	0.6	0.35	0.35	83	87	2.5	135				
1.0		680.290	0.6	0.35	0.35	83	87	2.5	134				
		680.654											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 11/3/92	ORIFICE CORRECTION 1.768	HOT BOX NO. 8
TEST UNIT 1-3 BATTERY REC	TEST NO. CLR-1-3-1	METER CORRECTION 1.0245	COLD BOX NO. 8
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10-16-92	PROBE NO. 5-3
CONTROL BOX OPERATOR RJF	STATIC PRESSURE +1.0	PITOT CORRECTION .84	FILTER NO. 136 QTZ.
BAROMETRIC PRESSURE 29.32	PORT DIRECTION EAST	CONTROL BOX NO. 1	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ▲P (in. H2O)	Orifice ▲H Req'd. (in. H20)	Orifice ▲H Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		680.654	0.6	0.35	0.35	84	57	2.5	135	250	ICED DOWN <68°F	250	1 min./point
2.4		680.980	0.9	0.53	0.53	83	88	3.5	136				
4.3		681.400	0.8	0.47	0.47	84	88	3.0	135				
6.4		681.800	0.9	0.53	0.53	84	88	3.5	136				
9.0		682.220	0.8	0.47	0.47	84	88	3.0	135				
12.8		682.621	0.9	0.53	0.53	84	88	3.0	135				
23.2		683.035	0.9	0.53	0.53	85	88	3.5	136				
27.0		683.450	1.0	0.58	0.58	84	89	3.5	138				
29.6		683.890	1.1	0.64	0.64	85	88	4.0	137				
31.7		684.350	1.1	0.64	0.64	84	89	4.0	138				
33.6		684.800	1.2	0.70	0.70	84	88	4.5	138				
35.0		685.310	1.1	0.64	0.64	85	89	4.0	138				
		685.840											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC.

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-3-92 TUES	ORIFICE CORRECTION 1.535	HOT BOX NO. 4
TEST UNIT 1-3 Battery PCC	TEST NO. CLR-1-4-1	METER CORRECTION 0.9916	COLD BOX NO. 4
PROJECT NO. 300196	NOZZLE (SIZE,#) 0.158 #18	CALIBRATION DATE 9-14-92	PROBE NO. 5-5
CONTROL BOX OPERATOR LEB	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	FILTER NO. 135 672
BAROMETRIC PRESSURE 29.32	PORT DIRECTION East	CONTROL BOX NO. 7	STACK DIA. 3'

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ▲P (in. H2O)	Orifice ▲H Req'd. (in. H2O)	Orifice ▲H Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0	912	895.396	1.7	0.85	0.85	73	66	4.0	116	250	<68°F	250	1 minute/point
33.6		895.996	1.7	0.85	0.85	70	67	4.0	118		Ice Bath		
31.7		896.506	1.6	0.80	0.80	72	67	4.0	117				
29.6		897.025	1.4	0.70	0.70	74	67	3.5	116				
27.0		897.805	1.5	0.75	0.75	75	68	3.5	119				
23.2		898.478	1.0	0.50	0.50	76	70	1.0	122				
12.8		898.626	1.0	0.51	0.50	76	70	1.5	126				
9.0		899.072	1.0	0.51	0.50	76	70	2.5	124				
6.4		899.535	1.0	0.51	0.50	77	71	2.5	131				
4.3		900.004	1.0	0.51	0.50	77	72	2.5	130				
2.4		900.470	0.9	0.46	0.45	82	74	2.0	124				
1.0		900.888	0.7	0.36	0.35	84	74	1.0	117				
		901.257											
													Estimates:
													MW= 28.7
													%H2O=2%
			1.21	0.61			72.8		121.7				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.004
After	5.5	0.014

PITOT LEAK CHECK 15sec

	Positive	Negative
Before	OK 15sec	OK 15sec
After	OK 15sec	OK 15sec

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H2O	624.8	565.8	59.0
2.	100mL H2O	514.5	567.9	-53.4
3.	empty	380.6	379.8	0.8
4.	Silica Gel	654.8	651.4	3.4
5.				9.8

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-3-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 2,3 Battery PEC | TEST NO. CLR-1-4-1 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-4-92 | PROBE NO. 5 5
CONTROL BOX OPERATOR DEB | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 135 Qtz
BAROMETRIC PRESSURE 29.82 | PORT DIRECTION East | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0	1021	901.257	0.7	0.36	0.35	82	75	1.5	119	~250	ICE BATH <68°F	~250	
2.4		901.635	0.9	0.46	0.45	82	76	2.0	128				
4.3		902.079	1.0	0.51	0.50	82	77	2.5	135				
6.4		902.538	1.0	0.51	0.50	82	76	2.5	134				
9.0		903.087	1.0	0.51	0.50	82	77	2.5	129				
12.8		903.431	1.0	0.51	0.50	82	78	2.5	134				
23.2		903.884	0.9	0.36	0.35	84	78	2.0	132				
27.0		904.280	0.8	0.41	0.40	88	78	2.0	132				
29.6		904.665	0.8	0.41	0.40	86	80	2.0	129				
34.7		905.070	0.8	0.41	0.40	86	80	2.0	128				
33.6		905.530	0.8	0.41	0.40	84	80	2.0	130				
35.0		905.940	0.8	0.41	0.40	83	78	2.0	135				
		906.357											
													Estimates:
													MW=
													%H2O=
			0.88	0.44			80.7		130.4				

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-3-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1,2,3 DEC Baghouse | TEST NO. CLR-1-4-1 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) 0.168 #18 | CALIBRATION DATE 9-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR DEB | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 135 QTZ
BAROMETRIC PRESSURE 29.32 | PORT DIRECTION East | CONTROL BOX NO. 7 | STACK DIA. 36"

JEB	Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0	~~1.0~~		906.357	1.1	0.57	0.55	88	80	2.5	132				
33.6	~~2.4~~		906.809	0.9	0.46	0.45	86	79	2.0	132				
31.7	~~4.3~~		907.249	0.9	0.46	0.45	85	80	2.0	133				
29.6	~~6.4~~		907.676	0.7	0.36	0.35	87	81	2.0	133				
27.0	~~9.0~~		908.077	0.8	0.41	0.40	87	81	2.0	134				
23.2	~~12.8~~		908.485	0.9	0.46	0.45	86	81	2.2	138				
	12.8		908.928	1.0	0.51	0.50	86	82	2.5	136				
	9.0		909.406	1.0	0.61	0.50	87	82	2.5	132				
	6.4		909.854	1.0	0.51	0.50	88	83	2.5	134				
	4.3		910.305	1.0	0.51	0.50	88	82	2.5	134				
	2.4		910.782	0.9	0.46	0.45	90	82	2.0	132				
	1.0		911.255	0.8	0.41	0.40	90	83	2.0	129				
			911.676											
														Estimates:
														MW=
				0.92	0.47			84.3		133.3				%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-3-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1,2,3 PEC Baghouse | TEST NO. CLR-1-4-1 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 300196-09 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-1-92 | PROBE NO. 5-6
CONTROL BOX OPERATOR JEB | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.884 | FILTER NO. 135 QTZ
BAROMETRIC PRESSURE 29.32 | PORT DIRECTION South | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		911.676	1.0	0.51	0.50	90	83	2.5	134	~250	<68°F	~250	
33.6		912.105	1.0	0.51	0.50	93	84	2.5	134				
31.7		912.561	1.2	0.62	0.60	93	85	3.0	134				
29.6		913.057	1.2	0.62	0.60	91	86	3.0	136				
27.0		913.565	1.2	0.62	0.60	90	85	3.0	137				
23.0		914.074	1.0	0.51	0.50	93	85	2.5	136				
12.8		914.520	0.8	0.41	0.40	92	84	2.0	137				
9.0		914.933	0.8	0.41	0.40	92	85	2.0	140				
6.4		915.345	0.8	0.41	0.40	92	84	2.0	140				
4.3		915.752	0.8	0.41	0.40	92	86	2.0	137				
2.4		916.168	0.9	0.46	0.45	92	86	2.0	124				
1.0		916.694	0.8	0.41	0.40	94	86	2.0	120				
		917.030											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 123 PEC Baghouse
PROJECT NO. 300196-09
CONTROL BOX OPERATOR DEB
BAROMETRIC PRESSURE

TEST DATE 11-3-92
TEST NO. CLR-1-4-1
NOZZLE (SIZE,#) 0.158 #18
STATIC PRESSURE +1.0
PORT DIRECTION South

ORIFICE CORRECTION 1.535
METER CORRECTION 0.9916
CALIBRATION DATE 9-14-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 7

HOT BOX NO. 4
COLD BOX NO. 4
PROBE NO. 5-5
FILTER NO. 135 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (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	1414	917.030	0.80	0.41	0.40	94	86	2.0	123	~250	68°F	~250	
2.4	~~1422~~ 1423	917.435	0.80	0.41	0.40	96	87	2.0	125				
4.3		917.845	0.90	0.46	0.45	96	88	2.0	139				
6.4		918.266	0.80	0.41	0.40	97	87	2.0	141				
9.0		918.682	0.80	0.41	0.40	96	87	2.0	144				
12.8		919.088	0.80	0.41	0.40	97	87	2.0	141				
23.0		919.592	0.90	0.46	0.45	96	87	2.5	140				
27.0		919.930	1.1	0.57	0.55	96	87	2.5	142				
29.6		920.435	1.2	0.62	0.60	96	88	3.0	143				
31.7		920.942	1.2	0.62	0.60	97	88	3.0	142				
33.6		921.589	1.2	0.62	0.60	95	88	3.0	145				
35.0		922.006	1.1	0.57	0.55	97	88	3.0	144				
		922.550											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196 F01
CONTROL BOX OPERATOR
BAROMETRIC PRESSURE 29.07

TEST DATE 11-4-92
TEST NO. CLR-1-1-2
NOZZLE (SIZE,#) 0.180 #22
STATIC PRESSURE 1.1
PORT DIRECTION South

ORIFICE CORRECTION 1.756
METER CORRECTION 0.9721
CALIBRATION DATE 6-3-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 4

HOT BOX NO. 7
COLD BOX NO. 7
PROBE NO. 5-1
FILTER NO. 138 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		549.033	1.1	1.04	1.04	65	64	3.5	139	250	<68°F	250	1 minute/point
33.6		549.643	1.4	1.32	1.32	66	65	4.0	137		Iced Down		
31.7		550.406	1.4	1.32	1.32	67	67	4.0	138				
29.6		551.104	1.4	1.32	1.32	67	67	4.0	140				
27.0		551.806	1.3	1.23	1.23	68	67	3.5	142				
23.2		552.473	1.3	1.23	1.23	68	68	3.5	141				
12.8		553.144	1.0	.94	.94	69	68	3.0	143				
9.0		553.742	1.1	1.04	1.04	71	70	3.0	143				
6.4		554.401	1.1	1.04	1.04	72	71	3.0	141				
4.3		555.057	1.2	1.13	1.13	72	72	3.5	139				
2.4		555.737	1.1	1.04	1.04	73	72	3.0	139				
1.0		556.369	1.1	1.04	1.04	74	74	3.0	140				
		557.011											

Estimates:
MW= 28.7
%H2O= 2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.005
After	5.0	0.010

PITOT LEAK CHECK

	Positive	Negative
Before	15 sec OK	15 sec OK
After	15 sec OK	15 sec OK

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL H_2O	557.1	547.4	9.7
2.	100 mL H_2O	535.2	534.3	0.9
3.	Empty	436.6	436.6	0.0
4.	Silica Gel	594.3	587.5	6.8
5.				

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES, INC

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.756 | HOT BOX NO. 7
TEST UNIT 1-3 Battery PSE | TEST NO. CLR-1-1-2 | METER CORRECTION 0.9721 | COLD BOX NO. 7
PROJECT NO. 3029601 | NOZZLE (SIZE,#) 0.180 #22 | CALIBRATION DATE 6-3-92 | PROBE NO. 5-1
CONTROL BOX OPERATOR | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | FILTER NO. 138 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 4 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		557.607	1.1	1.05	1.05	75	74	3.0	138	250	48°F Ice Bath	250	1 minute/point
2.4		558.206	1.1	1.05	1.05	76	75	3.0	140				
4.3		558.830	1.2	1.15	1.15	77	75	3.5	143				
6.4		559.410	1.1	1.05	1.05	78	77	3.0	146				
9.0		560.016	1.1	1.05	1.05	79	78	3.0	146				
12.8		560.613	1.0	.96	.96	79	79	3.0	147				
23.2		561.245	1.2	1.15	1.15	79	79	3.5	147				
27.0		561.938	1.4	1.34	1.34	80	80	4.0	149				
29.6		562.619	1.4	1.34	1.34	81	80	4.0	148				
31.7		563.277	1.3	1.25	1.25	82	81	4.0	149				
33.6		564.007	1.5	1.44	1.44	83	82	4.0	150				
35.0		564.743	1.5	1.44	1.44	85	83	4.0	150				
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.756 | HOT BOX NO. 7
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-1-2 | METER CORRECTION 0.9721 | COLD BOX NO. 7
PROJECT NO. 300196-61 | NOZZLE (SIZE,#) 0.180 #22 | CALIBRATION DATE 6-3-92 | PROBE NO. 5-1
CONTROL BOX OPERATOR | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | FILTER NO. 138 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 4 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		565.390	1.2	1.15	1.15	85	84	3.5	151	250	68°F ice bath	250	1 minute/point
33.6		566.100	1.4	1.34	1.34	86	85	4.0	150				
31.7		566.770	1.3	1.25	1.25	87	86	3.5	148				
29.6		567.429	1.5	1.45	1.45	87	87	4.0	149				
27.0		568.066	1.4	1.34	1.34	89	88	4.0	138				
23.2		568.713	1.3	1.25	1.25	89	89	3.5	137				
12.8		569.290	1.1	1.05	1.05	90	89	3.0	139				
9.0		569.947	1.2	1.15	1.15	90	89	3.5	141				
6.4		570.576	1.2	1.15	1.15	90	90	3.5	141				
4.3		571.240	1.2	1.15	1.15	89	89	3.5	139				
2.4		571.880	1.1	1.05	1.05	90	89	3.0	138				
1.0		572.515	1.1	1.05	1.05	90	89	3.0	136				
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.756 | HOT BOX NO. 7
TEST UNIT 1-3 Battery PSC | TEST NO. CR-1-1-2 | METER CORRECTION 0.9721 | COLD BOX NO. 7
PROJECT NO. 300F16-101 | NOZZLE (SIZE,#) 0.180 #22 | CALIBRATION DATE 6-3-92 | PROBE NO. 5-1
CONTROL BOX OPERATOR | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | FILTER NO. 138 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION East | CONTROL BOX NO. 4 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		573,255	1.5	1.44	1.44	89	88	4.0	143	250	46°F Ambient	250	Traverse point
33.6		574.013	1.5	1.44	1.44	89	89	4.0	145				
31.7		574.661	1.5	1.44	1.44	90	89	4.0	147				
29.6		575.387	1.4	1.33	1.33	90	89	4.0	146				
27.0		576.098	1.4	1.33	1.33	90	90	4.0	148				
23.2		576.758	1.3	1.25	1.25	90	90	3.5	147				
12.8		577.392	1.0	.196	.196	91	90	3.0	148				
9.0		577.993	1.0	.196	.196	91	91	3.0	147				
6.4		578.617	1.1	1.05	1.05	91	90	3.0	149				
4.3		579.213	1.0	.196	.196	90	90	3.0	146				
2.4		579.831	1.1	1.05	1.05	91	90	3.0	145				
1.0		580.392	1.0	.196	.196	91	90	3.0	144				
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-4-92	ORIFICE CORRECTION 1.756	HOT BOX NO. 7
TEST UNIT 1-3 Battery REC	TEST NO. CLR-1-1-2	METER CORRECTION 0.9721	COLD BOX NO. 7
PROJECT NO. 22096 017	NOZZLE (SIZE,#) 0.190 #22	CALIBRATION DATE 6-3-92	PROBE NO. 5-1
CONTROL BOX OPERATOR MG	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	FILTER NO. 138 QTZ
BAROMETRIC PRESSURE 29.07	PORT DIRECTION East	CONTROL BOX NO. 4	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		581.005	1.0	.96	.96	92	91	3.0	142	250	<60°F Ice bath	250	1 minute/point
2.4		581.656	1.0	.97	.97	92	90	3.0	139				
4.3		582.239	1.0	.97	.97	92	90	3.0	146				
6.4		582.867	1.1	1.07	1.07	91	90	3.0	148				
9.0		583.488	1.1	1.07	1.07	90	90	3.0	148				
12.8		584.043	1.1	1.07	1.07	90	88	3.0	147				
23.2		584.615	1.3	1.26	1.26	89	88	4.0	148				
27.0		585.335	1.4	1.36	1.36	88	87	4.0	146				
29.6		586.040	1.5	1.46	1.46	87	86	4.0	149				
31.7		586.747	1.5	1.46	1.46	86	86	4.0	148				
33.6		587.443	1.5	1.46	1.46	85	85	4.0	148				
35.0		588.139	1.3	1.26	1.26	85	84	4.0	146				
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.618 | HOT BOX NO. 5
TEST UNIT 1-3 Battery PEC | TEST NO. CAR-1-2-2 | METER CORRECTION 0.9915 | COLD BOX NO. 5
PROJECT NO. 300976.01 | NOZZLE (SIZE,#) 0.180 #11 | CALIBRATION DATE 5-5-92 | PROBE NO. S-4
CONTROL BOX OPERATOR JB | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | FILTER NO. 139 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 3 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		933.249	1.40	1.30	1.30	72	64	3.0	128	250	<68°F field dawn	250	1 minute/point
33.6		933.988	1.50	1.33	1.33	74	66	3.0	130				
31.7		934.680	1.50	1.34	1.34	77	66	3.0	130				
29.6		935.396	1.80	1.61	1.61	78	68	3.5	131				
27.0		936.157	1.50	1.34	1.34	79	68	3.0	132				
23.2		936.864	1.30	1.16	1.16	80	71	3.0	133				
12.8		937.533	1.10	0.98	0.98	81	71	2.5	134				
9.0		938.145	1.00	0.89	0.89	81	72	2.0	135				
6.4		938.739	1.00	0.89	0.89	82	73	2.0	135				
4.3		939.348	1.30	1.16	1.16	85	75	2.8	133				
2.4		940.007	1.00	0.89	0.89	84	75	2.0	131				
1.0		940.608	0.90	0.80	0.80	85	77	2.0	130				
		941.178											
													Estimates:
													MW=28.7
													%H2O=2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.010
After	5.0	0.009

PITOT LEAK CHECK

	Positive	Negative
Before	OK 15sec	OK 15sec
After	OK 15sec	OK 15sec

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H2O	554.3	545.2	9.1
2.	100mL H2O	570.8	570.2	0.6
3.	empty	463.0	462.5	0.5
4.	Silica Gel	685.1	676.4	8.7
5.				

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-4-92	ORIFICE CORRECTION 1.618	HOT BOX NO. 5
TEST UNIT 1-3 Battery PEC	TEST NO. CLR-1-2-2	METER CORRECTION 0.9915	COLD BOX NO. 5
PROJECT NO. 300196-61	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	PROBE NO. 5-4
CONTROL BOX OPERATOR JPS	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	FILTER NO. 139 QTZ
BAROMETRIC PRESSURE 29.07	PORT DIRECTION South	CONTROL BOX NO. 3	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		941.178	1.10	0.98	0.98	86	75	2.0	129	250	<68°F= Ice Down	250	1 minute/point
2.4		941.793	1.00	0.89	0.89	87	79	2.0	130				
4.3		942.381	1.20	1.07	1.07	88	78	2.5	134				
6.4		943.07	1.40	1.26	1.26	89	78	3.0	138				
9.0		943.706	1.10	0.99	0.99	89	81	2.5	137				
12.8		944.332	1.10	0.99	0.99	90	81	2.5	139				
23.2		944.947	1.20	1.08	1.08	91	83	2.5	138				
27.0		945.582	1.60	1.44	1.44	92	84	3.0	139				
29.6		946.320	1.60	1.44	1.44	94	85	3.0	140				
31.7		947.045	1.70	1.53	1.53	93	86	3.0	140				
33.6		947.804	1.60	1.44	1.44	94	87	3.0	142				
35.0		948.544	1.50	1.35	1.35	95	85	3.0	143				
		949.251											

Estimates:
MW=
%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196-01
CONTROL BOX OPERATOR JPS
BAROMETRIC PRESSURE 29.07

TEST DATE 11-4-92
TEST NO. CLR-1-2-2
NOZZLE (SIZE,#) 0.180 #11
STATIC PRESSURE 1.0
PORT DIRECTION South

ORIFICE CORRECTION 1.618
METER CORRECTION 0.9915
CALIBRATION DATE 5-5-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT BOX NO. 5
COLD BOX NO. 5
PROBE NO. 5-4
FILTER NO. 139 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		949.251	1.50	1.35	1.35	95	87	3.0	140	250	<68°F Iced Down	250	1 minute/point
33.6		949.960	1.60	1.44	1.44	96	86	3.0	143				
31.7		950.682	1.60	1.44	1.44	97	90	3.0	139				
29.6		951.414	1.60	1.44	1.44	97	90	3.0	142				
27.0		952.135	1.50	1.37	1.37	97	92	3.0	126				
23.2		952.864	1.40	1.27	1.27	98	91	3.0	132				
12.8		953.564	1.10	1.00	1.00	98	92	2.5	132				
9.0		954.185	1.10	1.00	1.00	98	91	2.5	136				
6.4		954.815	1.30	1.18	1.18	99	92	2.8	134				
4.3		955.489	1.30	1.18	1.18	98	91	2.8	130				
2.4		956.174	0.60	0.55	0.55	97	92	1.5	129				
1.0		956.667	1.20	1.09	1.09	97	90	2.5	128				
		957.314											

Estimates:
MW=
%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.618 | HOT BOX NO. 5
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-2-2 | METER CORRECTION 0.9915 | COLD BOX NO. 5
PROJECT NO. 300P96-01 | NOZZLE (SIZE,#) 0.180 #11 | CALIBRATION DATE 5-5-92 | PROBE NO. 5-4
CONTROL BOX OPERATOR JPS | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | FILTER NO. 139 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION East | CONTROL BOX NO. 3 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		957.314	1.10	1.00	1.00	99	92	2.5	140	250	<68°F ice down	250	1 minute/point
33.6		957.944	1.80	1.64	1.64	100	91	3.5	138				
31.7		958.725	1.80	1.64	1.64	99	92	3.5	141				
29.6		959.500	1.50	1.37	1.37	100	91	3.0	139				
27.0		960.215	1.40	1.27	1.27	99	94	3.0	140				
23.2		960.916	1.20	1.09	1.09	99	94	2.5	141				
12.8		961.557	1.20	1.09	1.09	99	93	2.5	143				
9.0		962.221	1.30	1.18	1.18	99	92	2.5	142				
6.4		962.887	1.30	1.18	1.18	99	93	2.5	143				
4.3		963.555	1.20	1.09	1.09	99	91	2.5	141				
2.4		964.216	1.10	1.00	1.00	99	93	2.0	140				
1.0		964.848	1.00	0.91	0.91	100	92	2.0	138				
		965.446											Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-4-92	ORIFICE CORRECTION 1.618	HOT BOX NO. 5
TEST UNIT 1-3 Battery RDC	TEST NO. CLR-1-2-2	METER CORRECTION 0.9915	COLD BOX NO. 5
PROJECT NO. 700196-01	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	PROBE NO. 5-4
CONTROL BOX OPERATOR	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	FILTER NO. 139 QTZ
BAROMETRIC PRESSURE 29.07	PORT DIRECTION East	CONTROL BOX NO. 3	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ▲P (in. H2O)	Orifice ▲H Req'd. (in. H2O)	Orifice ▲H Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		965.446	1.10	1.00	1.00	98	94	2.0	139	250	46805 Ice down	250	1 minute/point
2.4		966.081	1.00	0.91	0.91	99	94	2.0	137				
4.3		966.682	1.20	1.09	1.09	98	93	2.5	141				
6.4		967.343	1.20	1.09	1.09	95	91	2.5	143				
9.0		968.001	1.30	1.18	1.18	93	90	3.0	142				
12.8		968.676	1.10	1.00	1.00	92	88	2.0	143				
23.2		969.304	1.30	1.18	1.18	91	88	2.8	139				
27.0		969.900	1.30	1.18	1.18	91	86	2.8	141				
29.6		970.674	1.50	1.37	1.37	89	86	3.0	140				
31.7		971.394	1.50	1.37	1.37	91	84	3.0	141				
33.6		972.112	1.70	1.53	1.53	88	85	3.2	140				
35.0		972.864	1.60	1.44	1.44	88	83	3.0	138				
		973.595											

Estimates:
MW=
%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.768 | HOT BOX NO. 8
TEST UNIT 1-3 Battery Pcc | TEST NO. CLR-1-3-2 | METER CORRECTION 1.0295 | COLD BOX NO. 8
PROJECT NO. 30196-01 | NOZZLE (SIZE,#) 0.158 #16 | CALIBRATION DATE 10-16-92 | PROBE NO. 5-3
CONTROL BOX OPERATOR RLF | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 144 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 1 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ▲P (in. H2O)	Orifice ▲H Req'd. (in. H2O)	Orifice ▲H Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		686.110	1.3	0.75	0.75	65	69	2.5	123	250	268°F Freq Down	250	1 minute/point
33.6		686.610	1.4	0.81	0.81	66	71	2.5	122				
31.7		687.115	1.4	0.81	0.81	67	72	2.5	123				
29.6		687.610	1.5	0.87	0.87	68	74	2.5	124			-	
27.0		688.146	1.5	0.87	0.87	70	75	2.5	128				
23.2		688.662	1.3	0.75	0.75	70	75	2.5	126				
12.8		689.150	1.0	0.58	0.58	71	76	2.0	127				
9.0		689.580	1.0	0.58	0.58	72	77	2.0	126				
6.4		690.035	1.3	0.75	0.75	74	78	2.5	127				
4.3		690.530	1.4	0.81	0.81	74	79	2.5	126				
2.4		691.050	1.3	0.75	0.75	75	80	2.0	128				
1.0		691.553	1.2	0.70	0.70	75	81	2.0	127				
		692.036											Estimates:
													MW= 28.7
													%H2O= 29

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	.005
After	5.5	.005

PITOT LEAK CHECK

	Positive	Negative
Before	OK 15sec.	OK 15sec.
After	OK 15sec	OK 15sec

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H_2O	565.4	557.8	7.6
2.	100mL H_2O	514.9	514.2	0.7
3.	empty	450.3	450.2	0.1
4.	Silica Gel	649.8	644.5	5.3
5.		649.8*		

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.768 | HOT BOX NO. 8
TEST UNIT 1-3 Battery PLE | TEST NO. CLR-1-3-2 | METER CORRECTION 1.045 | COLD BOX NO. 8
PROJECT NO. 300196-61 | NOZZLE (SIZE,#) #16 .158 | CALIBRATION DATE 10-16-92 | PROBE NO. 5-3
CONTROL BOX OPERATOR CLR | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 140 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 1 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		692.036	1.2	0.70	0.70	77	81	2.5	127	250	48°F Readout	250	1 minute/point
2.4		692.515	1.0	0.59	0.54	77	82	2.0	128				
4.3		692.985	1.1	0.64	0.64	78	83	2.0	130				
6.4		693.438	1.2	0.70	0.70	78	83	2.0	130				
9.0		693.925	1.3	0.76	0.76	79	84	2.5	131				
12.8		694.438	1.3	0.76	0.76	80	85	2.5	130				
23.2		694.922	1.2	0.76	0.76	80	85	2.5	132				
27.0		695.430	1.4	0.82	0.82	81	86	2.5	131				
29.6		695.936	1.5	0.88	0.88	82	87	2.5	133				
31.7		696.560	1.4	0.82	0.82	83	87	2.5	131				
33.6		696.985	1.3	0.76	0.76	83	88	2.5	133				
35.0		697.615	1.3	0.76	0.76	83	88	2.5	131				
		698.105											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.768 | HOT BOX NO. 8
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-3-2 | METER CORRECTION 1.0245 | COLD BOX NO. 8
PROJECT NO. 300196 +01 | NOZZLE (SIZE,#) #16 .158 | CALIBRATION DATE 10-16-92 | PROBE NO. 5-3
CONTROL BOX OPERATOR P/F | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 140 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 1 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		698.105	1.3	0.76	0.76	83	84	2.5	133	250	48°F Read Down	250	1 minute/point
33.6		698.615	1.6	0.94	0.94	84	89	3.0	131				
31.7		699.220	1.5	0.88	0.88	84	89	3.0	132				
29.6		699.770	1.5	0.88	0.88	85	89	2.5	132				
27.0		700.310	1.5	0.88	0.88	83	87	2.5	116				
23.2		700.891	1.4	0.82	0.82	84	87	2.5	116				
12.8		701.410	1.3	0.76	0.76	84	88	2.5	120				
9.0		701.905	1.3	0.76	0.76	85	88	2.5	122				
6.4		702.390	1.4	0.82	0.82	85	89	2.5	125				
4.3		702.915	1.4	0.84	0.84	85	89	2.5	126				
2.4		703.470	1.2	0.72	0.72	85	89	2.0	125				
1.0		704.021	1.2	0.72	0.72	85	88	2.5	125				
		704.533											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-4-92	ORIFICE CORRECTION 1.768	HOT BOX NO. 8
TEST UNIT 1-3 Battery PEC	TEST NO. CLR-1-3-2	METER CORRECTION 1.0295	COLD BOX NO. 8
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10-16-92	PROBE NO. 5-3
CONTROL BOX OPERATOR RR	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	FILTER NO. 140 QTZ
BAROMETRIC PRESSURE 29.07	PORT DIRECTION East	CONTROL BOX NO. 1	STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		704.533	1.4	0.84	0.84	85	89	2.5	126	250	4684= Ice Down	250	1 minute/point
33.6		705.062	1.3	0.78	0.78	85	88	2.5	126				
31.7		705.585	1.3	0.78	0.78	85	89	3.0	130				
29.6		706.150	1.4	0.84	0.84	86	89	3.0	128				
27.0		706.661	1.3	0.78	0.78	85	90	2.5	130				
23.2		707.193	1.2	0.71	0.71	86	89	2.5	129				
12.8		707.679	0.9	0.53	0.53	86	89	2.0	131				
9.0		708.145	0.9	0.53	0.53	86	89	2.0	130				
6.4		708.570	1.0	0.59	0.59	86	89	2.0	132				
4.3		709.048	0.9	0.53	0.53	86	89	2.0	131				
2.4		709.473	0.8	0.47	0.47	86	90	2.0	133				
1.0		709.941	0.8	0.47	0.47	87	90	2.0	131				
		710.343											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-3

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.768 | HOT BOX NO. 8
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-3-2 | METER CORRECTION 1.0275 | COLD BOX NO. 8
PROJECT NO. 300196-61 | NOZZLE (SIZE,#) #16 .158 | CALIBRATION DATE 10-16-92 | PROBE NO. 5-3
CONTROL BOX OPERATOR RJ | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 140 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION East | CONTROL BOX NO. 1 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		710.343	0.8	0.47	0.47	87	90	2.0	133	250	<68F ice bath	250	1 minute/point
2.4		710.730	0.9	0.53	0.53	86	88	2.0	130				
4.3		711.135	1.0	0.59	0.59	85	86	2.0	132				
6.4		711.575	0.9	0.53	0.53	84	85	2.0	129				
9.0		711.995	0.9	0.53	0.53	82	84	2.5	131				
12.8		712.560	1.0	0.59	0.59	81	83	2.0	129				
23.2		713.010	1.3	0.77	0.77	81	83	2.5	131				
27.0		713.553	1.4	0.83	0.83	80	83	2.5	129				
29.6		714.160	1.4	0.83	0.83	79	81	2.5	131				
31.7		714.759	1.4	0.83	0.83	78	81	2.5	129				
33.6		715.287	1.4	0.83	0.83	78	80	3.0	130				
35.0		715.895	1.6	0.95	0.95	77	79	3.0	128				
		716.475											
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196-01
CONTROL BOX OPERATOR
BAROMETRIC PRESSURE 29.07

TEST DATE 11-4-92
TEST NO. CLR-1-4-2
NOZZLE (SIZE,#) 0.158 #18
STATIC PRESSURE +1.0
PORT DIRECTION South

ORIFICE CORRECTION 1.535
METER CORRECTION 0.9916
CALIBRATION DATE 9-14-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 7

HOT BOX NO. 4
COLD BOX NO. 4
PROBE NO. 5-5
FILTER NO. 141 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		923.170	1.50	.75	.75	75	69	3.0	121	250	<68°F Feed Down	250	1 minute/point
33.6		923.745	1.45	.73	.73	78	70	3.0	121				
31.7		924.231	1.50	.75	.75	78	71	3.0	122				
29.6		924.712	1.50	.75	.75	80	70	2.5	121				
27.0		925.186	1.60	.80	.80	80	70	3.0	122				
23.2		925.700	1.30	.65	.65	80	70	3.0	122				
12.8		926.187	1.00	.50	.50	80	70	2.0	125				
9.0		926.626	1.25	.63	.63	81	73	2.0	123				
6.4		927.118	1.25	.63	.63	81	75	2.0	124				
4.3		927.590	1.25	.63	.63	83	76	2.0	122				
2.4		928.100	1.15	.58	.58	84	76	2.0	115				
1.0		928.552	1.20	.60	.60	86	77	2.0	109				
		929.008											

Estimates:
MW= 28.7
%H2O=2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	.012
After	5.0	.012

PITOT LEAK CHECK

	Positive	Negative
Before	OK 15 SEC.	OK 15 SEC
After	OK/15 SEC	OK/15 SEC

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL H_2O	572.3	565.7	6.6
2.	100mL H_2O	564.8	564.7	0.1
3.	empty	380.1	379.8	0.3
4.	Silica Gel	660.9	654.7	6.2
5.				

AQE 2/92

KEYSTONE
ENVIRONMENTAL RESOURCES, INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-2 | METER CORRECTION .9916 | COLD BOX NO. 4
PROJECT NO. 300196 f 01 | NOZZLE (SIZE,#) .158 #18 | CALIBRATION DATE 09-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR RIC | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 141 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ▲P (in. H2O)	Orifice ▲H Req'd. (in. H2O)	Orifice ▲H Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		929.008	1.10	.55	.55	88	80	2.0	109	250	48°F Knocked Down	250	1 minute/point
2.4		929.485	1.20	.60	.60	88	80	2.0	119				
4.3		929.950	1.25	.63	.63	88	80	2.5	122				
6.4		930.440	1.20	.60	.60	89	80	2.5	127				
9.0		930.937	1.25	.63	.63	89	81	2.5	125				
12.8		931.446	1.25	.63	.63	89	81	2.5	126				
23.2		931.925	1.25	.63	.63	89	81	2.5	126				
27.0		932.337	1.35	.68	.68	90	81	2.5	126				
29.6		932.864	1.75	.88	.88	92	82	3.0	130				
31.7		933.522	1.65	.83	.83	93	83	3.0	128				
33.6		934.036	1.60	.80	.80	94	83	3.0	129				
35.0		934.589	1.80	.90	.90	94	83	3.0	129				
		935.136											

Estimates:
MW= 28.7
%H2O= 2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	.012
After		

PITOT LEAK CHECK

	Positive	Negative
Before	6" H2O/5sec	6"/15sec
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-2 | METER CORRECTION .9986 | COLD BOX NO. 4
PROJECT NO. 30196-01 | NOZZLE (SIZE,#) .158 #18 | CALIBRATION DATE 09-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR RPC | STATIC PRESSURE -1.0 | PITOT CORRECTION 0.84 | FILTER NO. 141 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION South | CONTROL BOX NO. SGUCn | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		935.136	1.50	.75	.75	93	83	2.5	129	250	48°F Roll Down	250	1 min wk point
33.6		935.645	1.65	.86	.86	95	84	3.0	129				
31.7		936.240	1.75	.91	.91	96	83	3.0	129				
29.6		936.800	1.60	.83	.83	95	83	3.0	129				
27.0		937.306	1.60	.83	.83	90	81	3.0	118				
23.2		937.870	1.50	.78	.78	91	81	2.0	118				
12.8		938.348	1.25	.65	.65	95	84	2.0	120				
9.0		938.801	1.30	.68	.68	95	84	2.0	121				
6.4		939.275	1.25	.65	.65	95	85	2.0	122				
4.3		939.730	1.45	.76	.76	96	85	2.0	119				
2.4		940.245	1.10	.57	.57	97	85	2.0	118				
1.0		940.685	1.10	.57	.57	97	85	2.0	118				
		941.175											
													Estimates:
													MW= 28.7
													%H2O= 2%

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-4-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-2 | METER CORRECTION .9916 | COLD BOX NO. 4
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) .158 #18 | CALIBRATION DATE 09-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR RPC | STATIC PRESSURE -1.0 | PITOT CORRECTION 0.84 | FILTER NO. 141 QTZ
BAROMETRIC PRESSURE 29.07 | PORT DIRECTION East | CONTROL BOX NO. SGU6U | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		941.175	1.75	.91	.91	96	82	3.0	126	250	46°F Run Down	250	1 minute/point
33.6		941.746	1.65	.86	.86	95	82	3.0	127				
31.7		942.300	1.60	.83	.83	94	82	3.5	128				
29.6		942.871	1.37	.70	.70	93	82	3.0	126				
27.0		943.345	1.30	.68	.68	92	82	2.5	127				
23.2		943.825	1.15	.60	.60	93	82	2.0	128				
12.8		944.300	1.10	.57	.57	92	82	2.0	130				
9.0		944.800	1.10	.57	.57	92	82	2.0	128				
6.4		945.205	1.15	.60	.60	94	83	2.0	130				
4.3		945.660	1.15	.60	.60	94	83	2.0	130				
2.4		946.113	1.20	.63	.63	95	85	2.0	128				
1.0		946.716	1.10	.57	.57	96	86	2.0	125				
		947.156											
													Estimates:
													MW= 28.7
													%H2O= 2%

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196-01
CONTROL BOX OPERATOR RPC
BAROMETRIC PRESSURE 29.07

TEST DATE 11-4-92
TEST NO. CUR-1-4-2
NOZZLE (SIZE,#) .158 #18
STATIC PRESSURE T1.0
PORT DIRECTION East

ORIFICE CORRECTION 1.535
METER CORRECTION .9916
CALIBRATION DATE 09-14-92
PITOT CORRECTION 0.84
CONTROL BOX NO. SEVEN

HOT BOX NO. 4
COLD BOX NO. 4
PROBE NO. 5-5
FILTER NO. 141 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		947.156	1.10	.57	.57	95	85	2.0	123	250	<68°F Iced Down	250	1 minute/point
2.4		947.605	1.25	.65	.65	95	85	2.0	129				
4.3		947.991	1.20	.63	.63	95	85	2.0	131				
6.4		948.510	1.15	.60	.60	96	86	2.0	128				
9.0		948.930	1.10	.57	.57	94	83	2.0	126				
12.8		949.500	1.25	.65	.65	93	83	2.0	126				
23.2		949.994	1.35	.70	.70	92	82	2.5	128				
27.0		950.586	1.45	.76	.76	91	80	2.5	131				
29.6		951.182	1.50	.78	.78	90	80	2.5	125				
31.7		951.774	1.50	.78	.78	90	80	3.0	127				
33.6		952.254	1.75	.91	.91	90	80	3.0	127				
35.0		952.838	1.65	.86	.86	90	80	3.0	125				
		953.380											

Estimates:
MW= 28.7
%H2O= 2%

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES, INC

STACK 1-1

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	**TEST DATE** 11-5-92	**ORIFICE CORRECTION (ΔH@)** 1.756	**HOT/COLD BOX NO.** 7
TEST UNIT 1-3 Battery PEC	**TEST NO.** CLR-1-1-3	**METER CORRECTION (Y)** 0.9721	**PROBE NO.** ~~5~~ S-1
PROJECT NO. 300196-01	**NOZZLE (SIZE,#)** 0.180 M22	**CALIBRATION DATE** 6-3-92	**FILTER NO.** ~~5~~ 143
TEST CREW M.G	**STATIC PRESSURE** -1.0	**PITOT CORRECTION** 0.84	**STACK DIA.** 36.0
BAROMETRIC PRESSURE 29.15	**PORT DIRECTION** EAST	**CONTROL BOX NO.** 4	**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		588.357	1.5	1.45	1.45	60	58	4.0	115	255	68 Ecod Amb	250	1 min./point
33.6		589.050	1.5	1.45	1.45	58	57	4.0	117				
31.7		589.771	1.5	1.45	1.45	58	57	4.0	117				
29.6		590.476	1.4	1.35	1.35	57	57	4.0	118				
27.0		591.161	1.4	1.35	1.35	57	57	4.0	118				
23.2		591.853	1.2	1.16	1.16	58	57	3.5	119				
12.8		592.455	1.2	1.16	1.16	58	58	3.5	121				
9.0		593.094	1.2	1.16	1.16	59	58	3.5	120				
6.4		593.729	1.1	1.07	1.07	61	59	3.5	118				
4.3		594.347	1.1	1.07	1.07	61	60	3.5	119				
2.4		594.970	1.0	.97	.97	62	61	3.0	117				
1.0		595.500	1.1	1.07	1.07	62	61	3.5	117				
		596.123											
													Estimates:
													MW=28.7
													%H2O=2%

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before	OK 15sec	OK 15sec
After	OK 15sec	OK 15sec

GAS	1	2
CO2		
O2	20.5	Air
CO		
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100ml H2O	555.2	550.1	5.1
2.	100ml H2O	538.1	537.2	0.9
3.	Dry	436.3	436.3	0.0
4.	Silica	590.0	582.5	7.5
5.				

STACK 1-1

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USSC/NATIONAL WORKS	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.756	HOT/COLD BOX NO. 7
TEST UNIT 1-3 BATTERY PEC	TEST NO. CLR-1-1-3	METER CORRECTION (Y) 0.9721	PROBE NO. 5-1
PROJECT NO. 300196-01	NOZZLE (SIZE,#) 0.180 #22	CALIBRATION DATE 6-3-92	FILTER NO. 143
TEST CREW	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0
BAROMETRIC PRESSURE	PORT DIRECTION EAST	CONTROL BOX NO. 4	PORT SIZE 4" MALE

Traverse Point (inches)	Time	Dry Gas Meter Reading	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
		596.123(def)											
1.0		596.741	1.1	1.07	1.07	62	61	3.5	118	255	68 Fahrenheit	250	1 min./point
2.4		597.362	1.1	1.07	1.07	62	61	3.5	117				
4.3		597.990	1.1	1.07	1.07	62	61	3.5	120				
6.4		598.619	1.2	1.16	1.16	63	62	4.0	122				
9.0		599.227	1.0	.97	.97	63	62	3.0	121				
12.8		599.961	1.1	1.07	1.07	61	61	3.5	122				
23.2		600.536	1.3	1.26	1.26	62	61	4.0	125				
27.0		601.258	1.5	1.45	1.45	62	61	4.0	120				
29.6		601.985	1.5	1.45	1.45	62	62	4.0	118				
31.7		602.623	1.3	1.26	1.26	61	61	4.0	117				
33.6		603.355	1.6	1.55	1.55	61	61	4.5	117				
35.0		604.073	1.6	1.55	1.55	62	61	4.5	117				
													Estimates:
													MW=
													%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.				

STACK 1-1

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.756	HOT/COLD BOX NO. 7
TEST UNIT 1-3 Battery P&C	TEST NO. CLR-1-1-3	METER CORRECTION (Y) 0.9721	PROBE NO. 5-1
PROJECT NO. 300196-01	NOZZLE (SIZE,#) 0.180 #22	CALIBRATION DATE 6-3-92	FILTER NO. 143
TEST CREW	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	STACK DIA. 30.0
BAROMETRIC PRESSURE	PORT DIRECTION EAST	CONTROL BOX NO. 4	PORT SIZE 4"

Traverse Point (inches)	Time (604)	Dry Gas Meter Reading (cf)	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		604.775 (073)	1.5	1.45	1.45	62	61	4.0	118	260	Fixed 68°F	250	1 min./point
33.6		605.961	1.60	1.55	1.55	63	62	4.5	123				
31.7		606.148	1.5	1.45	1.45	63	62	4.0	128				
29.6		606.857	1.5	1.45	1.45	64	63	4.0	129				
27.0		607.597	1.5	1.45	1.45	64	63	4.0	127				
23.2		608.258	1.3	1.26	1.26	64	62	4.0	125				
12.8		608.875	1.1	1.07	1.07	64	63	3.5	124				
9.0		609.513	1.1	1.07	1.07	64	63	3.5	124				
6.4		610.125	1.0	.96	.96	64	64	3.0	123				
4.3		610.746	1.0	.96	.96	65	64	3.0	121				
2.4		611.350	1.0	.96	.96	65	65	3.0	123				
1.0		611.934	1.0	.96	.96	66	65	3.0	122				
													Estimates:
													MW=
													%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.				

STACK 11-1

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USSC/AIRTON WORKS | TEST DATE 11-5-92 | ORIFICE CORRECTION (ΔH@) 1.756 | HOT/COLD BOX NO. 7
TEST UNIT 1-3 BATTERY/PEC | TEST NO. CLR-1-1-3 | METER CORRECTION (Y) 0.9721 | PROBE NO. 5-1
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) 0.180 #2.2 | CALIBRATION DATE 6-3-92 | FILTER NO. 143
TEST CREW | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | STACK DIA. 36-0
BAROMETRIC PRESSURE | PORT DIRECTION SOUTH | CONTROL BOX NO. 4 | PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (def)	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
36.0		612.654	1.2	1.15	1.15	66	65	4.0	124	255	68 Dead	250	1 min./point
33.6		613.368	1.4	1.34	1.34	66	65	4.0	125				
31.7		614.062	1.4	1.34	1.34	67	65	4.0	122				
29.6		614.733	1.4	1.34	1.34	63	61	4.0	120				
27.0		615.408	1.3	1.26	1.26	62	62	4.0	117				
23.2		616.043	1.3	1.26	1.26	62	61	4.0	118				
12.8		616.680	1.0	.96	.96	62	61	3.0	119				
9.0		617.258	1.1	1.06	1.06	62	61	3.5	122				
6.4		617.915	1.1	1.06	1.06	61	61	3.5	120				
4.3		618.565	1.2	1.15	1.15	62	62	4.0	121				
2.4		619.161	1.1	1.06	1.06	62	61	3.5	122				
1.0		619.761	1.0	.96	.96	62	62	3.0	118				
													Estimates:
													MW=
													%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.				

STACK 1-1

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS C/AIRTON WORKS | TEST DATE 11-5-92 | ORIFICE CORRECTION (ΔH@) 1.756 | HOT/COLD BOX NO. 7
TEST UNIT 1-3 BATTERY/PEC | TEST NO. CLR-1-1-3 | METER CORRECTION (Y) 0.9721 | PROBE NO. 5-1
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) 0.180 #22 | CALIBRATION DATE 6-3-92 | FILTER NO.
TEST CREW | STATIC PRESSURE 1.0 | PITOT CORRECTION 0.84 | STACK DIA. 36"
BAROMETRIC PRESSURE | PORT DIRECTION SOUTH | CONTROL BOX NO. 4 | 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
	619.760												
1.0		620.368	1.0	.96	.96	62	61	3.0	120	255	68 iced	250	1 min./point
2.4		621.007	1.1	1.06	1.06	63	62	3.5	121				
4.3		621.735	1.3	1.25	1.25	63	62	4.0	119				
6.4		622.380	1.2	1.16	1.16	64	63	3.5	120				
9.0		623.031	1.1	1.06	1.06	63	63	3.5	121				
12.8		623.655	1.0	.96	.96	63	63	3.0	119				
23.2		624.337	1.3	1.25	1.25	63	62	4.0	120				
27.0		625.015	1.4	1.34	1.34	64	63	4.0	121				
29.6		625.711	1.4	1.34	1.34	64	63	4.0	122				
31.9		626.452	1.5	1.44	1.44	64	63	4.0	120				
33.6		627.129	1.4	1.34	1.34	63	63	4.0	119				
35.0		627.842	1.5	1.44	1.44	64	63	4.0	118				
													Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	[illegible]	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

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

STACK-1-2

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS	**TEST DATE** 11-5-92	**ORIFICE CORRECTION (ΔH@)** 1.618	**HOT/COLD BOX NO.** 5
TEST UNIT 1-3 - BATTERY/PEC	**TEST NO.** CLR-1-2-3	**METER CORRECTION (Y)** 0.9915	**PROBE NO.** 5-4
PROJECT NO. 300196-01	**NOZZLE (SIZE,#)** 0.180 #11	**CALIBRATION DATE** 5-5-92	**FILTER NO.** 144 QTZ
TEST CREW JB	**STATIC PRESSURE** 1.0	**PITOT CORRECTION** 0.84	**STACK DIA.** 36"
BAROMETRIC PRESSURE 29.15	**PORT DIRECTION** EAST	**CONTROL BOX NO.** 3	**PORT SIZE** 36.0

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		973.745	1.70	1.47	1.47	58	50	3.5	104	250	68°F Ice/Dwl	250	1 min./point
33.6		974.474	1.70	1.53	1.53	59	50	4.0	109				
31.7		975.240	1.70	1.53	1.53	60	51	4.0	108				
29.6		975.982	1.60	1.44	1.44	60	51	3.5	111				
27.0		976.717	1.40	1.26	1.26	62	53	3.0	109				
23.2		977.398	1.30	1.17	1.17	62	52	3.0	113				
12.8		978.069	1.20	1.08	1.08	63	55	3.0	113				
9.0		978.718	1.50	1.34	1.34	65	54	3.5	113				
6.4		979.423	1.30	1.16	1.16	64	57	3.0	114				
4.3		980.087	1.30	1.16	1.16	65	56	3.0	116				
2.4		980.755	1.20	1.07	1.07	65	58	3.0	113				
1.0		981.413	1.00	0.89	0.89	65	57	2.5	112				
		982.009											
													Estimates:
													MW= 28.7
													%H2O= 2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.015
After	5.0	0.010

PITOT LEAK CHECK

	Positive	Negative
Before	15sec OK	15sec OK
After	15sec OK	15sec OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100ml H2O	566.7	562.2	4.5
2.	100ml H2O	572.8	572.1	0.7
3.	Dry	448.1	447.8	0.3
4.	Sil Gel	678.7	671.5	7.2
5.				

STACK 1-2

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.618	HOT/COLD BOX NO. 5
TEST UNIT 1-3 Battery Pcc	TEST NO. CLR-12-3	METER CORRECTION (Y) 0.9915	PROBE NO. 5-4
PROJECT NO. 300196-01	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	FILTER NO. 144 QTZ*
TEST CREW JB	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION EAST	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		982.009	1.00	0.89	0.89	65	58	2.5	110	250	<68°F Iced Down	250	1 min./point
2.4		982.612	1.10	0.98	0.98	67	57	2.8	112				
4.3		983.233	1.30	1.16	1.16	67	59	3.0	114				
6.4		983.900	1.35	1.20	1.20	67	58	3.0	119				
9.0		984.561	1.35	1.20	1.20	65	61	3.0	116				
12.8		985.237	1.35	1.20	1.20	65	60	3.0	118				
23.2		986.920	1.30	1.16	1.16	65	60	3.0	118				
27.0		986.578	1.60	1.42	1.42	65	59	3.5	118				
29.6		987.300	1.70	1.52	1.52	66	59	4.0	118				
31.7		988.037	1.60	1.43	1.43	66	58	3.5	118				
33.6		988.759	1.90	1.70	1.70	66	60	4.0	116				
35.0		989.538	1.80	1.61	1.61	67	58	4.0	118				
		990.299											Estimates:
													MW=
													%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.				

STACK 1-2

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.618	HOT/COLD BOX NO. 5
TEST UNIT 1-3 BATTERY PEC	TEST NO. CLR-1-2-3	METER CORRECTION (Y) 0.995	PROBE NO. 5-4
PROJECT NO. 300196 01	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	FILTER NO. 144 QTZ
TEST CREW JPS	STATIC PRESSURE 1.0"	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION EAST	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		990.299	1.70	1.52	1.52	67	60	3.8	117	250	68°F Feed Dwn	250	1 min./point
33.6		991.022	1.90	1.70	1.70	67	56	4.0	120				
31.7		991.802	1.80	1.61	1.61	68	61	4.0	118				
29.6		992.556	1.60	1.43	1.43	68	59	3.5	119				
27.0		993.297	1.35	1.21	1.21	65	62	3.0	121				
23.2		994.020	1.20	1.07	1.07	68	61	3.0	120				
12.8		994.671	1.20	1.07	1.07	68	62	3.0	118				
9.0		995.35	1.20	1.07	1.07	68	61	3.0	120				
6.4		995.977	1.30	1.16	1.16	69	62	3.0	117				
4.3		996.660	1.20	1.08	1.08	69	61	3.0	116				
2.4		997.302	1.10	0.99	0.99	69	63	2.8	114				
1.0		997.931	1.10	0.99	0.99	69	62	2.8	112				
		998.563											
													Estimates:
													MW=
													%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.				

STACK 1-2

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.618	HOT/COLD BOX NO. 5
TEST UNIT 1-3 Battery Dec	TEST NO. CLR-1-2-3	METER CORRECTION (Y) 0.9915	PROBE NO. 5-4
PROJECT NO. 300196-01	NOZZLE (SIZE,#) 0.180 #11	CALIBRATION DATE 5-5-92	FILTER NO. 144 QTZ
TEST CREW JPS	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	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		998.563	1.50	1.35	1.35	70	61	3.5	115	250	<68°F Freedom	250	1 min./point
33.6		999.289	1.60	1.44	1.44	70	63	3.5	116				
31.7		1000.007	1.65	1.48	1.48	71	64	3.8	114				
29.6		1000.752	1.70	1.53	1.53	62	55	4.0	108				
27.0		1001.488	1.50	1.35	1.35	64	59	3.5	107				
23.2		1002.205	1.30	1.17	1.17	65	57	3.0	108				
12.8		1002.865	1.10	0.99	0.99	65	58	2.8	109				
9.0		1003.494	1.10	0.99	0.99	64	57	2.8	112				
6.4		1004.129	1.00	0.90	0.90	64	59	2.5	109				
4.3		1004.732	1.20	1.08	1.08	64	57	2.8	103				
2.4		1005.380	0.50	0.45	0.45	64	59	1.8	102				
1.0		1005.856	1.20	1.08	1.08	65	57	3.0	101				
		1006.490											
													Estimates:
													MW=
													%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.				

STACK 1-2

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.61E	HOT/COLD BOX NO. 5
TEST UNIT 1-3 Battery POE	TEST NO. CLR-1-2-3	METER CORRECTION (Y) 0.995	PROBE NO. S-4
PROJECT NO. 200196-01	NOZZLE (SIZE,#) 0.18" & 11	CALIBRATION DATE 5-5-92	FILTER NO. 144 QTZ 11
TEST CREW JTB	STATIC PRESSURE 1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0
BAROMETRIC PRESSURE 29.15	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		1006.490	1.20	1.08	1.08	66	58	3.0	111	250	<68°F Reburn	250	1 min./point
2.4		1007.124	1.10	0.99	0.99	65	60	3.0	112				
4.3		1007.750	1.30	1.17	1.17	67	60	3.0	112				
6.4		1008.420	1.20	1.08	1.08	65	60	3.0	109				
9.0		1009.059	1.20	1.08	1.08	64	60	3.0	110				
12.8		1009.712	1.10	0.99	0.99	64	59	2.8	110				
23.2		1010.332	1.30	1.17	1.17	64	60	3.0	111				
27.0		1011.001	1.40	1.26	1.26	64	59	3.1	112				
29.6		1011.702	1.60	1.44	1.44	65	59	3.5	110				
31.7		1012.421	1.75	1.58	1.58	64	57	4.0	111				
33.6		1013.153	1.50	1.35	1.35	66	60	3.3	111				
35.0		1013.890	1.65	1.49	1.49	66	59	3.6	111				
		1014.633											
													Estimates:
													MW=
													%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.				

STACK-1-3

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.768	HOT/COLD BOX NO. 8
TEST UNIT 1-3 Battery PCC	TEST NO. CLR-1-3-3	METER CORRECTION (Y) 1.0295	PROBE NO. 5-3
PROJECT NO. 300196-01	NOZZLE (SIZE,#) 0.158 #16	CALIBRATION DATE 10-16-92	FILTER NO. ~~5~~ 145 QTZ
TEST CREW [illegible]	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION EAST	CONTROL BOX NO. 1	PORT SIZE ~~36.0~~ 4' male

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		716.966	1.1	0.63	0.63	55	58	2.0	95	250	Ice Down	250	1 min./point
33.6		717.450	1.7	1.01	1.01	56	61	2.0	99		<68°F		
31.7		718.094	1.4	0.83	0.83	56	61	2.0	96				
29.6		718.624	1.5	0.89	0.89	57	61	2.0	99				
27.0		719.170	1.5	0.89	0.89	57	61	2.0	98				
23.2		719.700	1.4	0.83	0.83	58	62	2.0	100				
12.8		720.257	1.0	0.60	0.60	58	61	2.0	100				
9.0		720.7[illegible]	1.0	0.60	0.60	59	61	2.0	100				
6.4		721.[illegible]	[illegible]	0.60	0.60	58	61	2.0	99				
4.3		721.6[illegible]	[illegible]	0.60	0.60	58	60	2.0	102				
2.4		722.083	0.8	0.48	0.48	58	60	2.0	101				
1.0		722.5[illegible]	0.8	0.48	0.48	57	59	2.0	103				
		722.934											
													Estimates:
													MW= 28.7
													%H2O=2%

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.015
After	5.5	0.012

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK 15 sec.	OK 15 sec.
After	OK 15 sec.	OK 15 sec.

GAS	1	2
CO2	000	
O2	20.5	AIR
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100ml H2O	557.4	553.6	3.8
2.	100ml H2O	511.8	510.6	1.2
3.	DRY	450.0	449.7	0.3
4.	Sil Gel	~~667.5~~ 674.9	667.5	7.4
5.				

STACK 1-3

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.76"	HOT/COLD BOX NO. 8
TEST UNIT 1-3 BATTERY PEC	TEST NO. CLR-1-3-3	METER CORRECTION (Y) 1.0275	PROBE NO. 5-3
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10-16-92	FILTER NO. 145 QTZ
TEST CREW MF	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 360"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION EAST	CONTROL BOX NO. 1	PORT SIZE 4" MALE

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H20)	Orifice ΔH Actual (in. H20)	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		722.934	0.8	0.48	0.48	56	59	2.0	103	250	FILLED DOWN 68°	250	1 min./point
2.4		723.352	1.0	0.60	0.60	57	61	2.0	108				
4.3		723.835	1.0	0.60	0.60	58	61	2.0	105				
6.4		724.310	1.0	0.60	0.60	58	62	2.0	109				
9.0		724.815	1.0	0.60	0.60	59	61	2.0	106				
12.8		725.315	1.1	0.64	0.64	58	60	2.5	109				
23.2		725.793	1.3	0.76	0.76	57	60	2.5	108				
27.0		726.324	1.5	0.88	0.88	56	62	3.0	107				
29.6		726.963	1.5	0.88	0.88	57	61	2.5	108				
31.7		727.580	1.1	0.64	0.64	57	61	2.5	107				
33.6		728.083	1.4	0.82	0.82	57	62	3.0	106				
35.0		728.735	1.6	0.94	0.94	56	61	3.0	109				
		729.358											
													Estimates:
													MW=
													%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.				

STACK 1-3

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USSC/AIRTON WORKS | TEST DATE 11-5-92 | ORIFICE CORRECTION (ΔH@) 1.758 | HOT/COLD BOX NO. 8
TEST UNIT 1-3 BATTERY DEC | TEST NO. CLR-1-3-3 | METER CORRECTION (Y) 1.0245 | PROBE NO. 5
PROJECT NO. 300196-01 | NOZZLE (SIZE,#) #14 .458 | CALIBRATION DATE 10/--/92 | FILTER NO. 145 QT 2,
TEST CREW MH | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15 | PORT DIRECTION EAST | CONTROL BOX NO. 1 | PORT SIZE 4" male

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		729.358	1.5	0.88	0.88	56	60	3.0	108	250	Iced	250	1 min./point
33.6		729.923	1.5	0.88	0.88	56	61	3.0	110		Down		
31.7		730.493	1.3	0.76	0.76	57	61	2.5	110		248°		
29.6		731.040	2.0	1.17	1.17	57	63	3.5	108				
27.0		731.753	1.3	0.76	0.76	58	63	2.5	108				
23.2		732.313	1.3	0.76	0.76	58	63	2.5	109				
12.8		732.856	1.0	0.58	0.58	59	62	2.0	109				
9.0		733.285	1.4	0.83	0.83	59	64	2.0	109				
6.4		733.845	0.8	0.47	0.47	59	63	2.0	107				
4.3		734.243	1.0	0.58	0.58	60	63	2.0	108				
2.4		734.694	0.8	0.47	0.47	60	63	2.0	106				
1.0		735.132	0.8	0.47	0.47	60	62	2.0	107				
		735.563											Estimates:
													MW=
													%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.				

STACK 1-3

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.768	HOT/COLD BOX NO. 8
TEST UNIT 1-3 Battery/PCC	TEST NO. CLR-1-3-3	METER CORRECTION (Y) 1.0295	PROBE NO. 5-3
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16 .158	CALIBRATION DATE 10/16/92	FILTER NO. 145 GTZ
TEST CREW GH	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION SOUTH	CONTROL BOX NO. 1	PORT SIZE 4" male

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H20)	Orifice ΔH Actual (in. H20)	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	735.563	~~735.132~~	1.5	0.88	0.88	54	63	3.0	106	256	Ice Dead 68°	256	1 min./point
33.6		736.152	1.5	0.88	0.88	54	62	3.0	107				
31.7		736.721	1.5	0.88	0.88	58	61	3.0	107				
29.6		737.289	1.6	0.94	0.94	52	53	3.0	94				
27.0		737.885	1.5	0.88	0.88	51	54	3.0	96				
23.2		738.430	1.4	0.83	0.83	52	54	2.5	99				
12.8		739.015	1.2	0.71	0.71	51	56	2.5	100				
9.0		739.500	1.3	0.77	0.77	52	56	3.0	101				
6.4		740.043	1.4	0.83	0.83	52	57	3.0	102				
4.3		740.650	1.4	0.83	0.83	52	57	3.0	104				
2.4		741.180	1.2	0.71	0.71	53	58	2.5	104				
1.0		741.742	1.1	0.65	0.65	54	58	2.5	102				
		742.230											
													Estimates:
													MW=
													%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.				

STACK 1-3

KEYSTONE ENVIRONMENTAL RESOURCES / AIR QUALITY ENGINEERING
STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 11-5-92	ORIFICE CORRECTION (ΔH@) 1.768	HOT/COLD BOX NO. 8
TEST UNIT 1-3 Battery Pec	TEST NO. CLR-1-3-3	METER CORRECTION (Y) 1.0245	PROBE NO. 5-3
PROJECT NO. 300196-01	NOZZLE (SIZE,#) #16.158	CALIBRATION DATE 10-16-92	FILTER NO. 145 QTZ.
TEST CREW 1,2	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.15	PORT DIRECTION SOUTH	CONTROL BOX NO. 1	PORT SIZE 4" male

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		742.230	1.0	0.59	0.59	54	58	2.0	103	250	ICED DOWN <68°	250	1 min./point
2.4		742.734	1.3	0.77	0.77	54	57	3.0	102				
4.3		743.258	1.4	0.82	0.82	53	57	3.0	103				
6.4		743.810	1.4	0.82	0.82	53	55	3.0	103				
9.0		744.350	1.3	0.76	0.76	52	56	3.0	104				
12.8		744.860	1.2	0.70	0.70	52	56	2.5	103				
23.2		745.384	1.3	0.76	0.76	52	56	3.0	103				
27.0		745.925	1.5	0.88	0.88	52	57	3.0	103				
29.6		746.505	1.5	0.88	0.88	52	58	3.0	102				
31.7		747.120	1.6	0.94	0.94	53	58	3.0	103				
33.6		747.690	1.5	0.88	0.88	53	60	2.5	103				
35.0		748.260	1.5	0.88	0.88	54	58	3.0	102				
		748.837											
													Estimates:
													MW=
													%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.				

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-5-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-3 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 700196 f01 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR JR2 | STATIC PRESSURE +1.0 | PITOT CORRECTION 0.84 | FILTER NO. 142 QTZ
BAROMETRIC PRESSURE 29.15 | PORT DIRECTION East | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H20)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		954.035	1.6	0.80	0.80	83	56	3.0	98	250	48°F Freeze Down	250	1 minute/point
33.6		954.586	1.6	0.84	0.85	67	57	3.0	104				
31.7		955.233	1.6	0.84	0.85	65	58	3.0	101				
29.6		956.895	1.5	0.79	0.80	66	58	3.0	103				
27.0		956.300	1.4	0.73	0.75	65	59	2.5	102				
23.2		956.812	1.3	0.68	0.70	68	60	2.5	103				
12.8		—	1.2	0.63	0.65	65	58	2.5	104				
9.0		957.877	1.3	0.68	0.70	64	57	2.5	102				
6.4		958.414	1.3	0.68	0.70	63	56	2.5	106				
4.3		958.924	1.3	0.68	0.70	64	57	2.5	105				
2.4		959.443	1.2	0.63	0.65	63	56	2.5	104				
1.0		959.976	1.2	0.63	0.65	62	56	2.5	104				
		960.482											
													Estimates:
													MW= 28.7
													%H2O= 2%
AVERAGE		—	1.38	0.72	—	—	61.8	—	103				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	0.018
After	5.0	0.018

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK 15 sec.	OK 15 sec.
After	OK	OK

	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL H_2O	566.8	563.6	3.2
2.	100 mL H_2O	565.5	565.3	0.2
3.	empty	380.9	380.8	0.1
4.	Silica Gel	695.7	688.0	7.7
5.				

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-5-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-3 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 300196-61 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR RB | STATIC PRESSURE | PITOT CORRECTION 0.84 | FILTER NO. A2 QTZ
BAROMETRIC PRESSURE 29.15 | PORT DIRECTION East | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H2O)	Orifice ΔH Act. (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		960.482	1.2	0.63	0.65	64	56	2.5	103	250	68°F Iced Down	250	1 minute/point
2.4		961.092	1.1	0.58	0.60	67	58	2.2	106				
4.3		961.597	1.2	0.63	0.65	66	58	2.5	107				
6.4		962.092	1.3	0.68	0.70	68	59	2.7	108				
9.0		962.516	1.2	0.63	0.65	64	57	2.5	108				
12.8		963.018	1.2	0.63	0.65	63	55	2.5	108				
23.2		963.501	1.2	0.63	0.65	63	56	2.5	108				
27.0		964.009	1.3	0.68	0.68	65	56	2.5	108				
29.6		964.521	1.5	0.79	0.80	65	56	3.0	108				
31.7		965.075	1.4	0.73	0.75	67	57	3.0	107				
33.6		965.672	1.8	0.94	0.95	67	56	3.2	106				
35.0		966.367	1.8	0.94	0.95	67	57	3.5	108				
		966.889											
													Estimates:
													MW=
AVERAGE			1.35	0.71	—	—	61.1		107.3				%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1-3 Battery PEC
PROJECT NO. 300196 F01
CONTROL BOX OPERATOR DGB
BAROMETRIC PRESSURE 29.15

TEST DATE 11-5-92
TEST NO. CLR-1-4-3
NOZZLE (SIZE,#) 0.158 #18
STATIC PRESSURE
PORT DIRECTION East

ORIFICE CORRECTION 1.535
METER CORRECTION 0.9916
CALIBRATION DATE 9-14-92
PITOT CORRECTION 0.84
CONTROL BOX NO. 7

HOT BOX NO. 4
COLD BOX NO. 4
PROBE NO. 5-5
FILTER NO. 142 QTZ
STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		966.889	1.8	0.94	0.95	68	58	3.5	107	250	<68°F Feed Down	250	1 minute/point
33.6		967.490	1.8	0.94	0.95	67	57	3.5	109				
31.7		968.010	1.8	0.94	0.95	66	57	3.5	108				
29.6		968.642	1.7	0.89	0.90	66	58	3.2	106				
27.0		969.232	1.3	0.68	0.70	67	58	2.7	106				
23.2		969.731	1.3	0.68	0.70	68	58	3.0	105				
12.8		970.241	1.1	0.58	0.60	67	59	2.5	107				
9.0		970.728	1.3	0.68	0.70	67	58	3.0	105				
6.4		971.245	1.2	0.63	0.65	68	58	2.5	106				
4.3		971.723	1.2	0.63	0.65	68	58	2.5	105				
2.4		972.294	1.1	0.58	0.60	68	58	2.5	103				
1.0		972.685	1.2	0.63	0.65	67	57	2.5	101				
		973.176											

Estimates:
MW=
%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

AQE 2/92

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-5-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PEC | TEST NO. CLR-1-4-3 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 3W196-101 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-14-92 | PROBE NO. 5-6
CONTROL BOX OPERATOR SLB | STATIC PRESSURE | PITOT CORRECTION 0.84 | FILTER NO. 142 GF2
BAROMETRIC PRESSURE 29.15 | PORT DIRECTION South | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
35.0		973.176	1.6	0.84	0.85	66	57	3.0	103	250	4689= Ice Bath	250	1 minute/point
33.6		—	1.6	0.84	0.85	63	56	3.0	105				
31.7		974.336	1.6	0.84	0.85	64	57	3.0	104				
29.6		974.899	1.7	0.89	0.90	57	51	3.0	95				← ½ hr lunch break
27.0		975.461	1.6	0.84	0.85	58	51	3.0	96				
23.2		976.097	1.3	0.68	0.70	58	51	~~3.0~~	98				
12.8		976.565	1.0	0.52	0.50	60	52	2.0	99				
9.0		977.091	1.2	0.63	0.65	58	52	2.5	100				
6.4		977.460	1.2	0.63	0.65	59	52	2.5	101				
4.3		977.929	1.2	0.63	0.65	60	52	2.5	99				
2.4		978.419	1.1	0.58	0.60	62	53	2.2	91				
1.0		978.880	1.1	0.58	0.60	61	53	2.0	93				
		979.389											Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works | TEST DATE 11-5-92 | ORIFICE CORRECTION 1.535 | HOT BOX NO. 4
TEST UNIT 1-3 Battery PBC | TEST NO. CBR-1-4-3 | METER CORRECTION 0.9916 | COLD BOX NO. 4
PROJECT NO. 30096-61 | NOZZLE (SIZE,#) 0.158 #18 | CALIBRATION DATE 9-14-92 | PROBE NO. 5-5
CONTROL BOX OPERATOR JEB | STATIC PRESSURE | PITOT CORRECTION 0.84 | FILTER NO. 142 OTZ
BAROMETRIC PRESSURE 29.15 | PORT DIRECTION South | CONTROL BOX NO. 7 | STACK DIA. 36"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Req'd. (in. H20)	Orifice ΔH Act. (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°C/°F)	Hot Box Temp. (°F)	Comments
1.0		979.309	1.0	0.52	0.50	60	53	2.0	92	250	40°F Shut Down	250	1 minute/point
2.4		979.733	1.1	0.58	0.60	59	52	2.5	93				
4.3		980.200	1.3	0.68	0.70	61	51	2.5	102				
6.4		980.792	1.3	0.68	0.70	59	50	2.5	103				
9.0		981.172	1.2	0.63	0.65	59	50	2.5	102				
12.8		981.638	1.2	0.63	0.65	60	50	2.5	102				
23.2		982.109	1.2	0.63	0.65	59	51	2.5	102				
27.0		982.582	1.5	0.79	0.80	60	52	3.0	102				
29.6		983.148	1.5	0.79	0.80	62	52	3.0	101				
31.7		983.661	1.7	0.89	0.90	62	53	3.0	99				
33.6		984.228	1.7	0.89	0.90	62	53	3.0	99				
35.0		984.800	1.7	0.89	0.90	62	54	3.2	100				
		985.414											Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

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

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

	1	2
CO2		
O2		
CO		
N2		

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

KEYSTONE ENVIRONMENTAL RESOURCES INC

VISIBLE EMISSIONS OBSERVATIONS FORM

BAG HOUSE READINGS

[redacted]

OBSERVER: BERNIE MAY

DATE: 11-3-92

FACILITY: U.S.X CLAITIN
BAG HOUSE 1&2&3

OBSERVATION: START TIME: 9:08
END TIME: 11:59

OBSERVATION POINT:
BOAD WAY U.S.K

SOURCE:

DISTANCE: 150 FT
DIRECTION FROM: SOUTH
HEIGHT: 100 FT

WIND:

SPEED: 7. M.P.H
DIRECTION: S.E
TEMPERATURE: 44°
SKY CONDITION: CLOUDY
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION:

TOTAL No. OF READINGS: 120
No. READINGS >= 20%
No. READINGS >= 60%
GREATEST OPACITY: 0
CREW: D FOREMAN: WARGO

COMMENTS: BAG HOUSE
READING U.S.K
CLAIRTON

B25-2	0	0	0	0	0	9:08	30									
A25-3	1	0	0	0	0	9:14	31									
B27-2	2	0	0	0	0	9:19	32									
A27-3	3	0	0	0	0	9:25	33									
B29-2	4	0	0	0	0	9:31	34									
A29-3	5	0	0	0	0	9:36	35									
B31-2	6	0	0	0	0	9:42	36									
A31-3	7	0	0	0	0	9:47	37									
C2-2	8	0	0	0	0	9:53	38									
B2-3	9	0	0	0	0	10:01	39									
A2-1	10	0	0	0	0	10:07	40									
B4-3	11	0	0	0	0	10:12	41									
A4-1	12	0	0	0	0	10:18	42									
B6-3	13	0	0	0	0	10:25	43									
A6-1	14	0	0	0	0	10:31	44									
B8-3	15	0	0	0	0	10:36	45									
A8-1	16	0	0	0	0	10:43	46									
B10-3	17	0	0	0	0	10:48	47									
A10-1	18	0	0	0	0	10:54	48									
B12-3	19	0	0	0	0	10:59	49									
A12-1	20	0	0	0	0	11:06	50									
B14-3	21	0	0	0	0	11:11	51									
A14-1	22	0	0	0	0	11:17	52									
B16-3	23	0	0	0	0	11:23	53									
A16-1	24	0	0	0	0	11:29	54									
B18-3	25	0	0	0	0	11:34	55									
A18-1	26	0	0	0	0	11:40	56									
B20-3	27	0	0	0	0	11:46	57									
A20-1	28	0	0	0	0	11:51	58									
B22-3	29	0	0	0	0	11:58	59									

VISIBLE EMISSIONS OBSERVATIONS FORM BAG HOUSE READING

[redacted] BOOK

OBSERVER: BERNIE MAY

DATE: 11-3-92

FACILITY: USX CLAIRTON BAG HOUSE 1+2+3

OBSERVATION: START TIME: 12:34

END TIME: _____

OBSERVATION POINT:

ROAD WAY U.S.X

SOURCE:

DISTANCE: 200 F.T.

DIRECTION FROM: SOUTH

HEIGHT: 100 F.T.

WIND:

SPEED: 7 M.P.H.

DIRECTION: S.E.

TEMPERATURE: 52°

SKY CONDITION: CLEAR

BACKGROUND: SKY

READING CONDITIONS: Good

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: _____

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: D FOREMAN: WARGO

COMMENTS: BAG HOUSE READING U.S.X CLAIRTON

A22-1	0	0	0	0	0	12:34	30						
B24-3	1	0	0	0	0	12:39	31						
A24-1	2	0	0	0	0	12:45	32						
B26-3	3	0	0	0	0	12:50	33						
A26-1	4	0	0	0	0	12:56	34						
B28-3	5	0	0	0	0	1:01	35						
A28-1	6	0	0	0	0	1:07	36						
B30-3	7	0	0	0	0	1:12	37						
A30-1	8	0	0	0	0	1:18	38						
C2-3	9	0	0	0	0	1:23	39						
B1-1	10	0	0	0	0	1:29	40						
A1-2	11	0	0	0	0	1:33	41						
B3-1	12	0	0	0	0	1:39	42						
A3-2	13	0	0	0	0	1:44	43						
B5-1	14	0	0	0	0	1:50	44						
A5-2	15	0	0	0	0	1:55	45						
B7-1	16	0	0	0	0	2:01	46						
A7-2	17	0	0	0	0	2:06	47						
A9-1	18	0	0	0	0	2:11	48						
A9-2	19	0	0	0	0	2:16	49						
B11-1	20	0	0	0	0	2:22	50						
A11-2	21	0	0	0	0	2:27	51						
B13-1	22	0	0	0	0	2:33	52						
A13-2	23	0	0	0	0	2:38	53						
B15-1	24	0	0	0	0	2:44	54						
A15-2	25	0	0	0	0	2:49	55						
B17-1	26	0	0	0	0	2:54	56						
A17-2	27	0	0	0	0	2:59	57						
B19-1	28	0	0	0	0	3:05	58						
A19-2	29	0	0	0	0	3:10	59						

Name Dawn McKay

Date 11-3-92

Foreman J. Wargo Crew D

BATTERY 1-2-3 PEC Test + Keydates

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	B-25	9:08	:00	0%	:00	5%	—	good coke face to top latches
3	A-25	9:14	:00	0%	:00	0%	—	good coke face to top latches
2	B-27	9:19	:00	0%	:12	30%	—	good coke face top latches
3	A-27	9:25	:00	0%	:00	5%	—	good coke face top latches
2	B-29	9:31	:00	0%	:06	15%	—	good coke face top latch
3	A-29	9:36	:00	0%	:00	0%	—	slightly green top hook
2	B-31	9:42	:00	0%	:00	5%	—	good face top hook
3	A-31	9:47	:00	0%	:00	5%	—	good face top hook
2	C-2	9:53	:00	0%	:19	20%	—	good face to hook
3	B-2	10:01	:00	0%	:07	25%	—	coke face green top hook
1	A-2	10:07	:00	0%	:16	:20%	—	coke face green at number plate
3	B-4	10:12	:00	0%	:00	0%	—	good coke face Top hook
1	A-4	10:18	:00	0%	:00	5%	—	good face top latch
3	B-6	10:25	:00	0%	:00	0%	—	good face top hook
1	A-6	10:31	:00	0%	:00	0%	—	good face top hook
3	B-8	10:36	:00	0%	:00	0%	—	good face top hook
1	A-8	10:43	:00	0%	:00	0%	—	U. Blocked
3	B-10	10:48	:00	0%	:00	0%	—	U. Blocked
1	A-10	10:54	:00	0%	:00	0%	—	coke face good top hook

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 Darren McKay

Date 11-3-92

Foreman J. Wargo Crew D

BATTERY 1-2-3 Rec Test Keystone

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3	B-12	10:59	:00 0%	:00 0%	—	U. B locked
1	A-12	11:05	:00 0%	:00 0%	—	good face top latch
3	B-14	11:11	:00 0%	:00 0%	—	U. B locked
1	A-14	11:17	:00 0%	:00 0%	—	Slightly green top latch
3	B-16	11:23	:00 0%	:00 0%	—	good face top hook
1	A-16	11:29	:00 0%	:00 5%	—	Slightly green top hook
3	B-18	11:34	:00 0%	:00 0%	—	good face top latch
1	A-18	11:40	:00 0%	:00 0%	—	Slightly green top latch
3	B-20	11:46	:00 0%	:00 0%	—	good coke face top latch
1	A-20	11:51	:00 0%	:00 0%	—	Slightly green top hook
3	B-22	11:58	:00 0%	:00 0%	—	U. B locked
1	A-22	12:34	:00 0%	:00 5%	—	U. B locked
3	B-24	12:39	:00 0%	:00 5%	—	good coke face top latch
1	A-24	12:45	:00 0%	:00 0%	—	good face top latch
3	B-26	12:50	:00 0%	:00 0%	—	U. B locked
1	A-26	12:56	:00 0%	:00 0%	—	good coke face top hook
3	B-28	1:01	:00 0%	:00 0%	—	U. B locked
1	A-28	1:07	:00 0%	:00 5%	—	Slightly green top hook
3	B-30	1:12	:00 0%	:00 0%	—	U. B locked

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 Darren McKay

Date 11-3-92

Foreman J. Warga Crew D

BATTERY 1-2-3 Pec Test Keystone

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
1	A-36'	1:18	:00	0%	:00	5%	—	U. B locked
3	C-2	1:23	:00	0%	:00	0%	—	U. B locked
1	B-1	1:29	:00	0%	:00	0%	—	good coke face top hook
2	A-1	1:33	:00	0%	:00	0%	—	good face top latch
1	B-3	1:39	:00	0%	:00	0%	—	good coke face top hook
2	A-3	1:44	:00	0%	:00	5%	—	good coke face top hook
1	B-5	1:50	:00	0%	:00	5%	—	good coke face top latch
2	A-5	1:55	:00	0%	:00	5%	—	Slightly green top hook
1	B-7	2:01	:00	0%	:03	20%	—	Coke face green top hook
2	A-7	2:06	:00	0%	:00	0%	—	U. B locked
1	B-9	2:11	:00	0%	:00	5%	—	good coke face top latch
2	A-9	2:16	:00	0%	:00	0%	—	U. B locked
1	B-11	2:22	:00	0%	:00	5%	—	Coke face Slightly green top hook
2	A-11	2:27	:00	0%	:00	0%	—	good coke face top hook
1	B-13	2:33	:00	0%	:00	0%	—	Coke face Slightly green top latch
2	B-13	2:38	:00	0%	:00	5%	—	Slightly green top hook
1	B-15	2:44	:00	0%	:00	0%	—	Green face top latch
2	A-15	2:49	:00	0%	:00	0%	—	good coke face top hook
1	B-17	2:54	:00	0%	:00	0%	—	Slightly 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 Daren McKay

Date 11-3-92

Foreman J. Wargo Crew D

BATTERY 1-2-3

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	A-17	2:59	:00 0%	:00 0%	—	Slightly green face top later
1	B-19	3:05	:00 0%	:00 0%	—	Slightly green face top
2	A-19	3:10	:00 0%	:00 0%	—	good face top coal

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 dur 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

PAGE #1

VISIBLE EMISSIONS OBSERVATIONS FORM BAGHOUSE READINGS

OBSERVER: BENNIE MAY

DATE: 11-4-92

FACILITY: USX CLAIRTON 1-2+3 BATTERIES

OBSERVATION: START TIME: 8:29

END TIME: 12 14

OBSERVATION POINT: ROADWAY SOUTH OF BAGHOUSE

SOURCE:

DISTANCE: 175 FT.

DIRECTION FROM: SOUTH

HEIGHT: 100 FT

WIND:

SPEED: 16 MPH

DIRECTION: S

TEMPERATURE: 48°

SKY CONDITION: CLOUDY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION:

TOTAL No. OF READINGS: 240

No. READINGS >= 20%

No. READINGS >= 60%

GREATEST OPACITY:

CREW: D FOREMAN: WARGO

COMMENTS: U.S.X CLAIRTON BAGHOUSE READING 1-2+3 BATTERIES

[redacted]

PUSHING COKE TIME ↓

C1-3	0	0	0	0	0	8:29	30													
B1-1	1	0	0	0	0	8:35	31													
A1-2	2	0	0	0	0	8:40	32													
B3-1	3	0	0	0	0	8:46	33													
A3-2	4	0	0	0	0	8:51	34													
B5-1	5	0	0	0	0	8:57	35													
A5-2	6	0	0	0	0	9:01	36													
B7-1	7	0	0	0	0	9:10	37													
A7-2	8	0	0	0	0	9:15	38													
B9-1	9	0	0	0	0	9:21	39													
A9-2	10	0	0	0	0	9:26	40													
B11-1	11	0	0	0	0	9:32	41													
A11-2	12	0	0	0	0	9:38	42													
B13-1	13	0	0	0	0	9:44	43													
A13-2	14	0	0	0	0	9:49	44													
B15-1	15	0	0	0	0	9:56	45													
A15-2	16	0	0	0	0	10:01	46													
B17-1	17	0	0	0	0	10:07	47													
A17-2	18	0	0	0	0	10:12	48													
B19-1	19	0	0	0	0	10:18	49													
A19-2	20	0	0	0	0	10:23	50													
B21-1	21	0	0	0	0	10:29	51													
A21-2	22	0	0	0	0	10:34	52													
B23-1	23	0	0	0	0	10:40	53													
A23-2	24	0	0	0	0	10:44	54													
B25-1	25	0	0	0	0	10:50	55													
A27-2	26	0	0	0	0	10:55	56													
B27-1	27	0	0	0	0	11:01	57													
A27-2	28	0	0	0	0	12:08	58													
B29-1	29	0	0	0	0	12:14	59													

PAGE #2

VISIBLE EMISSIONS OBSERVATIONS FORM BAGHOUSE READINGS

OBSERVER: BERNIE MAY

DATE: 4-4-92

FACILITY: U.S.X CLAIRTON
1-2 & 3 BATTERIES

OBSERVATION: START TIME: 12:19

END TIME: _____

OBSERVATION POINT:
ROADWAY SOUTH OF BAGHOUSE

SOURCE:

DISTANCE: 175 F.T.

DIRECTION FROM: SOUTH

HEIGHT: 100 FT.

WIND:

SPEED: 25 M.P.H.

DIRECTION: SOUTH WEST

TEMPERATURE: 69°

SKY CONDITION: CLOUDY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: 240

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: D FOREMAN: WARGO

COMMENTS: USX. CLAIRTON
BAGHOUSE READING
1-2-3 BATTERIES

[redacted] PUSHING COKE TIME ↓

A29-2	0	0	0	0	0	12:19	30						
B31-1	1	0	0	0	0	12:25	31						
A31-2	2	0	0	0	0	12:29	32						
C1-1	3	0	0	0	0	12:35	33						
A2-3	4	0	0	0	0	12:42	34						
B2-2	5	0	0	0	0	12:54	35						
B4-2	6	0	0	0	0	1:00	36						
A4-3	7	0	0	0	0	1:05	37						
B6-2	8	0	0	0	0	1:11	38						
A6-3	9	0	0	0	0	1:16	39						
B8-2	10	0	0	0	0	1:22	40						
A8-3	11	0	0	0	0	1:27	41						
B10-2	12	0	0	0	0	1:33	42						
A10-3	13	0	0	0	0	1:38	43						
B12-2	14	0	0	0	0	1:44	44						
A12-3	15	0	0	0	0	1:49	45						
B14-2	16	0	0	0	0	1:55	46						
A14-3	17	0	0	0	0	2:00	47						
B16-2	18	0	0	0	0	2:06	48						
A16-3	19	0	0	0	0	2:12	49						
B18-2	20	0	0	0	0	2:17	50						
A18-3	21	0	0	0	0	2:23	51						
B20-2	22	0	0	0	0	2:29	52						
A20-3	23	0	0	0	0	2:34	53						
B22-2	24	0	0	0	0	2:39	54						
A22-3	25	0	0	0	0	2:45	55						
B24-2	26	0	0	0	0	2:51	56						
A24-3	27	0	0	0	0	2:56	57						
B26-2	28	0	0	0	0	3:02	58						
A26-3	29	0	0	0	0	3:07	59						

(Page 1 of 4)

Name [signature]
Date 11-4-92
Foreman J-WARGO Crew D

BATTERY 1-2-3 P.E.C. TEST

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	~~III. SCRUBBER Seconds Max. ≥ 20% Opac.~~	Comments:
3	C-1	8:29	0 - 5%	0 - 10%	1	Coke face not visible
1	B-1	8:35	:05 = 25%	0 - 10%	2	Slight green face at top hook
2	A-1	8:40	0	0 - 5%	3	Good face at top hook
1	B-3	8:46	:05 = 30%	:04 = 30%	4	Green face at top hook
2	A-3	8:51	:10 = 100%	:40 = 30%	5	Good face at top hook
1	B-5	8:57	:0 - 15%	0 - 10%	6	Slight green face at top hook
2	A-5	9:01	0	0 - 5%	7	Coke face not visible
1	B-7	9:10	:08 = 60%	:12 = 25%	8	Green oven ends
2	A-7	9:15	0	:10 = 15%	9	Coke face not visible
1	B-9	9:21	:02 = 30%	:07 = 25%	10	Green face at top hook
2	A-9	9:26	0 - 10%	0 - 10%	11	Slight green face at top hook
1	B-11	9:32	0 - 15%	0 - 10%	12	Slight green face at top latch
2	A-11	9:38	0 - 5%	0 - 10%	13	Green face at top hook
1	B-13	9:44	0 - 15%	0 - 10%	14	Green face at top hook
2	A-13	9:49	0 - 15%	0 - 10%	15	Slight green face at top hook
1	B-15	9:56	:06 = 80%	:11 = 25%	16	Green face at top hook
2	A-15	10:01	0 - 10%	0 - 10%	17	Good face at top hook
1	B-17	10:07	:10 = 60%	:16 = 25%	18	Green face at top hook
2	A-17	10:12	0	0 - 10%	19	Slight green face at top hook

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

(PAGE 2 of 4)

Name [signature]
Date 11-4-92
Foreman J-WARGO Crew D

BATTERY 1-2-3 P.E.C. TEST

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
1	B-19	10:18	:06 = 30%	:10 = 20%	20	GREEN FACE AT TOP HOOK
2	A-19	10:21	0-10%	0-10%	21	GOOD FACE AT TOP HOOK
1	B-21	10:29	:07 = 50%	:10 = 25%	22	GREEN FACE AT TOP HOOK
2	A-21	10:34	0-15%	25 = 15%	23	GREEN FACE AT TOP HOOK
1	B-23	10:40	:07 = 40%	:03 = 15%	24	GREEN FACE AT TOP HOOK
2	A-23	10:44	0	0-5%	25	GOOD FACE AT TOP HOOK
1	B-25	10:50	:09 = 50%	:09 = 25%	26	GREEN COKE FACE AT TOP HOOK
2	A-25	10:55	0	0-5%	27	GOOD COKE FACE AT TOP HOOK
1	B-27	11:01	:11 = 60%	10-25%	28	GREEN COKE FACE AT TOP HOOK
DELAY / HEAT 2	A-27	12:08	0-10%	0-5%	29	COKE FACE NOT VISIBLE
1	B-29	12:14	:04 = 35%	0-10%	30	SLIGHT GREEN FACE AT TOP HOOK
2	A-29	12:19	0	0-5%	31	GOOD FACE AT TOP HOOK
1	B-31	12:25	:06 = 80%	:08 = 30%	32	GREEN FACE AT TOP HOOK
2	A-31	12:29	0-5%	0-5%	33	GOOD FACE AT TOP HOOK
1	C-2	12:35	0-10%	0-5%	34	GOOD FACE AT TOP HOOK
3	A-2	12:42	0-5%	0-5%	35	GOOD FACE AT TOP HOOK
2	B-2	12:54	0-5%	0	36	GOOD FACE AT TOP HOOK
2	B-4	13:00	0-5%	0	37	GOOD COKE FACE AT TOP HOOK
3	A-4	13:05	0	0	38	GOOD FACE AT TOP LATCH

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 duri 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 _____
Date 11-4-92
Foreman J-WARGO Crew D

BATTERY 1-2-3 P.E.C. Test

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	B-6	13:11	0 - 15%	0 - 10%	39	Good face at top Hook
3	A-6	13:16	0	0 - 5%	40	Good face at top Hook
2	B-8	13:22	0	0 - 10%	41	Good face at top Hook
3	A-8	13:27	0 - 5%	0 - 10%	42	Good face at top Latch
2	B-10	13:33	0 - 5%	0 - 10%	43	Good coke face at top Hook
3	A-10	13:38	0 - 10%	:15 - 30%	44	Coke face not Visible
2	B-12	13:44	0	0 - 10%	45	Good face at top Hook
3	A-12	13:49	0 - 10%	0 - 10%	46	Coke face not Visible
2	B-14	13:55	0 - 10%	0 - 5%	47	Good face at top Hook
3	A-14	14:00	0 - 10%	0	48	Coke face not Visible
2	B-16	14:06	0 - 10%	0 - 10%	49	Good face at top Hook
3	A-16	14:12	0 - 10%	0 - 10%	50	Coke face not Visible
2	B-18	14:17	0 - 5%	0	51	Good face Above Number Plate
3	A-18	14:23	0 - 10%	0 - 10%	52	Coke face not Visible
2	B-20	14:29	0 - 10%	0 - 5%	53	Good face at top Latch
3	A-20	14:34	0 - 10%	0 - 10%	54	Good face at top Hook
2	B-22	14:39	0 - 5%	0	55	Good face at top Hook
3	A-22	14:45	0 - 10%	0 - 5%	56	Good face at top Hook
2	B-24	14:51	0	0	57	Good face at top Hook

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 duri 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

(PAGE 4 of 4)

Name [signature]
Date 11-4-92
Foreman J-WARGO Crew D

BATTERY 1-2-3 P.E.R. TEST

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3	A-24	14:56	0 - 15%	0 - 10%	58	Good Coke face at top Hook
2	B-26	15:02	0 - 5%	0 - 10%	59	Good Face at Top Hook
3	A-26	15:07	0 - 10%	0 - 10%	60	Good face at Top Hook

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 dur 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

PAGE 1

VISIBLE EMISSIONS OBSERVATIONS FORM BAG HOUSE READINGS

OBSERVER: BERNIE MAY

DATE: 11-5-92

FACILITY: U.S.X CLAIRTON
BATERY 1-2-3

OBSERVATION: START TIME: 8:18
END TIME: 11:08

OBSERVATION POINT:
ROADWAY SOUTH OF BAG HOUSE

SOURCE:

DISTANCE: 100 FT
DIRECTION FROM: SOUTH.
HEIGHT: 100 F.T.

WIND:

SPEED: 6 M.P.H.
DIRECTION: S.W.
TEMPERATURE: 40°
SKY CONDITION: CLOUDY
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION:

TOTAL No. OF READINGS: 240
No. READINGS >= 20%
No. READINGS >= 60%
GREATEST OPACITY:
CREW: 0 FOREMAN: MARCO

COMMENTS: U.S.X CLAIRTON
BAG HOUSE READINGS
BATERY 1-2-3

						PUSHING COKE TIME						
A4-3	0	0	0	0	0	8:18	30					
B6-2	1	0	0	0	0	8:25	31					
A6-3	2	0	0	0	0	8:31	32					
B8-2	3	0	0	0	0	8:37	33					
A8-3	4	0	0	0	0	8:45	34					
B10-2	5	0	0	0	0	8:51	35					
A10-3	6	0	0	0	0	8:56	36					
B12-2	7	0	0	0	0	9:02	37					
A12-3	8	0	0	0	0	9:08	38					
B14-2	9	0	0	0	0	9:14	39					
A14-3	10	0	0	0	0	9:19	40					
B16-2	11	0	0	0	0	9:25	41					
A16-3	12	0	0	0	0	9:30	42					
B18-2	13	0	0	0	0	9:36	43					
A18-3	14	0	0	0	0	9:41	44					
B20-2	15	0	0	0	0	9:46	45					
A20-3	16	0	0	0	0	9:54	46					
B22-2	17	0	0	0	0	10:00	47					
A22-3	18	0	0	0	0	10:05	48					
B24-2	19	0	0	0	0	10:11	49					
A24-3	20	0	0	0	0	10:16	50					
B26-2	21	0	0	0	0	10:22	51					
A26-3	22	0	0	0	0	10:27	52					
B28-2	23	0	0	0	0	10:33	53					
A28-3	24	0	0	0	0	10:38	54					
B30-2	25	0	0	0	0	10:44	55					
A30-3	26	0	0	0	0	10 49	56					
C1-2	27	0	0	0	0	10:55	57					
B1-3	28	0	0	0	0	11:01	58					
A1-1	29	0	0	0	0	11:07	59					

PAGE #2

VISIBLE EMISSIONS OBSERVATIONS FORM BAG HOUSE READINGS

31

OBSERVER: BERNIE MAY

DATE: 11-5-92

FACILITY: U.S.X. CLAIRTON

OBSERVATION: START TIME: 11:12

END TIME: _____

OBSERVATION POINT: ROADWAY SOUTH OF BAGHOUSE

SOURCE:

DISTANCE: 90 FT.

DIRECTION FROM: SOUTH.

HEIGHT: 100 FT.

WIND:

SPEED: 7. M.P.H.

DIRECTION: S.E.

TEMPERATURE: 38°

SKY CONDITION: CLOUDY & RAIN

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: 240

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: D FOREMAN: WARGO

COMMENTS: U.S.X CLAIRTON
BAG HOUSE READINGS
BATERY 1-23

PUSHING COKE TIME ↓

B3-3	0	0	0	0	0	11:12	30					
A3-1	1	0	0	0	0	11:18	31					
B5-3	2	0	0	0	0	11:24	32					
A5-1	3	0	0	0	0	11:29	33					
B7-3	4	0	0	0	0	11:35	34					
A7-1	5	0	0	0	0	11:41	35					
B9-3	6	0	0	0	0	11:46	36					
A9-1	7	0	0	0	0	11:52	37					
B11-3	8	0	0	0	0	11:57	38					
A11-1	9	0	0	0	0	12:33	39					
B13-3	10	0	0	0	0	12:38	40					
A13-1	11	0	0	0	0	12:44	41					
B15-3	12	0	0	0	0	12:48	42					
A15-1	13	0	0	0	0	12:54	43					
B17-3	14	0	0	0	0	12:59	44					
A17-1	15	0	0	0	0	1:04	45					
B19-3	16	0	0	0	0	1:09	46					
A19-1	17	0	0	0	0	1:18	47					
B21-3	18	0	0	0	0	1:22	48					
A21-1	19	0	0	0	0	1:28	49					
B23-3	20	0	0	0	0	1:33	50					
A23-1	21	0	0	0	0	1:38	51					
B25-3	22	0	0	0	0	1:43	52					
A25-1	23	0	0	0	0	1:49	53					
B27-3	24	0	0	0	0	1:53	54					
A27-1	25	0	0	0	0	1:59	55					
B29-3	26	0	0	0	0	2:03	56					
A29-1	27	0	0	0	0	2:11	57					
B31-3	28	0	0	0	0	2:16	58					
A31-1	29	0	0	0	0	2:22	59					

1

PEC TEST

Name Paul Pastorek

Date 11/5/92

Foreman Wargo Crew D

BATTERY 1-2-3

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3/A4	8:18	:0 0%	:0 0%		Coke Fc Good
2/B6	8:25	:0 0%	:0 10%		Good Fc.
3/A6	8:31	:0 0%	:0 0%		Good Fc.
2/B8	8:37	:0 0%	:0 0%		Good Fc.
3/A8	8:45	:0 0%	:0 10%		Good Fc.
2/B10	8:51	:0 0%	:0 0%		Good Fc.
3/A10	8:56	:0 0%	:0 10%		Heavy Blocked
2/B12	9:02	:0 5%	:0 0%		Good Fc.
3/A12	9:08	:0 0%	:0 0%		Heavy Blocked
2/B-14	9:14	:0 0%	:0 0%		Good Fc.
3/A-14	9:19	:0 0%	:0 0%		Good Fc.
2/B-16	9:25	:0 0%	:0 0%		Good Fc.
3/A-16	9:30	:0 0%	:0 0%		Heavy Blocked
2/B-18	9:36	:0 0%	:0 0%		Good Fc.
3/A-18	9:41	:0 0%	:0 0%		Good Fc.
2/B20	9:46	:0 0%	:0 0%		Good Fc.
3/A20	9:54	:0 0%	:0 0%		Good Fc.
2/B22	10:00	:0 0%	:0 5%		Good Fc
3/A22	10:05	:0 0%	:0 0%		Good Fc

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 duri- 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

2.

PEC TEST

Name Paul Pasternak
Date 11/5/92
Foreman Wargo Crew D

BATTERY 1-2-3

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2/B24	10:11	:00	0%	:00	0%		Good Face Top Latch
3/A24	10:16	:00	0%	:00	0%		Good Face Top Hook
2/B26	10:22	:00	0%	:00	0%		Good Face Top Hook
3/A26	10:27	:00	0%	:00	0%		Good Face Top Latch
2/B28	10:33	:00	0%	:00	10%		Good Face Top Latch
3/A28	10:38	:00	0%	:00	0%		Good Face Top Hook
2/B30	10:44	:00	0%	:00	0%		Good Face Top Hook
3/A30	10:49	:00	0%	:00	0%		S Light Green
2/C-1	10:55	:00	0%	:00	0%		Good Face
3/B1	11:01	:00	0%	:00	0%		Good Face
1/A1	11:07	:00	0%	:00	0%		Good Face
3/B3	11:12	:00	15%	:00	0%		Green Face Top Hook
1/A-3	11:18	:00	0%	:00	0%		Good Face
3/B5	11:24	:00	0%	:00	0%		Good Face
1/A5	11:29	:00	0%	:00	0%		Good Face
3/B7	11:35	:00	0%	:00	0%		Good Face
1/A7	11:41	:00	0%	:00	0%		Good Face
3/B-9	11:46	:00	0%	:00	0%		Good Face
1/A9	11:52	:00	0%	:00	0%		Good Face

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

* 13-15 Travel > 10% Opacity

3.

PEC TEST

Name Paul Pastorek

Date 11/5/92

Foreman Wargo Crew D

BATTERY 1-2-3

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3/B11	11:57	:0 0%	:0 6%		Good Fc
1/A11	12:33	:0 0%	:0 0%		Good Fc
3/B13	12:38	:0 0%	:0 0%		Good Fc
1/A13	12:44	:0 0%	:0 0%		SLIGHT GREEN
3/B15	12:48	:0 15%	:0 10%		Green Haze LOW
1/A-15	12:54	:0 0%	:0 0%		Good Fc
3/B-17	12:59	:0 0%	:0 0%		Good Fc
1/A-17	1:04	:0 0%	:0 10%		Green Fc
3/B-19	1:09	:0 0%	:0 0%		Good Fc
1/A-19	1:18	:0 0%	:0 0%		Good Fc
3/B-21	1:22	:0 0%	:0 0%		Good Fc
1/A21	1:28	:0 0%	:0 0%		Visus Blocked
3/B23	1:33	:0 0%	:0 0%		SLIGHT Green
1/A23	1:38	:0 0%	:0 0%		Good Fc
3/B25	1:43	:0 5%	:0 0%		Good Fc
1/A25	1:49	:0 0%	:0 0%		Visus Blocked
1/A27	1:53	:0 0%	:0 0%		Visus Blocked
1/A27	1:59	:0 0%	:0 0%		Good Fc
3/B29	2:03	:0 0%	:0 0%		Visus Blocked

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 duri 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

4. PEC TEST

Name [illegible]
Date 11/5/92
Foreman Nargo Crew D

BATTERY 1-2-3

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
1/A29	2:11	0 0%	:0 0%		View Blocked
3/B31	2:16	0 15%	.0 10%		View Blocked
1/A31	2:22	0 0%	:0 0%		Good Inc

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 duri 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

COMPLIANCE DEMONSTRATION
1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX B

OPERATIONAL DATA

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs. Beginning 12:00 M

Date 11-3-92

BATTERY NO. B-2					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	6	30	7	03	
3	6	40	7	13	
5	6	50	7	23	
7	7	05	7	33	
9	7	15	7	43	
11	7	25	8	05	
13	7	35	8	17	
15	7	45	8	29	
17	8	07	8	51	
19	8	19	9	04	
21	8	31	9	16	
23	8	53	9	38	
25	9	06	9	40	
27	9	18	9	50	
29	9	30	10	03	
31	9	42	10	13	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30			12	07	
C-1			12	18	
C2	9	53	10	38	

BATTERY NO. A-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1			12	24	
3	12	09	12	38	
5	12	20	12	53	
7	12	30	1	03	
9	12	40	1	20	
11	12	55	1	30	
13	1	05	1	40	
15	1	22	1	50	
17	1	32	2	03	
19	1	42	2	20	
21	1	52	2	30	
23	2	05	2	40	
25	2	22	2	50	
27	2	32	3	08	
29	2	42	3	18	
31	2	52	3	28	
2	10	05	10	40	P.B.
4	10	15	10	52	P.B.
6	10	30	11	00	
8	10	40	11	14	
10	10	54	11	24	
12	11	02	11	36	
14	11	16	11	48	
16	11	26			
18	11	38			
20	11	50			
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-1					
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	10	3	38	
4	3	20	3	48	
6	3	30	4	30	
8	3	40	4	40	
10	3	50	[illegible]	[illegible]	
12	4	32	5	03	
14	4	42	5	13	
16	4	52	5	23	
18	5	05	5	33	
20	5	15	5	43	
22	5	25	5	53	
24	5	35	6	08	
26	5	45	6	18	
28	5	55	6	28	
30	6	10	6	38	
1	6	20	6	48	
C2	12	45	4	55	

REMARKS:

17/19 — 25/22 — 17/17

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	6	5	
1-2	5	5	
2-3	5	5	
3-4	5	5	
4-5	3	4	
5-6	6	6	
	30	30	

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

Total Ovens Pushed 59

Total Ovens Charged 59

Pusherman

Battery Foreman

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. /

12 Hrs. Beginning 12:00 A M

Date 11-3 [illegible]

BATTERY NO. A5-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	6	35	7	02	
3	6	45	7	13	
5	7	00	7	23	
7	7	15	7	37	
9	7	25	7	47	
11	7	35	8	12	
13	7	45	8	24	
15	7	55	8	35	
17	8	14	8	57	
19	8	26	9	12	
21	8	37	9	23	
23	8	59	9	34	
25	9	14	9	45	
27	9	25	9	57	
29	9	36	10	22	
31	9	47	10	44	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28			12	03	
30			12	13	
1					
2					

BATTERY NO. B5-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1			12	27	
3	12	45	12	37	
5	12	15	1	03	
7	12	25	1	07	
9	12	35	1	32	
11	12	55	1	47	
13	1	05	1	50	
15	1	15	1	57	
17	1	30	2	12	
19	1	45	2	18	
21	1	55	2	32	
23	2	10	2	42	
25	2	20	2	55	
27	2	30	2	57	
29	2	40	3	13	
31	2	50	3	17	
2	9	59	10	49	
4	10	11	11	04	
6	10	25	11	08	
8	10	36	11	20	
10	10	48	11	25	
12	10	59	11	36	
14	11	10	11	43	
16	11	23	11	56	
18	11	34			
20	11	45			
22	11	58			
24					
26					
28					
30					
1					
C2	3	05	3	23	

BATTERY NO. [illegible]-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
(3)	3	15	3	42	
4	3	25	3	48	
6	3	40	3	57	
8	3	50	4	37	
10	3	59	4	47	
12	4	35	4	57	
14	4	45	5	12	
16	4	55	5	22	
18	5	10	5	32	
20	5	20	5	42	
22	5	30	5	52	
24	5	40	6	08	
(25)	5	50	6	22	
28	6	10	6	33	
30	6	20	6	47	
1					
2					

REMARKS:

16/18 27/25 15/15

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	4	
1-2	5	6	
2-3	5	6	
3-4	6	6	
4-5	3	3	
5-6	5	5	
	29	30	

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
6-7	4	4	
7-8	6	5	
8-9	4	4	
9-10	5	5	
10-11	5	3	
11-12	5	7	
	29	28	

Total Ovens Pushed 58

Total Ovens Charged 58

Pusherman

Battery Foreman [illegible]

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1-3

12 Hrs. Beginning 12:00 P M

Date 11-3-92

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25	"	"			
27					
29					
31					
2	4	42	5	18	PB
4	4	54	5	29	
6	5	05	5	40	PB
8	5	16	5	51	KO-PB
10	5	27	6	02	
12	5	38	6	14	PB
14	5	49	6	26	
16	6	-	6	37	
18	6	12	6	48	
20	6	24	6	59	
22	6	35	7	09	
24	6	46	7	26	
26	6	57	7	36	
28	7	07	7	47	PB
30	X	X	X	X	
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	7	24	7	47	
3	7	39	8	35	
5	7	46	8	45	KO-PB
7	7	55	8	55	KO-PB
9	8	33	9	05	PB
11	8	43	9	15	
13	8	53	9	25	PB
15	9	03	9	35	PB
17	9	13	9	48	
19	9	23	9	59	
21	9	33	10	10	PB
23	9	46	10	20	KO-PB
25	9	57	10	38	PB
27	10	08	10	49	PB
29	10	18	10	50	PB
31	10	28	10	59	PB
2					
4					
6					
8					
10					
12					
14					
16					
18			12	37	
20			12	48	
22			1	00	
24	12	39	1	09	
26	12	50	1	21	
28	1	02	1	37	
30	1	11	1	42	
C-1	1	23	1	53	
C-2	10	35	11	09	

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	1	25	2	03	
3	1	44	2	14	
5	1	55	2	24	
7	2	05	2	37	
9	2	16	2	46	
11	2	26	3	00	
13	2	39	3	08	
15	2	48	3	20	
17	3	02	3	33	
19	3	10	3	46	
21	3	22	4	07	
23	3	35	4	18	
25	3	48	4	29	
27	4	05	4	36	
29	4	16	4	51	
31	4	27	5	02	PB
2	10	45	11	19	
4	10	57	11	29	
6	"	"			
8	11	17			
10	11	27			
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

REMARKS:

14/14 — Condition of Signals

22/25 — Condition of Pusher

21/18

HOURLY REPORT OF OPERATION

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

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

Total Ovens Pushed 57

Total Ovens Charged 57

Pusherman

Battery Foreman

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 P M
Date 11-3-92

BATTERY NO. B-2						BATTERY NO. A-1						BATTERY NO. B-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES	OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES	OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1						1	7	28	7	51		1	1	36	1	57	
3						3	7	38	8	34		3	1	38	2	09	
5						5	7	48	8	44		5	1	49	2	20	
7						7	7	59	8	54		7	1	59	2	30	
9						9	8	36	9	04	PB	9	2	10	2	41	
11						11	8	46	9	15		11	2	22	2	52	
13						13	8	56	9	27		13	2	32	3	02	
15						15	9	06	9	39		15	2	43	3	12	
17						17	9	17	9	51		17	2	54	3	23	
19						19	9	29	10	01	PB	19	3	04	3	33	
21						21	9	41	10	12		21	3	14	3	43	
23						23	9	53	10	23		23	3	25	4	08	
25						25	10	03	10	35	PB	25	3	35	4	19	
27						27	10	14	10	46		27	3	45	4	32	
29						29	10	25	10	57	PB	29	4	10	4	44	
31						31	10	37	11	07	PB	31	4	21	4	55	
2	4	34	5	06		2						2	10	48	11	18	
4	4	46	5	18		4						4	10	59	11	28	
6	4	57	5	30		6						6	11	09	11	39	PB
8	5	08	5	41		8						8	11	20			
10	5	20	5	52		10						10	11	30			
12	5	32	6	03		12						12	11	42			
14	5	43	6	14		14						14					
16	5	54	6	25		16			12	32		16					
18	6	05	6	36		18			12	43		18					
20	6	16	6	47		20			12	53		20					
22	6	27	6	59		22	12	34	1	03		22					
24	6	38	7	09		24	12	44	1	14		24					
26	6	49	7	15		26	12	55	1	24		26					
28	7	—	7	26		28	1	05	1	36		28					
30	7	11	7	36		30	1	16	1	47		30					
C-1	7	17	7	46		1						1					
2						2						2					

REMARKS:

16/16 | 21/24 | 22/19

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	3	3		6-7	5	6	
1-2	6	6		7-8	7	6	
2-3	5	5		8-9	3	3	
3-4	5	5		9-10	5	5	
4-5	5	5		10-11	6	6	
5-6	5	5		11-12	4	4	
	29	29			30	30	

Total Ovens Pushed 59
Total Ovens Charged 59

Pusherman
Battery Foreman Jaan.

CC-10295 REV. 1169
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs. Beginning 12:00 ~~A~~ M

Date [illegible]

BATTERY NO. 1S-3					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
①	2	05	2	33	
3	2	15	2	47	
5	2	35	3	03	
7	2	45	3	35	
9	3	05	3	42	
11	3	10	3	57	PB-160
13	3	15	4	03	
15	3	30	4	39	
17	3	40	4	57	
19	3	55	5	10	PB
21	4	05	5	17	
23	4	35	5	28	
25	4	45	5	30	
27	4	58	5	47	
29	5	05	5	57	
31	5	15	6	07	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. 3S-3					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
②	5	30	6	13	
4	5	45	6	32	
6	5	55	6	35	
8	6	05	6	38	
10	6	15	6	52	
12	6	30	7	07	
14	6	40	7	10	
16	6	50	7	13	
18	7	05	7	23	
20	7	15	7	33	
22	7	25	8	03	
24	7	35	8	17	
㉖	7	45	8	27	
28	8	05	8	38	
30	8	19	8	49	
C-1	8	29	9	01	
2					

BATTERY NO. 4S-2					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1			9	12	
3	8	51	9	23	
5	9	03	9	37	
7	9	13	9	48	
9	9	25	10	00	
11	9	39	10	12	
13	9	50	10	22	
15	10	02	10	33	
17	10	14	10	43	
19	10	24	10	53	
21	10	35			
23	10	45			
25	10	55			
27					
29					
31					
2					
4					
6			12	07	
8			12	13	
10			12	27	
12	12	05	12	38	
14	12	15	12	52	
16	12	25	1	02	
18	12	40	1	12	
20	12	50	3	20	L
22	1	00	1	22	
24	1	10	1	34	
26	1	20	1	43	
28	1	30	2	07	
30	1	45	2	17	
1					
2					

REMARKS:

16/16 16/16 23/23

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

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

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
6-7	5	6	
7-8	5	5	
8-9	5	5	
9-10	5	5	
10-11	6	6	
11-12	0	0	

Total Ovens Pushed 55

Total Ovens Charged 55

Pusherman

Battery Foreman WARGO

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 A M
Date 11-4-92

BATTERY NO. B-2

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	1 59	2 28	
3	2 10	2 38	
5	2 20	2 48	
7	2 30	3 03	
9	2 40	3 13	
11	2 50	3 23	
13	3 05	3 33	
15	3 15	3 43	
17	3 25	3 53	
19	3 35	4 33	
21	3 45	4 48	
23	3 55	5 08	
25	4 35	5 18	
27	4 50	5 28	
29	5 10	5 36	
31	5 20	5 46	
2			
4			
6			
8			
10			
12			
14			
16			
18			
20			
22			
24			
26			
28			
30			
1			
C2	5 3	5 57	

BATTERY NO. A-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1			
3			
5			
7			
9			
11			
13			
15			
17			
19			
21			
23			
25			
27			
29			
31			
2	5 38	6 08	
4	5 48	6 18	
6	5 59	6 28	
8	6 10	6 38	
10	6 20	6 48	
12	6 30	7 03	
14	6 40	7 13	
16	6 50	7 23	
18	7 05	7 33	
20	7 15	7 48	
22	7 25	8 08	
24	7 35	8 22	
26	7 50	8 32	
28	8 10	8 43	
30	8 24	8 53	
1			
2			

BATTERY NO. B-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	8 34	9 08	
3	8 45	9 18	
5	8 55	9 28	
7	9 10	9 42	
9	9 20	9 53	
11	9 30	10 05	
13	9 44	10 16	
15	9 55	10 26	
17	10 07	10 36	
19	10 18	10 48	
21	10 28	10 57	
23	10 38		
25	10 50		
27	10 59		
29			
31			
2			
4			
6			
8		12 10	
10		12 23	
12		12 33	
14	12 12	12 43	
16	12 25	12 53	
18	12 35	1 03	
20	12 45	1 13	
22	12 55	1 23	
24	1 05	1 36	
26	1 15	1 46	
28	1 25	1 57	
30	1 38	2 08	
C1	1 48	2 18	
2			

REMARKS:
17/17
15/15
24/24

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5	
1-2	6	6	
2-3	5	5	
3-4	6	6	
4-5	2	2	
5-6	6	6	
	30	30	

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
6-7	5	5	
7-8	5	5	
8-9	5	5	
9-10	5	5	
10-11	4	4	
11-12	0	0	
	26	26	

Total Ovens Pushed 56
Total Ovens Charged 56

Pusherman

Battery Foreman WANGO

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 PM
Date 11-4-92

BATTERY NO. B-2					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	06	10	40	
3	10	18	10	52	
5	10	30	11	03	
7	10	42	11	15	
9	10	54	11	27	
11	11	05	11	39	
13	11	17	11	51	
15	11	29			
17	11	41			
19	11	53			
21					
23					
25					
27					
29					
31					
2	12	54	1	20	
4	1	02	1	30	
6	1	10	1	42	
8	1	22	1	53	
10	1	32	2	04	
12	1	44	2	14	
14	1	55	2	26	
16	2	06	2	36	
18	2	16	2	48	
20	2	28	3	—	
22	2	38	3	10	
24	2	50	3	22	
26	3	02	3	33	
28	3	12	3	43	
30	3	24	4	05	
C	3	35	4	15	
2					

BATTERY NO. A-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	45	4	25	
3	4	07	4	35	
5	4	17	4	45	
7	4	27	4	55	
9	4	37	5	04	
11	4	47	5	16	
13	4	57	5	28	
15	5	06	5	40	
17	5	18	5	52	
19	5	30	6	03	
21	5	42	6	15	
23	5	54	6	27	
25	6	05	6	39	
27	6	17	6	51	
29	6	29	7	02	
31	6	41	7	12	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23			12	12	
25			12	23	
27			12	34	
29	12	14	12	52	
31	12	25	1	58	
2	6	53	7	22	
4	7	04	7	32	
6	7	14	7	42	
8	7	24	7	52	
10	7	34	8	34	
12	7	44	8	44	
14	7	54	8	54	
16	8	36	9	05	
18	8	46	9	17	
20	8	56	9	29	
22	X	X	X	X	
24	9	07	9	41	
26	9	19	9	53	
28	9	31	10	04	
30	9	43	10	16	
1					
C2	12	36	1	08	

REMARKS: 26/23 16/16 17/20

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

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

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

Total Ovens Pushed 59
Total Ovens Charged 59

Pusherman

Battery Foreman C M Jones

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

34

PUSHING AND CHARGING REPORT

UNIT NO. 1-3
12 Hrs. Beginning 12:00 P M
Date 11-4-92

BATTERY NO. A-3					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	13	10	52	
3	10	29	11	03	
5	10	38	11	14	
7	10	50	11	25	
9	11	01	11	36	
11	11	12	11	47	
13	11	23			
15	11	34			
17	11	45			
19					
21					
23					
25					
27					
29					
31					
2	12	41	1	25	
4	1	05	1	40	
6	1	17	1	48	
8	1	27	2	00	
10	1	42	2	10	
12	1	50	2	22	
14	2	02	2	33	
16	2	12	2	43	
18	2	24	2	55	
20	2	35	3	05	
22	2	45	3	17	
24	2	57	3	28	
26	3	07	3	39	
28	3	19	3	49	
30	3	30	4	12	P.B.
1					
2					

BATTERY NO. B-3					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	41	4	23	
3	3	51	4	34	
5	4	10	4	45	
7	4	21	4	56	
9	4	32	5	07	
11	4	43	5	18	
13	4	54	5	29	
15	5	05	5	40	
17	5	16	5	51	
19	5	27	6	02	
21	5	38	6	13	P.B
23	5	49	6	24	
25	6	—	[illegible]	[illegible]	
27	6	11	6	46	
29	6	22	6	57	
31	6	33	7	08	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
G 2	6	44	7	19	

BATTERY NO. A-2					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21			12	08	
23			12	18	
25			12	28	
27	12	10	12	39	
29	12	20	1	03	
31	12	30	1	15	
2	6	53	7	30	
4	7	06	7	40	
6	7	17	7	50	
8	7	28	7	57	
10	7	38	8	41	
12	7	48	8	52	
14	7	59	[illegible]	[illegible]	
16	8	39	9	14	
18	8	50	[illegible]	[illegible]	
20	[illegible]				
22	[illegible]		01	30	
24	9	[illegible]	[illegible]	[illegible]	
26	9	[illegible]	[illegible]	[illegible]	
28	9	[illegible]	[illegible]	[illegible]	
30	9	00	10	21	
B 1	[illegible]	[illegible]	[illegible]	[illegible]	
2					

REMARKS: 24/21 19/17 18/21

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

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

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

Total Ovens Pushed 59
Total Ovens Charged 59

Pusherman

Battery Foreman C Mfonna

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 AM
Date 11-5-92

BATTERY NO. B-2				BATTERY NO. A-1				BATTERY NO. B-1			
OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1				1	11 06	11 49		1	4 30	5 01	46
3				3	11 17			3	4 42	5 11	48
5				5	11 30			5	4 52	5 22	50
7				7	11 41			7	5 03	5 35	PB 52
9				9	11 51			9	5 13	5 45	54
11				11				11	5 24	5 55	56
13				13				13	5 37	6 06	PB 58
15		12 05		15				15	5 47	6 16	60
17		12 16		17				17	5 57	6 26	62
19		12 27		19				19	6 08	6 37	64
21	12 07	12 37	2	21				21	6 18	6 47	66
23	12 18	12 47	4	23				23	6 28	6 57	68
25	12 29	12 59	6	25				25	6 39	7 07	70
27	12 39	1 09	8	27				27	6 49	7 22	72
29	12 49	1 20	10	29				29	6 59	8 12	74
31	1 01	1 31	12	31				31	7 09	8 23	76
2	7 18	8 48		2	1 22	1 53	16	2			
4	8 14	9 00		4	1 33	2 05	18	4			
6	8 25	9 12		6	1 44	2 13	P.B 20	6			
8	8 37	9 23		8	1 55	2 23	P.B 22	8			
10	8 50	9 33		10	2 05	2 34	24	10			
12	9 02	9 45		12	2 15	2 46	26	12			
14	9 14	9 57		14	2 25	2 55	28	14			
16	9 25	10 09		16	2 36	3 05	30	16			
18	9 35	10 21		18	2 46	3 15	32	18			
20	9 47	10 36		20	2 57	3 26	34	20			
22	9 59	10 43		22	3 07	3 36	36	22			
24	10 11	10 53		24	3 17	3 46	38	24			
26	10 23	11 04		26	3 28	4 28	40	26			
28	10 38	11 15		28	3 38	4 40	PB 42	28			
30	10 45	11 28		30	3 48	4 50	PB 44	30			
C 1	10 55	11 39		1				C 1			
C 2	1 11	1 42	14	2				C 2	7 24	8 35	78

REMARKS:

23 | 26   20 | 16   17 | 17

Condition of Signals

Condition of Pusher 23 20 17 60   26 14 17 59

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	6		6-7	6	6	
1-2	6	5		7-8	3	2	
2-3	6	6		8-9	4	4	
3-4	5	5		9-10	6	6	
4-5	3	3		10-11	5	5	
5-6	6	6		11-12	5	5	
	31	31			29	28	

Total Ovens Pushed 60
Total Ovens Charged 59

Pusherman
Battery Foreman C.M. Jones

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs. Beginning 12:00 A M

Date 11-5-92

BATTERY NO. As-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13			12	02	
15			12	12	
17			12	22	
19	12	00	12	29	
21	12	10	12	39	
23	12	20	12	50	
25	12	31	1	01	
27	12	41	1	12	
29	12	52	1	23	
31	1	03	1	33	
2	8	06	8	46	
4	8	18	8	56	
6	8	31	9	10	
8	8	44	9	30	
10	8	54	9	30	
12	9	08	9	40	
14	9	16	9	50	
16	9	28	10	—	
18	9	38	10	10	
20	9	48	10	20	
22	9	58	10	30	
24	10	16	10	40	
26	10	26	10	50	
28	10	36	11	—	
30	10	46	11	10	
1					
2					

BATTERY NO. Bs-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	56	11	20	
3	11	13	11	30	
5	11	23	11	46	
7	11	33			
9	11	43			
11	11	53			
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	1	14	1	44	
4	1	25	1	33	
6	1	35	2	05	
8	1	46	2	15	
10	1	57	2	26	
12	2	07	2	37	
14	2	17	2	48	
16	2	28	3	—	
18	2	39	3	10	
20	2	50	3	20	
22	3	02	3	30	
24	3	12	3	40	
26	3	22	3	50	
28	3	32	4	33	
30	3	42	4	44	
C1	3	52	4	55	
2					

BATTERY NO. As-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	35	5	05	
3	4	44	5	16	
5	4	57	5	27	
7	5	07	5	39	
9	5	18	5	50	
11	5	29	6	01	
13	5	41	6	13	
15	5	52	6	23	
17	6	03	6	35	
19	6	15	6	47	
21	6	25	7	01	
23	6	37	7	11	
25	6	49	7	21	
27	7	03	8	08	
29	7	13	8	16	
31	7	23	8	29	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

REMARKS:

22 | 25

22 | 19

1 | 16 | 14 | 23

44 | 19

16 | 16

60 | 60

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	11-12	6-7	5	5	11-11
1-2	6	6	12-11	7-8	3	3	6-5
2-3	5	5	11-11	8-9	5	5	9-9
3-4	6	6	11-11	9-10	6	6	12-12
4-5	3	3	6-6	10-11	5	5	10-10
5-6	5	5	11-11	11-12	5	5	10-10
	31	31			29	29	

Total Ovens Pushed 60

Total Ovens Charged 60

Pusherman

Battery Foreman C. M. Jones

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 P M
Date 11-5-72

BATTERY NO. B-2

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1			
3	5 47	6 14	
5	5 57	6 24	
7	6 06	6 34	
9	6 16	6 44	
11	6 26	6 54	
13	6 36	7 03	
15	6 46	7 15	
17	6 56	7 27	
19	7 05	7 39	
21	7 17	7 51	
23	7 29	8 30	
25	7 41	8 40	
27	7 53	8 50	
29	8 32	9 —	
31	8 42	9 10	
2			
4			
6			
8			
10			
12			
14			
16			
18			
20			
22			
24			
26			
28			
30			
1			
2	8 52	9 20	

BATTERY NO. A-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1			
3		12 33	
5		12 43	
7		12 51	
9		12 53	
11	12 35	1 03	
13	12 45	1 15	
15	12 55	1 28	
17	1 05	1 38	
19	1 17	1 48	
21	1 30	1 57	
23	1 40	2 07	
25	1 50	2 19	
27	1 59	2 32	
29	2 09	2 45	
31	2 21	2 56	
2	9 02	9 30	
4	9 12	9 40	
6	9 22	9 50	
8	9 32	10 02	
10	9 42	10 12	
12	9 52	10 22	
14	10 04	10 32	
16	10 14	10 42	
18	10 24	10 52	
20	10 34	11 03	
22	10 44	11 15	
24	10 54	11 27	
26	11 05		
28	11 17		
30	11 29		
1			
2			

BATTERY NO. B-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1			
3			
5			
7			
9			
11			
13			
15			
17			
18			
21			
23			
25			
27			
29			
31			
2	2 34	3 05	
4	2 47	3 18	
6	2 58	3 28	
8	3 07	3 38	
10	3 20	3 48	
12	3 30	4 06	
14	3 40	4 18	
16	3 50	4 30	
18	4 05	4 42	
20	4 20	4 54	
22	4 32	5 05	
24	4 44	5 15	
26	4 56	5 25	P-B
28	5 07	5 35	
30	5 17	5 45	
1	5 27	5 55	
2			

REMARKS:

16/16 26/27 16/16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

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

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

Total Ovens Pushed 58
Total Ovens Charged 59

Pusherman

Battery Foreman Warco

CC-10295 REV. 1181
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs. Beginning 12:00 PM

Date 11-5-92

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	41	6	11	
3	5	52	6	27	
5	5	3-	6	37	
7	5	14	6	47	
9	6	25	6	58	PB
11	6	35	7	08	
13	6	45	7	18	PB
15	6	56	7	29	
17	7	06	7	39	
19	7	16	7	50	
21	7	27	7	56	
23	7	37	8	35	
25	7	48	8	48	
27	7	58	8	58	
29	8	36	9	08	
31	8	46	9	18	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7			12	36	
9			12	46	
11			12	56	
(13)	12	38	1	01	
15	12	48	1	11	
17	12	58	1	21	
19	1	09	1	31	
21	1	19		41	
23	1	29	1	51	
25	1	39	2	09	
27	1	49	2	19	
29	1	59	2	29	
31	2	16	2	39	
2	8	56	9	28	
4	9	06	9	38	
6	9	16	9	48	
8	9	26	9	58	
10	9	36	10	09	
12	9	46	10	19	
14	9	56	10	29	
16	10	07	10	39	
18	10	17	10	50	
20	10	27	10	59	
22	10	37		09	
24	10	47	11	19	
26	10	57			PB
28	11	07			
30	11	17			
1					
C-2	2	26	2	29	

BATTERY NO. A-2

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	46	3	14	
4	2	56	3	24	
6	3	02	3	34	
8	3	12	3	44	
10	3	22	4	08	
12	3	32	4	19	
14	3	42	4	31	
(16)	4	06	4	41	
18	4	17	4	53	
20	4	27	5	03	
22	4	37	5	15	
24	4	51	5	25	
26	5	01	5	37	
28	5	13	5	47	
30	5	23	5	49	
B-1	5	29			
2					

REMARKS: 16/16 26/26 16/16

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

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

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

Total Ovens Pushed 58

Total Ovens Charged 58

Pusherman

Battery Foreman Wm Co

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 10-3-92 TURN 1

F.P. B 3/3

L.P. A 15/3

B 1 /2	A16 /1	C 2 /1	B17 /3
A 1 /3	B18 /3	B 2 /2	A17 /1
B 3 /2	A18 /1	A 2 /3	B19 /3
A 3 /3	B20 /3	B 4 /2	A19 /1
B 5 /2	A20 /1	A 4 /3	B21 /3
A 5 /3	B22 /3	B 6 /2	A21 /1
B 7 /2	A22 /1	A 6 /3	B23 /3
A 7 /3	B24 /3	B 8 /2	A23 /1
B 9 /2	A24 /1	A 8 /3	B25 /3
A 9 /3	B26 /3	B10 /2	A25 /1
B11 /2	A26 /1	A10 /3	B27 /3
A11 /3	B28 /3	B12 /2	A27 /1
B13 /2	A28 /1	A12 /3	B29 /3
A13 /3	B30 /3	B14 /2	A29 /1
B15 /2	A30 /1	A14 /3	B31 /3
A15 /3	C 1 /3	B16 /2	A31 /1
B17 /2	B 1 /1	A16 /3	C 2 /3
A17 /3	A 1 /2	B18 /2	B 2 /1
B19 /2	B 3 /1	A18 /3	A 2 /2
A19 /3	A 3 /2	B20 /2	B 4 /1
B21 /2	B 5 /1	A20 /3	A 4 /2
A21 /3	A 5 /2	B22 /2	B 6 /1
B23 /2	B 7 /1	A22 /3	A 6 /2
A23 /3	A 7 /2	B24 /2	B 8 /1
B25 /2	B 9 /1	A24 /3	A 8 /2
A25 /3	A 9 /2	B26 /2	B10 /1
B27 /2	B11 /1	A26 /3	A10 /2
A27 /3	A11 /2	B28 /2	B12 /1
B29 /2	B13 /1	A28 /3	A12 /2
A29 /3	A13 /2	B30 /2	B14 /1
B31 /2	B15 /1	A30 /3	A14 /2
A31 /3	A15 /2	C 1 /2	B16 /1
C 2 /2	B17 /1	B 1 /3	A16 /2
B 2 /3	A17 /2	A 1 /1	B18 /1
A 2 /1	B19 /1	B 3 /3	A18 /2
B 4 /3	A19 /2	A 3 /1	B20 /1
A 4 /1	B21 /1	B 5 /3	A20 /2
B 6 /3	A21 /2	A 5 /1	B22 /1
A 6 /1	B23 /1	B 7 /3	A22 /2
B 8 /3	A23 /2	A 7 /1	B24 /1
A 8 /1	B25 /1	B 9 /3	A24 /2
B10 /3	A25 /2	A 9 /1	B26 /1
A10 /1	B27 /1	B11 /3	A26 /2
B12 /3	A27 /2	A11 /1	B28 /1
A12 /1	B29 /1	B13 /3	A28 /2
B14 /3	A29 /2	A13 /1	B30 /1
A14 /1	B31 /1	B15 /3	A30 /2
B16 /3	A31 /2	A15 /1	C 1 /1

79

+C-2-1

79 OVENS +C 2/1 WA 9/1

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11/3/92 TURN 2

F. P. B-17-2

L. P. A-29-2

B 1 /2		A16 /1		C 2 /1		B17 /3	
A 1 /3		B18 /3		B 2 /2		A17 /1	
B 3 /2		A18 /1		A 2 /3		B19 /3	
A 3 /3		B20 /3		B 4 /2		A19 /1	
B 5 /2		A20 /1		A 4 /3		B21 /3	
A 5 /3		B22 /3		B 6 /2		A21 /1	
B 7 /2		A22 /1		A 6 /3		B23 /3	
A 7 /3		B24 /3		B 8 /2		A23 /1	
B 9 /2		A24 /1		A 8 /3		B25 /3	
A 9 /3		B26 /3		B10 /2		A25 /1	
B11 /2		A26 /1		A10 /3		B27 /3	
A11 /3		B28 /3		B12 /2		A27 /1	
B13 /2		A28 /1		A12 /3		B29 /3	
A13 /3		B30 /3		B14 /2		A29 /1	
B15 /2		A30 /1		A14 /3		B31 /3	
A15 /3		C 1 /3		B16 /2		A31 /1	
B17 /2	1	B 1 /1		A16 /3		C 2 /3	
A17 /3		A 1 /2		B18 /2		B 2 /1	
B19 /2		B 3 /1		A18 /3		A 2 /2	
A19 /3		A 3 /2		B20 /2		B 4 /1	
B21 /2		B 5 /1		A20 /3		A 4 /2	
A21 /3		A 5 /2		B22 /2		B 6 /1	
B23 /2		B 7 /1		A22 /3		A 6 /2	
A23 /3		A 7 /2		B24 /2		B 8 /1	
B25 /2		B 9 /1		A24 /3		A 8 /2	
A25 /3		A 9 /2		B26 /2		B10 /1	
B27 /2		B11 /1		A26 /3		A10 /2	
A27 /3		A11 /2		B28 /2		B12 /1	
B29 /2		B13 /1		A28 /3		A12 /2	
A29 /3		A13 /2		B30 /2		B14 /1	
B31 /2		B15 /1		A30 /3		A14 /2	
A31 /3		A15 /2		C 1 /2		B16 /1	
C 2 /2		B17 /1		B 1 /3		A16 /2	
B 2 /3		A17 /2		A 1 /1		B18 /1	
A 2 /1		B19 /1		B 3 /3		A18 /2	
B 4 /3		A19 /2		A 3 /1		B20 /1	
A 4 /1		B21 /1		B 5 /3		A20 /2	
B 6 /3		A21 /2		A 5 /1		B22 /1	
A 6 /1		B23 /1		B 7 /3		A22 /2	
B 8 /3		A23 /2		A 7 /1		B24 /1	
A 8 /1		B25 /1		B 9 /3		A24 /2	
B10 /3		A25 /2		A 9 /1		B26 /1	
A10 /1		B27 /1		B11 /3		A26 /2	
B12 /3		A27 /2		A11 /1		B28 /1	
A12 /1		B29 /1		B13 /3		A28 /2	
B14 /3		A29 /2	78	A13 /1		B30 /1	
A14 /1		B31 /1		B15 /3		A30 /2	
B16 /3		A31 /2		A15 /1		C 1 /1	

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11/3/92 TURN 3

F. P. A27/2

L. P. A10/2

B 1 /2		A16 /1		C 2 /1	Pass Up	B17 /3	
A 1 /3		B18 /3		B 2 /2		A17 /1	
B 3 /2		A18 /1		A 2 /3		B19 /3	
A 3 /3		B20 /3		B 4 /2		A19 /1	
B 5 /2		A20 /1		A 4 /3		B21 /3	
A 5 /3		B22 /3		B 6 /2		A21 /1	
B 7 /2		A22 /1		A 6 /3		B23 /3	
A 7 /3		B24 /3		B 8 /2		A23 /1	
B 9 /2		A24 /1		A 8 /3		B25 /3	
A 9 /3		B26 /3		B10 /2		A25 /1	
B11 /2		A26 /1		A10 /3		B27 /3	
A11 /3		B28 /3		B12 /2		A27 /1	
B13 /2		A28 /1		A12 /3		B29 /3	
A13 /3		B30 /3		B14 /2		A29 /1	
B15 /2		A30 /1		A14 /3		B31 /3	
A15 /3		C 1 /3		B16 /2		A31 /1	
B17 /2		B 1 /1		A16 /3		C 2 /3	
A17 /3		A 1 /2		B18 /2		B 2 /1	
B19 /2		B 3 /1		A18 /3		A 2 /2	
A19 /3		A 3 /2		B20 /2		B 4 /1	
B21 /2		B 5 /1		A20 /3		A 4 /2	
A21 /3		A 5 /2		B22 /2		B 6 /1	
B23 /2		B 7 /1		A22 /3		A 6 /2	
A23 /3		A 7 /2		B24 /2		B 8 /1	
B25 /2		B 9 /1		A24 /3		A 8 /2	
A25 /3		A 9 /2		B26 /2		B10 /1	
B27 /2		B11 /1		A26 /3		A10 /2	
A27 /3		A11 /2		B28 /2		B12 /1	79
B29 /2		B13 /1		A28 /3		A12 /2	
A29 /3		A13 /2		B30 /2		B14 /1	
B31 /2		B15 /1		A30 /3	Pass Up	A14 /2	
A31 /3		A15 /2		C 1 /2		B16 /1	
C 2 /2		B17 /1		B 1 /3		A16 /2	
B 2 /3		A17 /2		A 1 /1		B18 /1	
A 2 /1		B19 /1		B 3 /3		A18 /2	
B 4 /3		A19 /2		A 3 /1		B20 /1	
A 4 /1		B21 /1		B 5 /3		A20 /2	
B 6 /3		A21 /2		A 5 /1		B22 /1	
A 6 /1		B23 /1		B 7 /3		A22 /2	
B 8 /3		A23 /2		A 7 /1		B24 /1	
A 8 /1		B25 /1		B 9 /3		A24 /2	
B10 /3		A25 /2		A 9 /1		B26 /1	
A10 /1		B27 /1		B11 /3		A26 /2	
B12 /3		A27 /2	1	A11 /1		B28 /1	
A12 /1		B29 /1		B13 /3		A28 /2	
B14 /3		A29 /2		A13 /1		B30 /1	
A14 /1		B31 /1		B15 /3		A30 /2	
B16 /3		A31 /2		A15 /1		C 1 /1	

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11-4-92 TURN 1

F.P. A 12/1

L.P. A 26/1

B 1 /2	A16 /1	C 2 /1	B17 /3
A 1 /3	B18 /3	B 2 /2	A17 /1
B 3 /2	A18 /1	A 2 /3	B19 /3
A 3 /3	B20 /3	B 4 /2	A19 /1
B 5 /2	A20 /1	A 4 /3	B21 /3
A 5 /3	B22 /3	B 6 /2	A21 /1
B 7 /2	A22 /1	A 6 /3	B23 /3
A 7 /3	B24 /3	B 8 /2	A23 /1
B 9 /2	A24 /1	A 8 /3	B25 /3
A 9 /3	B26 /3	B10 /2	A25 /1
B11 /2	A26 /1	A10 /3	B27 /3
A11 /3	B28 /3	B12 /2	A27 /1
B13 /2	A28 /1	A12 /3	B29 /3
A13 /3	B30 /3	B14 /2	A29 /1
B15 /2	A30 /1	A14 /3	B31 /3
A15 /3	C 1 /3	B16 /2	A31 /1
B17 /2	B 1 /1	A16 /3	C 2 /3
A17 /3	A 1 /2	B18 /2	B 2 /1
B19 /2	B 3 /1	A18 /3	A 2 /2
A19 /3	A 3 /2	B20 /2	B 4 /1
B21 /2	B 5 /1	A20 /3	A 4 /2
A21 /3	A 5 /2	B22 /2	B 6 /1
B23 /2	B 7 /1	A22 /3	A 6 /2
A23 /3	A 7 /2	B24 /2	B 8 /1
B25 /2	B 9 /1	A24 /3	A 8 /2
A25 /3	A 9 /2	B26 /2	B10 /1
B27 /2	B11 /1	A26 /3	A10 /2
A27 /3	A11 /2	B28 /2	B12 /1
B29 /2	B13 /1	A28 /3	A12 /2
A29 /3	A13 /2	B30 /2	B14 /1
B31 /2	B15 /1	A30 /3	A14 /2
A31 /3	A15 /2	C 1 /2	B16 /1
C 2 /2	B17 /1	B 1 /3	A16 /2
B 2 /3	A17 /2	A 1 /1	B18 /1
A 2 /1	B19 /1	B 3 /3	A18 /2
B 4 /3	A19 /2	A 3 /1	B20 /1
A 4 /1	B21 /1	B 5 /3	A20 /2
B 6 /3	A21 /2	A 5 /1	B22 /1
A 6 /1	B23 /1	B 7 /3	A22 /2
B 8 /3	A23 /2	A 7 /1	B24 /1
A 8 /1	B25 /1	B 9 /3	A24 /2
B10 /3	A25 /2	A 9 /1	B26 /1
A10 /1	B27 /1	B11 /3	A26 /2
B12 /3	A27 /2	A11 /1	B28 /1
A12 /1	B29 /1	B13 /3	A28 /2
B14 /3	A29 /2	A13 /1	B30 /1
A14 /1	B31 /1	B15 /3	A30 /2
B16 /3	A31 /2	A15 /1	C 1 /1

79

79 OVENS

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11-4-92 TURN 8 X 4

F. P.
B283

L. P.
B9-3

78 ovens

B 1 /2	A16 /1	C 2 /1	B17 /3
A 1 /3	B18 /3	B 2 /2	A17 /1
B 3 /2	A18 /1	A 2 /3	B19 /3
A 3 /3	B20 /3	B 4 /2	A19 /1
B 5 /2	A20 /1	A 4 /3	B21 /3
A 5 /3	B22 /3	B 6 /2	A21 /1
B 7 /2	A22 /1	A 6 /3	B23 /3
A 7 /3	B24 /3	B 8 /2	A23 /1
B 9 /2	A24 /1	A 8 /3	B25 /3
A 9 /3	B26 /3	B10 /2	A25 /1
B11 /2	A26 /1	A10 /3	B27 /3
A11 /3	B28 /3	B12 /2	A27 /1
B13 /2	A28 /1	A12 /3	B29 /3
A13 /3	B30 /3	B14 /2	A29 /1
B15 /2	A30 /1	A14 /3	B31 /3
A15 /3	C 1 /3	B16 /2	A31 /1
B17 /2	B 1 /1	A16 /3	C 2 /3
A17 /3	A 1 /2	B18 /2	B 2 /1
B19 /2	B 3 /1	A18 /3	A 2 /2
A19 /3	A 3 /2	B20 /2	B 4 /1
B21 /2	B 5 /1	A20 /3	A 4 /2
A21 /3	A 5 /2	B22 /2	B 6 /1
B23 /2	B 7 /1	A22 /3	A 6 /2
A23 /3	A 7 /2	B24 /2	B 8 /1
B25 /2	B 9 /1	A24 /3	A 8 /2
A25 /3	A 9 /2	B26 /2	B10 /1
B27 /2	B11 /1	A26 /3	A10 /2
A27 /3	A11 /2	B28 /2	B12 /1
B29 /2	B13 /1	A28 /3	A12 /2
A29 /3	A13 /2	B30 /2	B14 /1
B31 /2	B15 /1	A30 /3	A14 /2
A31 /3	A15 /2	C 1 /2	B16 /1
C 2 /2	B17 /1	B 1 /3	A16 /2
B 2 /3	A17 /2	A 1 /1	B18 /1
A 2 /1	B19 /1	B 3 /3	A18 /2
B 4 /3	A19 /2	A 3 /1	B20 /1
A 4 /1	B21 /1	B 5 /3	A20 /2
B 6 /3	A21 /2	A 5 /1	B22 /1
A 6 /1	B23 /1	B 7 /3	A22 /2
B 8 /3	A23 /2	A 7 /1	B24 /1
A 8 /1	B25 /1	B 9 /3	A24 /2
B10 /3	A25 /2	A 9 /1	B26 /1
A10 /1	B27 /1	B11 /3	A26 /2
B12 /3	A27 /2	A11 /1	B28 /1
A12 /1	B29 /1	B13 /3	A28 /2
B14 /3	A29 /2	A13 /1	B30 /1
A14 /1	B31 /1	B15 /3	A30 /2
B16 /3	A31 /2	A15 /1	C 1 /1

78

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11-4-93 TURN 3

F. P. A3/1

L. P. B19/2

B 1 /2
A 1 /3
B 3 /2
A 3 /3
B 5 /2
A 5 /3
B 7 /2
A 7 /3
B 9 /2
A 9 /3
B11 /2
A11 /3
B13 /2
A13 /3
B15 /2
A15 /3
B17 /2
A17 /3
B19 /2
A19 /3
B21 /2
A21 /3
B23 /2
A23 /3
B25 /2
A25 /3
B27 /2
A27 /3
B29 /2
A29 /3
B31 /2
A31 /3
C 2 /2
B 2 /3
A 2 /1
B 4 /3
A 4 /1
B 6 /3
A 6 /1
B 8 /3
A 8 /1
B10 /3
A10 /1
B12 /3
A12 /1
B14 /3
A14 /1
B16 /3

78

A16 /1
B18 /3
A18 /1
B20 /3
A20 /1
B22 /3
A22 /1
B24 /3
A24 /1
B26 /3
A26 /1
B28 /3
A28 /1
B30 /3
A30 /1
C 1 /3
B 1 /1
A 1 /2
B 3 /1
A 3 /2
B 5 /1
A 5 /2
B 7 /1
A 7 /2
B 9 /1
A 9 /2
B11 /1
A11 /2
B13 /1
A13 /2
B15 /1
A15 /2
B17 /1
A17 /2
B19 /1
A19 /2
B21 /1
A21 /2
B23 /1
A23 /2
B25 /1
A25 /2
B27 /1
A27 /2
B29 /1
A29 /2
B31 /1
A31 /2

C 2 /1
B 2 /2
A 2 /3
B 4 /2
A 4 /3
B 6 /2
A 6 /3
B 8 /2
A 8 /3
B10 /2
A10 /3
B12 /2
A12 /3
B14 /2
A14 /3
B16 /2
A16 /3
B18 /2
A18 /3
B20 /2
A20 /3
B22 /2
A22 /3
B24 /2
A24 /3
B26 /2
A26 /3
B28 /2
A28 /3
B30 /2
A30 /3
C 1 /2
B 1 /3
A 1 /1
B 3 /3
A 3 /1
B 5 /3
A 5 /1
B 7 /3
A 7 /1
B 9 /3
A 9 /1
B11 /3
A11 /1
B13 /3
A13 /1
B15 /3
A15 /1

1

B17 /3
A17 /1
B19 /3
A19 /1
B21 /3
A21 /1
B23 /3
A23 /1
B25 /3
A25 /1
B27 /3
A27 /1
B29 /3
A29 /1
B31 /3
A31 /1
C 2 /3
B 2 /1
A 2 /2
B 4 /1
A 4 /2
B 6 /1
A 6 /2
B 8 /1
A 8 /2
B10 /1
A10 /2
B12 /1
A12 /2
B14 /1
A14 /2
B16 /1
A16 /2
B18 /1
A18 /2
B20 /1
A20 /2
B22 /1
A22 /2
B24 /1
A24 /2
B26 /1
A26 /2
B28 /1
A28 /2
B30 /1
A30 /2
C 1 /1

Pass UP

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11-5-92 TURN 1

F. P.
A 19/3
L. P.

B 1 /2	A16 /1	C 2 /1	B17 /3
A 1 /3	B18 /3	B 2 /2	A17 /1
B 3 /2	A18 /1	A 2 /3	B19 /3
A 3 /3	B20 /3	B 4 /2	A19 /1
B 5 /2	A20 /1	A 4 /3	B21 /3
A 5 /3	B22 /3	B 6 /2	A21 /1
B 7 /2	A22 /1	A 6 /3	B23 /3
A 7 /3	B24 /3	B 8 /2	A23 /1
B 9 /2	A24 /1	A 8 /3	B25 /3
A 9 /3	B26 /3	B10 /2	A25 /1
B11 /2	A26 /1	A10 /3	B27 /3
A11 /3	B28 /3	B12 /2	A27 /1
B13 /2	A28 /1	A12 /3	B29 /3
A13 /3	B30 /3	B14 /2	A29 /1
B15 /2	A30 /1	A14 /3	B31 /3
A15 /3	C 1 /3	B16 /2	A31 /1
B17 /2	B 1 /1	A16 /3	C 2 /3
A17 /3	A 1 /2	B18 /2	B 2 /1
B19 /2	B 3 /1	A18 /3	A 2 /2
A19 /3	A 3 /2	B20 /2	B 4 /1
B21 /2	B 5 /1	A20 /3	A 4 /2
A21 /3	A 5 /2	B22 /2	B 6 /1
B23 /2	B 7 /1	A22 /3	A 6 /2
A23 /3	A 7 /2	B24 /2	B 8 /1
B25 /2	B 9 /1	A24 /3	A 8 /2
A25 /3	A 9 /2	B26 /2	B10 /1
B27 /2	B11 /1	A26 /3	A10 /2
A27 /3	A11 /2	B28 /2	B12 /1
B29 /2	B13 /1	A28 /3	A12 /2
A29 /3	A13 /2	B30 /2	B14 /1
B31 /2	B15 /1	A30 /3	A14 /2
A31 /3	A15 /2	C 1 /2	B16 /1
C 2 /2	B17 /1	B 1 /3	A16 /2
B 2 /3	A17 /2	A 1 /1	B18 /1
A 2 /1	B19 /1	B 3 /3	A18 /2
B 4 /3	A19 /2	A 3 /1	B20 /1
A 4 /1	B21 /1	B 5 /3	A20 /2
B 6 /3	A21 /2	A 5 /1	B22 /1
A 6 /1	B23 /1	B 7 /3	A22 /2
B 8 /3	A23 /2	A 7 /1	B24 /1
A 8 /1	B25 /1	B 9 /3	A24 /2
B10 /3	A25 /2	A 9 /1	B26 /1
A10 /1	B27 /1	B11 /3	A26 /2
B12 /3	A27 /2	A11 /1	B28 /1
A12 /1	B29 /1	B13 /3	A28 /2
B14 /3	A29 /2	A13 /1	B30 /1
A14 /1	B31 /1	B15 /3	A30 /2
B16 /3	A31 /2	A15 /1	C 1 /1

79 OVENS

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11/5/92 TURN 8 x 4

B 1 /2		A16 /1		C 2 /1		B17 /3	
A 1 /3		B18 /3		B 2 /2		A17 /1	
B 3 /2		A18 /1		A 2 /3	1 FP	B19 /3	
A 3 /3		B20 /3		B 4 /2		A19 /1	
B 5 /2		A20 /1		A 4 /3		B21 /3	
A 5 /3		B22 /3		B 6 /2		A21 /1	
B 7 /2		A22 /1		A 6 /3		B23 /3	
A 7 /3		B24 /3		B 8 /2		A23 /1	
B 9 /2		A24 /1		A 8 /3		B25 /3	
A 9 /3		B26 /3		B10 /2		A25 /1	
B11 /2		A26 /1		A10 /3		B27 /3	
A11 /3		B28 /3		B12 /2		A27 /1	
B13 /2		A28 /1		A12 /3		B29 /3	
A13 /3		B30 /3		B14 /2		A29 /1	
B15 /2		A30 /1		A14 /3		B31 /3	
A15 /3		C 1 /3		B16 /2		A31 /1	
B17 /2		B 1 /1		A16 /3		C 2 /3	7 +82
A17 /3		A 1 /2		B18 /2		B 2 /1	
B19 /2		B 3 /1		A18 /3		A 2 /2	
A19 /3		A 3 /2		B20 /2		B 4 /1	
B21 /2		B 5 /1		A20 /3		A 4 /2	
A21 /3		A 5 /2		B22 /2		B 6 /1	
B23 /2		B 7 /1		A22 /3		A 6 /2	
A23 /3		A 7 /2		B24 /2		B 8 /1	
B25 /2		B 9 /1		A24 /3		A 8 /2	
A25 /3		A 9 /2		B26 /2		B10 /1	
B27 /2		B11 /1		A26 /3		A10 /2	
A27 /3		A11 /2		B28 /2		B12 /1	
B29 /2		B13 /1		A28 /3		A12 /2	
A29 /3		A13 /2		B30 /2		B14 /1	
B31 /2		B15 /1		A30 /3		A14 /2	78 LP
A31 /3		A15 /2		C 1 /2		B16 /1	
C 2 /2		B17 /1		B 1 /3		A16 /2	
B 2 /3		A17 /2		A 1 /1		B18 /1	
A 2 /1		B19 /1		B 3 /3		A18 /2	
B 4 /3		A19 /2		A 3 /1		B20 /1	
A 4 /1		B21 /1		B 5 /3		A20 /2	
B 6 /3		A21 /2		A 5 /1		B22 /1	
A 6 /1		B23 /1		B 7 /3		A22 /2	
B 8 /3		A23 /2		A 7 /1		B24 /1	
A 8 /1		B25 /1		B 9 /3		A24 /2	
B10 /3		A25 /2		A 9 /1		B26 /1	
A10 /1		B27 /1		B11 /3		A26 /2	
B12 /3		A27 /2		A11 /1		B28 /1	
A12 /1		B29 /1		B13 /3		A28 /2	
B14 /3		A29 /2		A13 /1		B30 /1	
A14 /1		B31 /1		B15 /3		A30 /2	
B16 /3		A31 /2		A15 /1		C 1 /1	

F. P. #2 /3

L. P. #14 /2

1-2-3 BATTERY PUSHING SCHEDULE
2 MACHINE CREW

DATE 11-5-92 TURN 3

F. P. A 16/3

L. P. A 30/1

B 1 /2
A 1 /3
B 3 /2
A 3 /3
B 5 /2
A 5 /3
B 7 /2
A 7 /3
B 9 /2
A 9 /3
B11 /2
A11 /3
B13 /2
A13 /3
B15 /2
A15 /3
B17 /2
A17 /3
B19 /2
A19 /3
B21 /2
A21 /3
B23 /2
A23 /3
B25 /2
A25 /3
B27 /2
A27 /3
B29 /2
A29 /3
B31 /2
A31 /3
C 2 /2
B 2 /3
A 2 /1
B 4 /3
A 4 /1
B 6 /3
A 6 /1
B 8 /3
A 8 /1
B10 /3
A10 /1
B12 /3
A12 /1
B14 /3
A14 /1
B16 /3

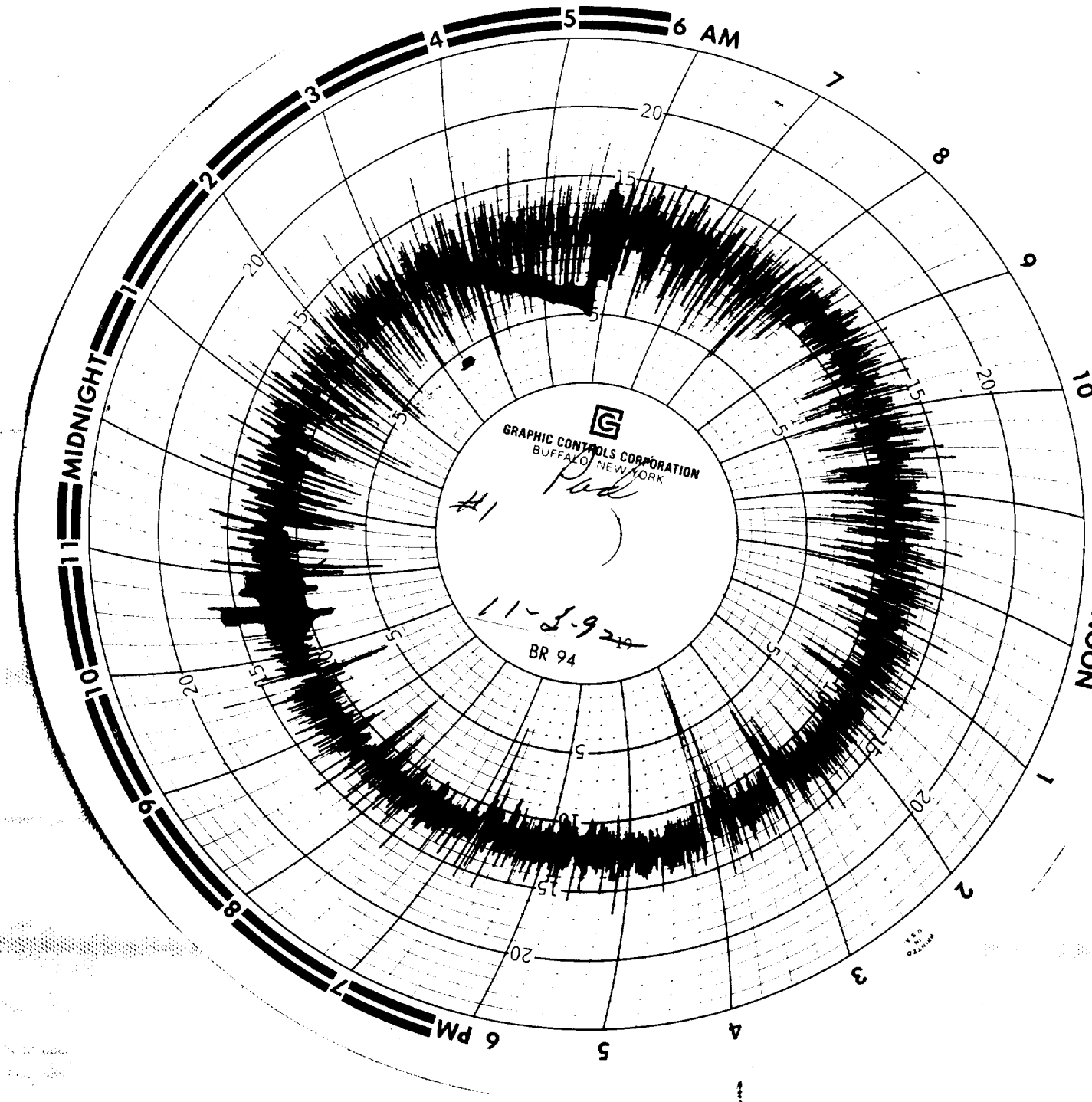
A16 /1
B18 /3
A18 /1
B20 /3
A20 /1
B22 /3
A22 /1
B24 /3
A24 /1
B26 /3
A26 /1
B28 /3
A28 /1
B30 /3
A30 /1
C 1 /3
B 1 /1
A 1 /2
B 3 /1
A 3 /2
B 5 /1
A 5 /2
B 7 /1
A 7 /2
B 9 /1
A 9 /2
B11 /1
A11 /2
B13 /1
A13 /2
B15 /1
A15 /2
B17 /1
A17 /2
B19 /1
A19 /2
B21 /1
A21 /2
B23 /1
A23 /2
B25 /1
A25 /2
B27 /1
A27 /2
B29 /1
A29 /2
B31 /1
A31 /2

79

C 2 /1
B 2 /2
A 2 /3
B 4 /2
A 4 /3
B 6 /2
A 6 /3
B 8 /2
A 8 /3
B10 /2
A10 /3
B12 /2
A12 /3
B14 /2
A14 /3
B16 /2
A16 /3
B18 /2
A18 /3
B20 /2
A20 /3
B22 /2
A22 /3
B24 /2
A24 /3
B26 /2
A26 /3
B28 /2
A28 /3
B30 /2
A30 /3
C 1 /2
B 1 /3
A 1 /1
B 3 /3
A 3 /1
B 5 /3
A 5 /1
B 7 /3
A 7 /1
B 9 /3
A 9 /1
B11 /3
A11 /1
B13 /3
A13 /1
B15 /3
A15 /1

B17 /3
A17 /1
B19 /3
A19 /1
B21 /3
A21 /1
B23 /3
A23 /1
B25 /3
A25 /1
B27 /3
A27 /1
B29 /3
A29 /1
B31 /3
A31 /1
C 2 /3
B 2 /1
A 2 /2
B 4 /1
A 4 /2
B 6 /1
A 6 /2
B 8 /1
A 8 /2
B10 /1
A10 /2
B12 /1
A12 /2
B14 /1
A14 /2
B16 /1
A16 /2
B18 /1
A18 /2
B20 /1
A20 /2
B22 /1
A22 /2
B24 /1
A24 /2
B26 /1
A26 /2
B28 /1
A28 /2
B30 /1
A30 /2
C 1 /1

79 OUCNS


6 AM
NOON
6 PM
MIDNIGHT
GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
#1
11-2-9
BR 94

6 AM
NOON
6 PM
MIDNIGHT
GRAPHIC CONTROLS CORPORATION
GP
#1
11-2-92
BR 32008

MIDNIGHT
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NOON
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MIDNIGHT
1
2
3
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5
6 AM
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11
NOON
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6 PM
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35
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10
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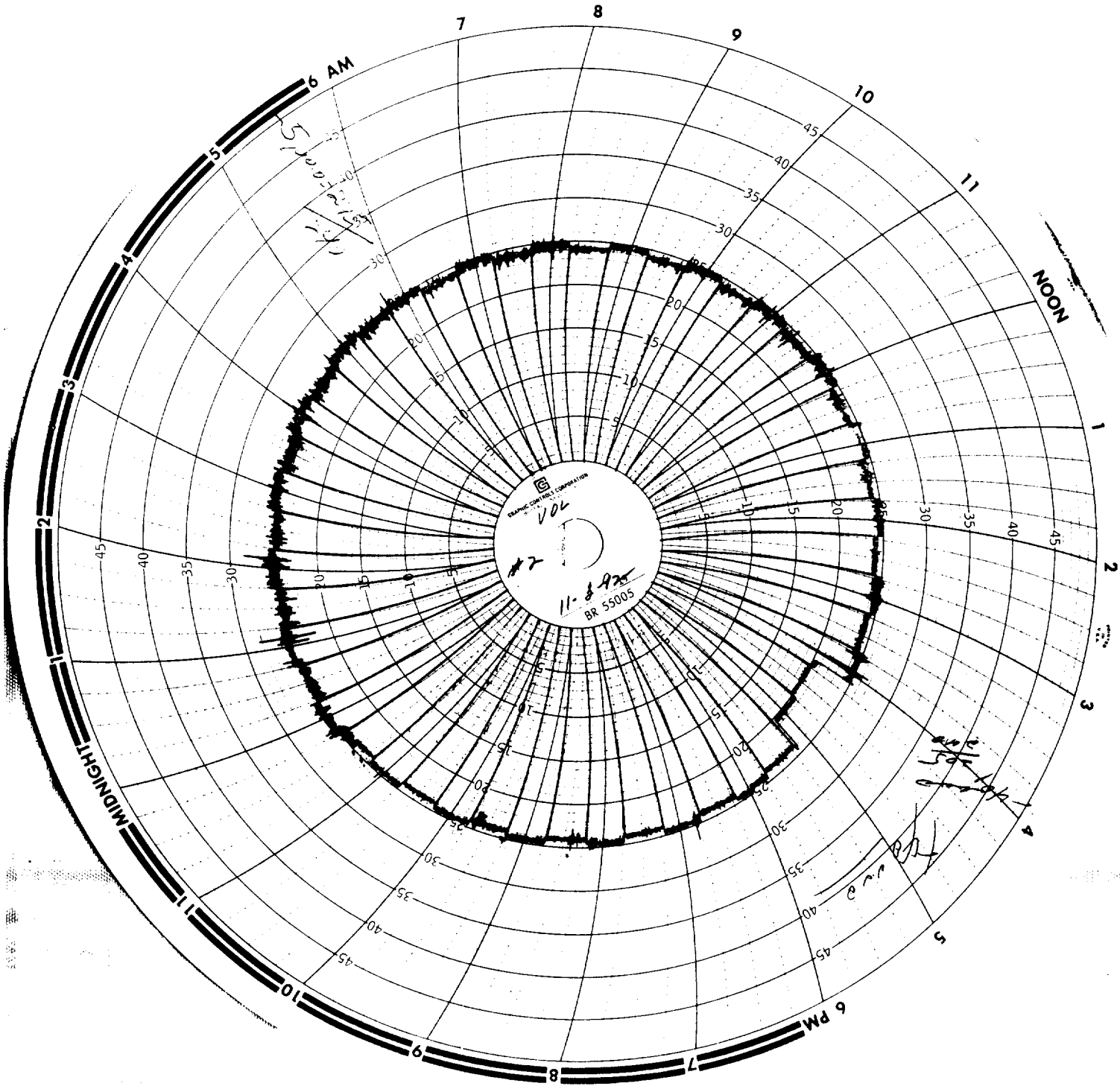
BR 55005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6 PM
MIDNIGHT
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VOL
BR 55005

NOON
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MIDNIGHT
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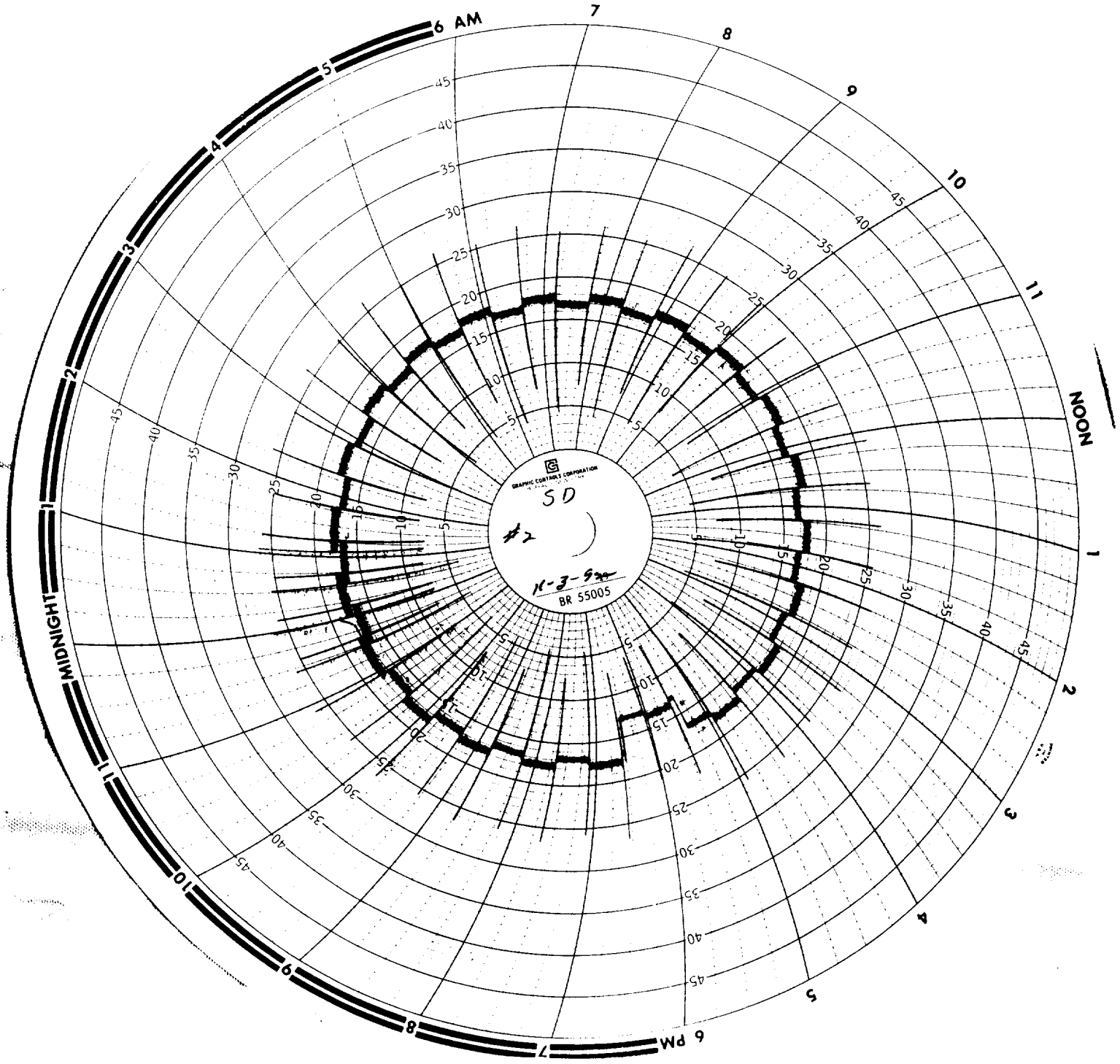
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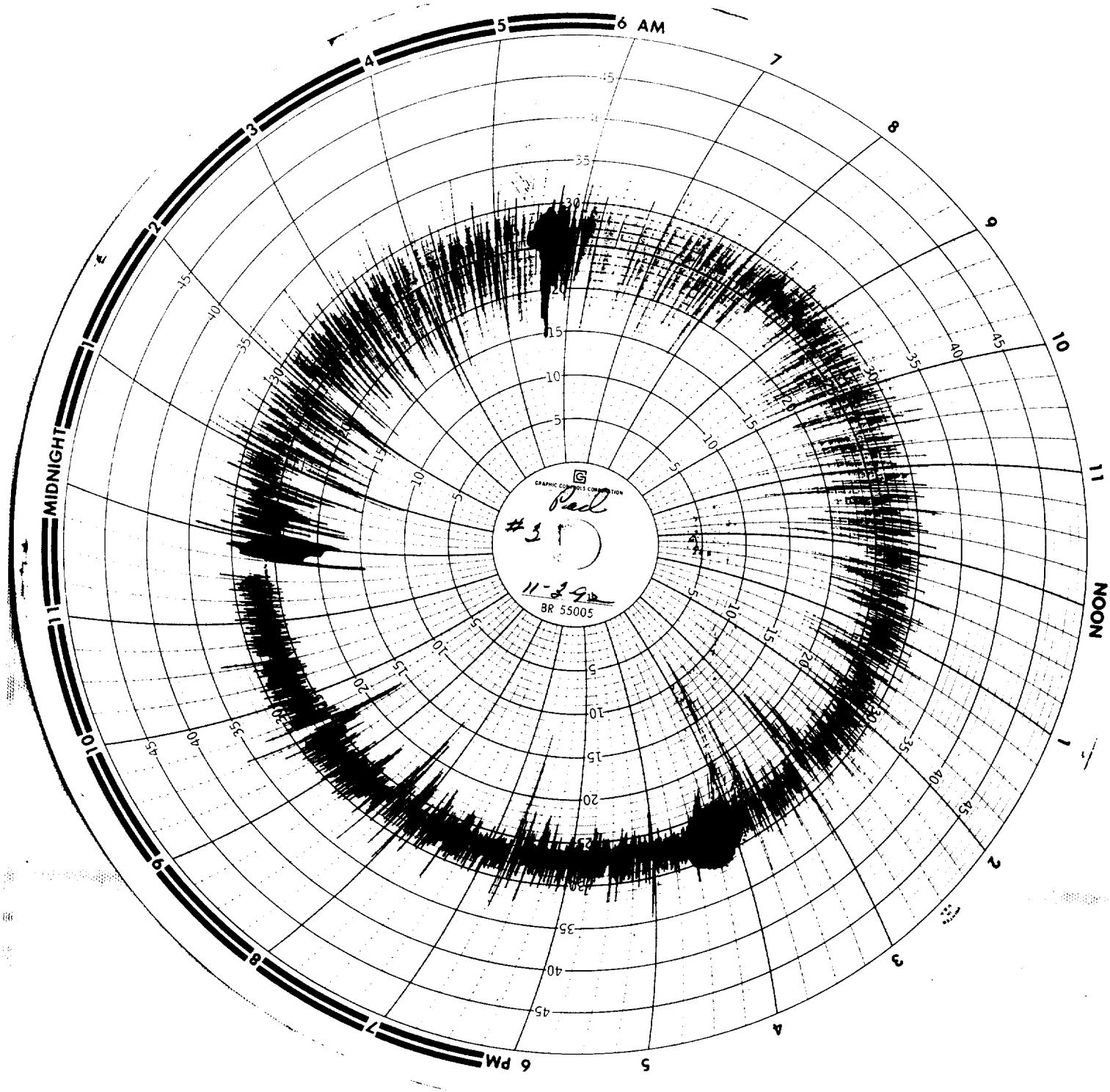
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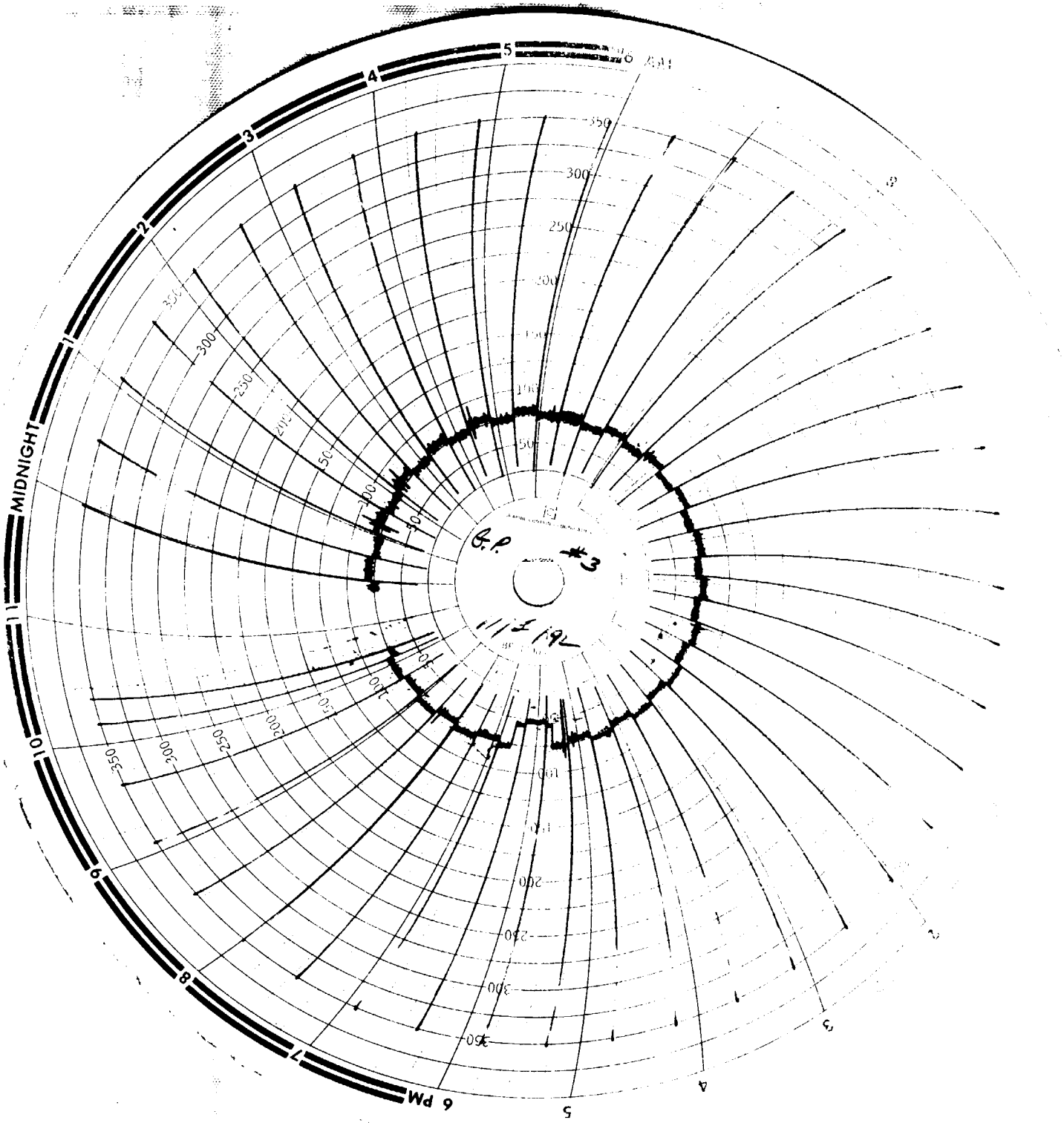
GRAPHIC CONTROLS CORPORATION
#3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11/1/92

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11/3/92
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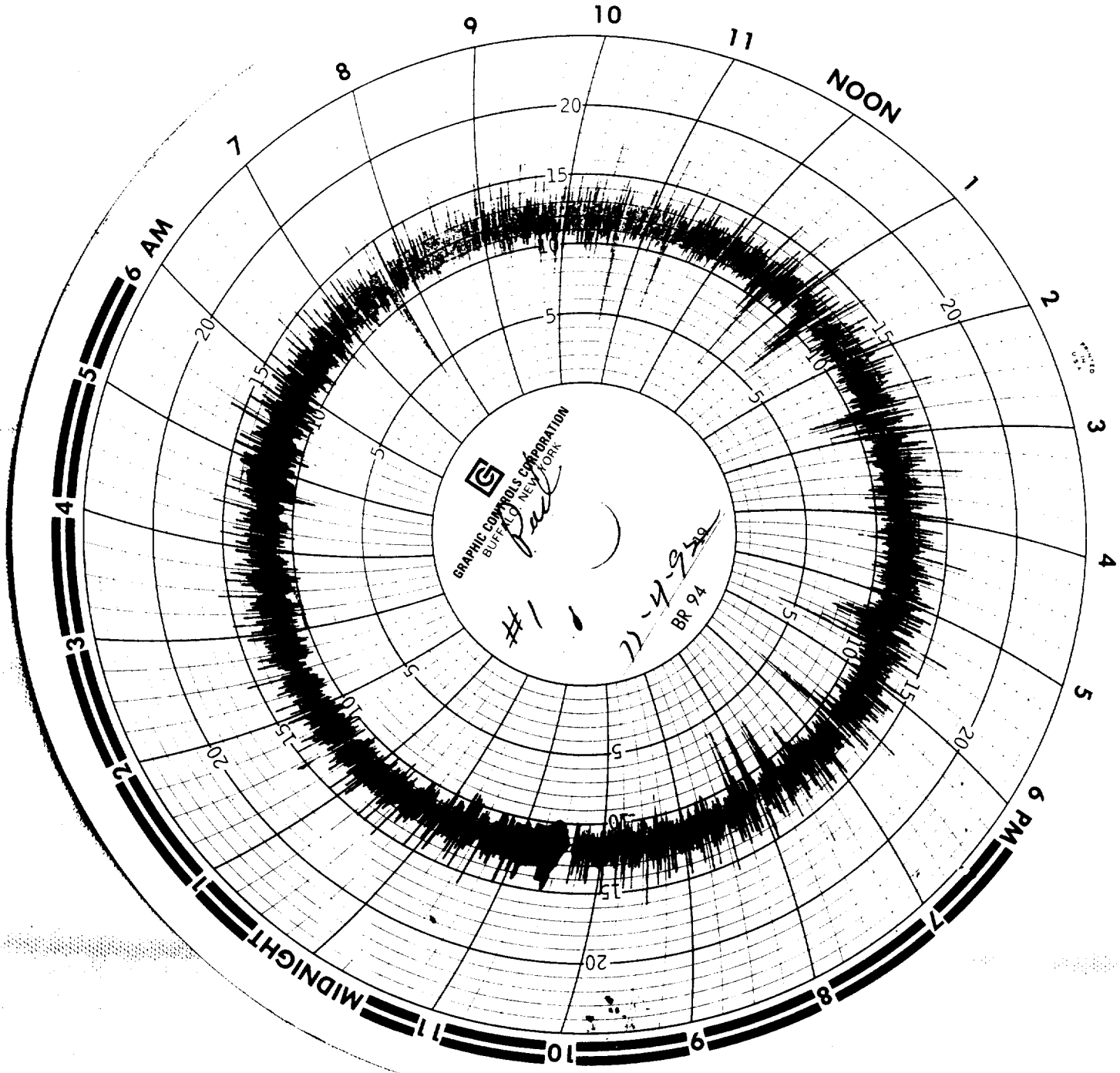
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BUFFALO NEW YORK
BR 94
MIDNIGHT
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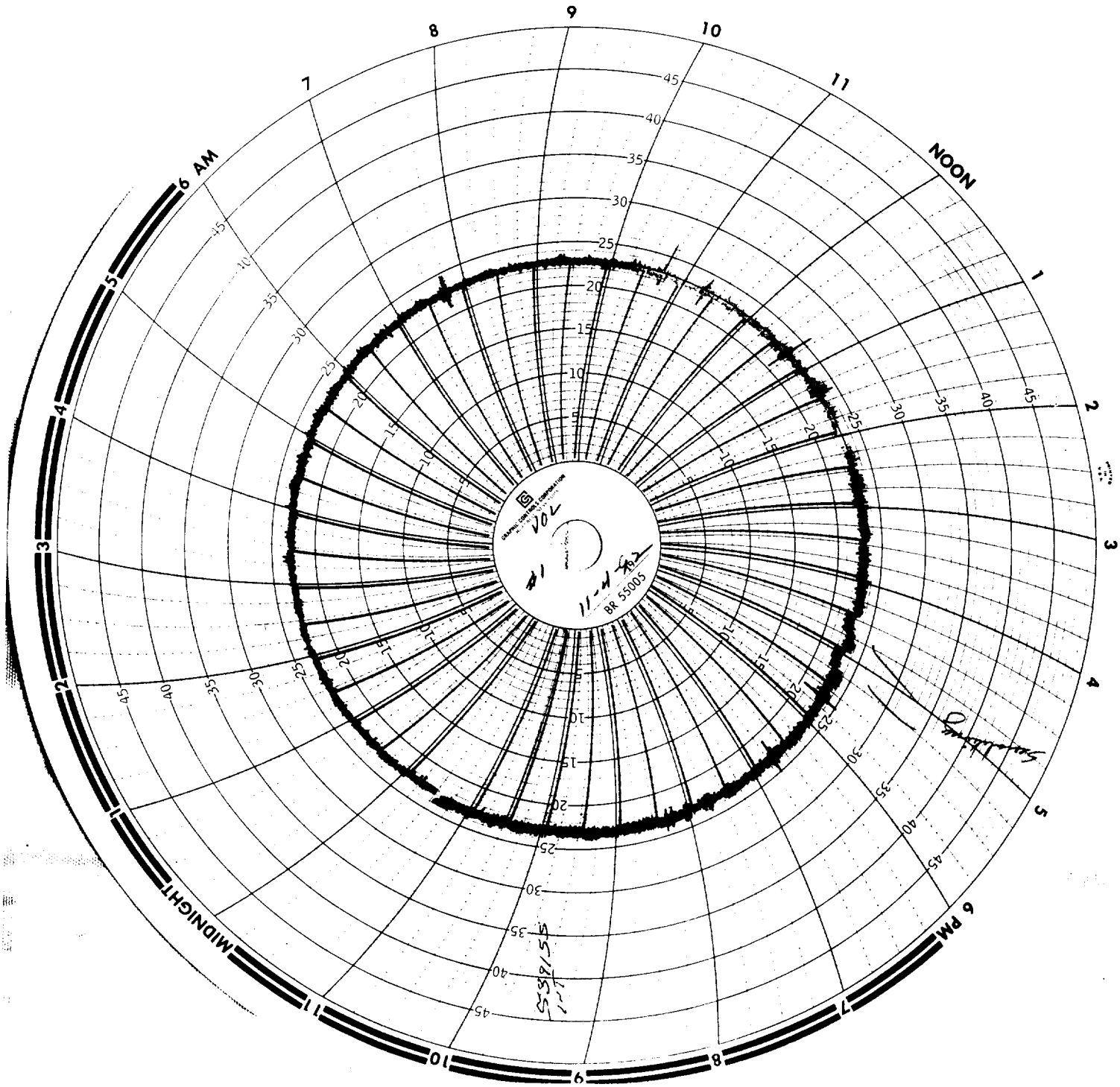
NOON
6 PM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MIDNIGHT
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NOON
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MIDNIGHT
6 AM
#1
11-4-92
BR 5500S

6 PM
MIDNIGHT
6 AM
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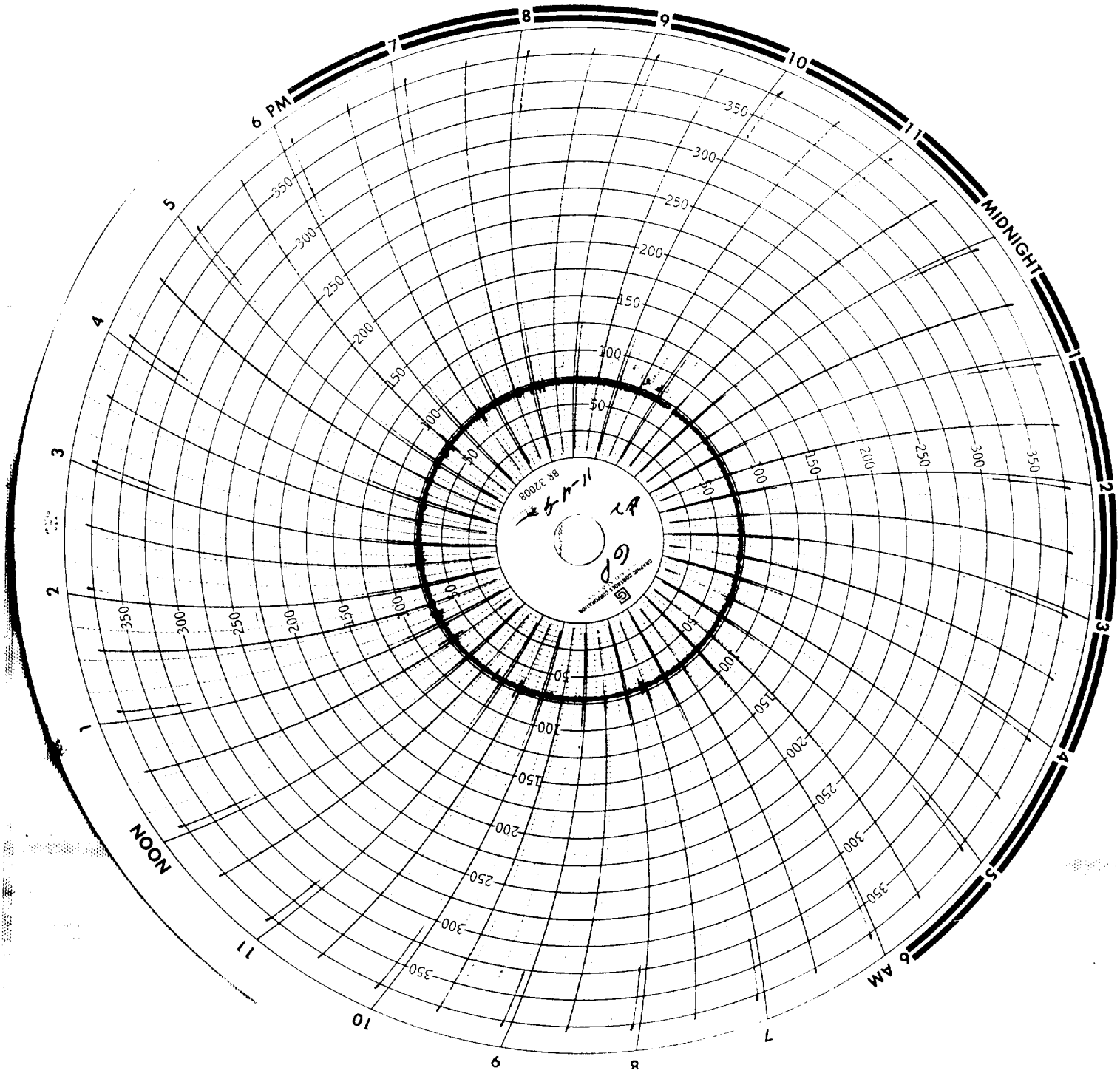
BR 55005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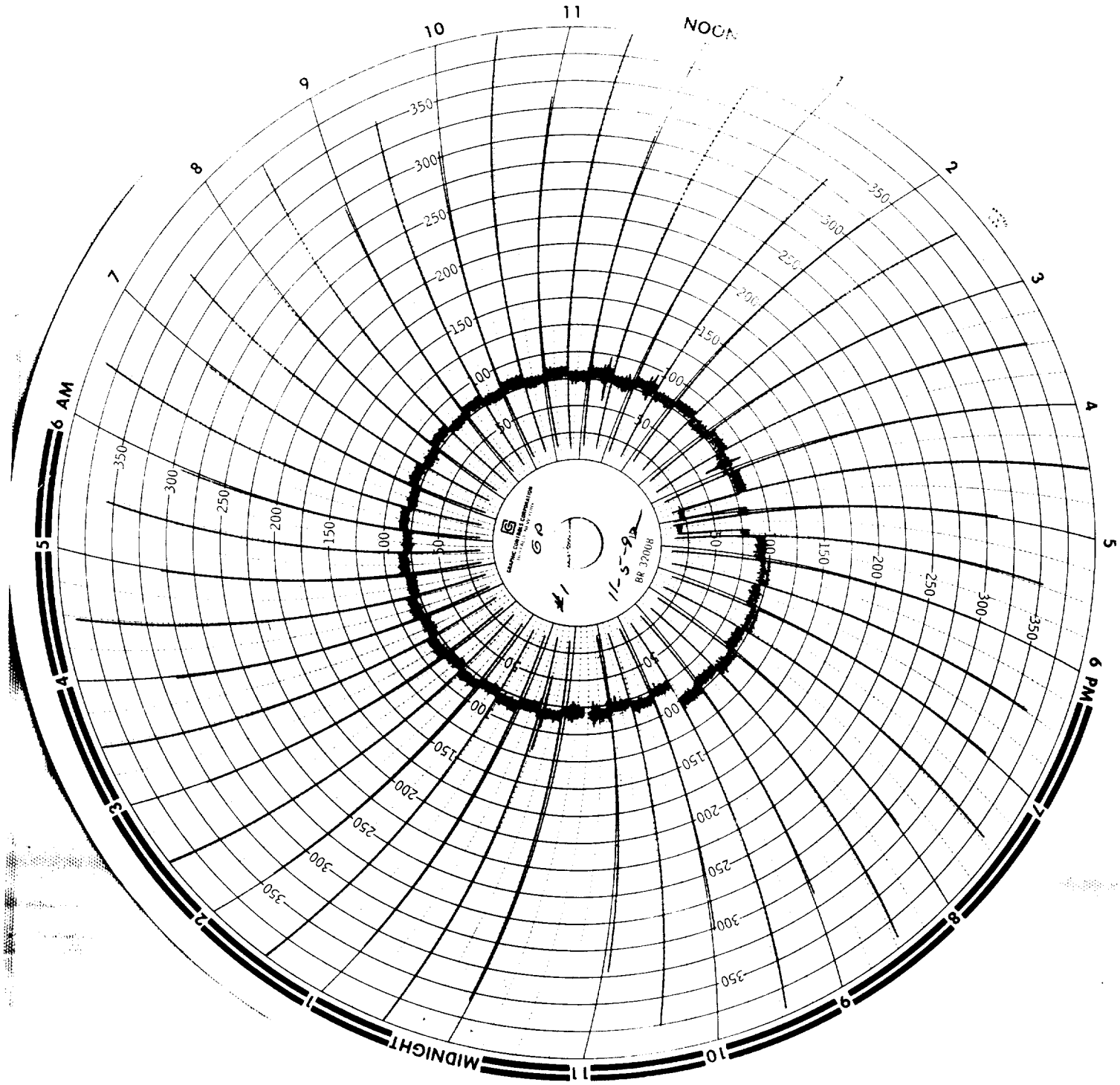
GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
11-5-92
BR 94

MIDNIGHT
6 AM
NOON
6 PM
GRAPHIC CONTROLS CORPORATION
BR 55005
539997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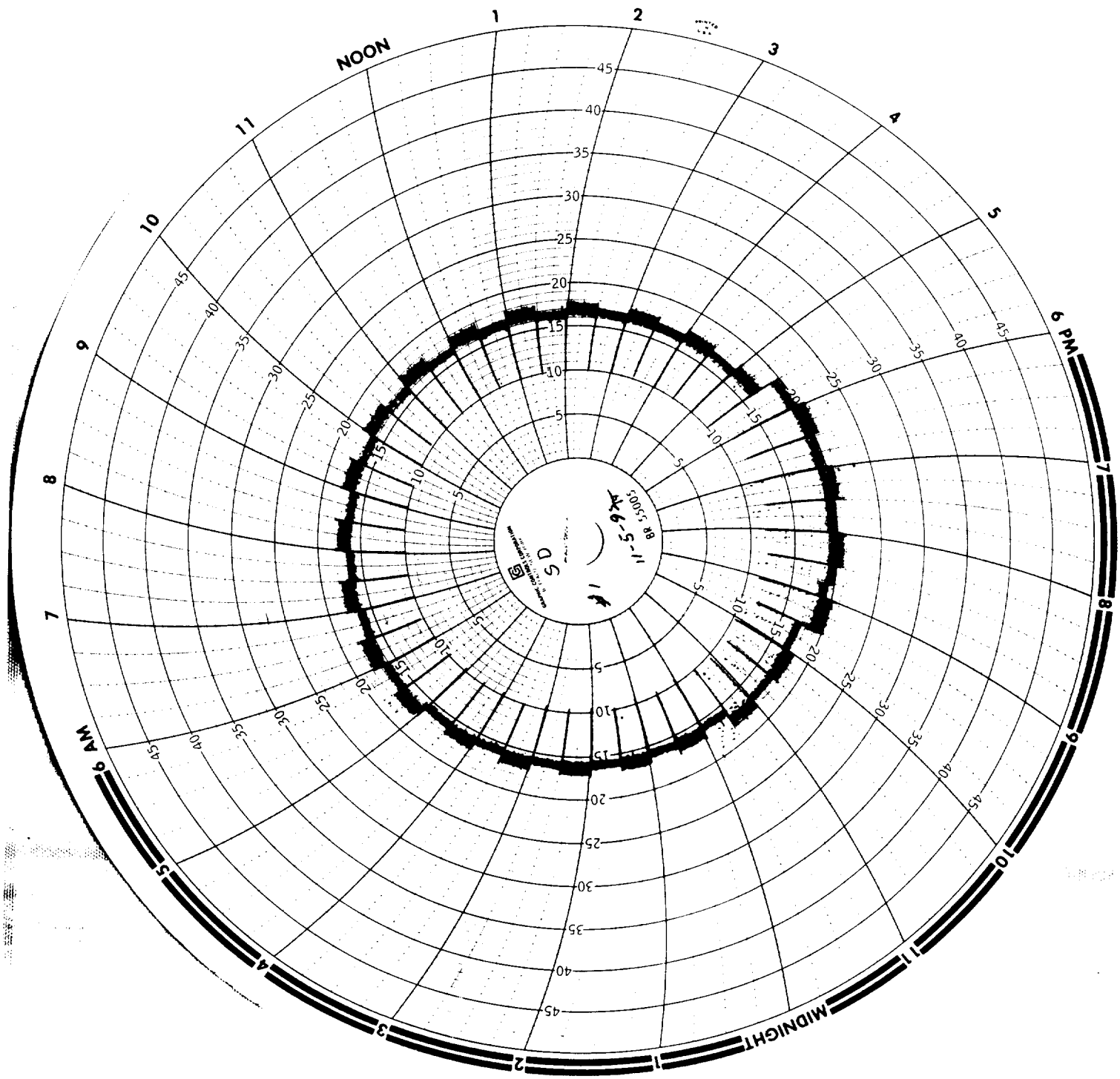
11-5-91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SD
#1
11-5-94
BR 55005

MIDNIGHT
NOON
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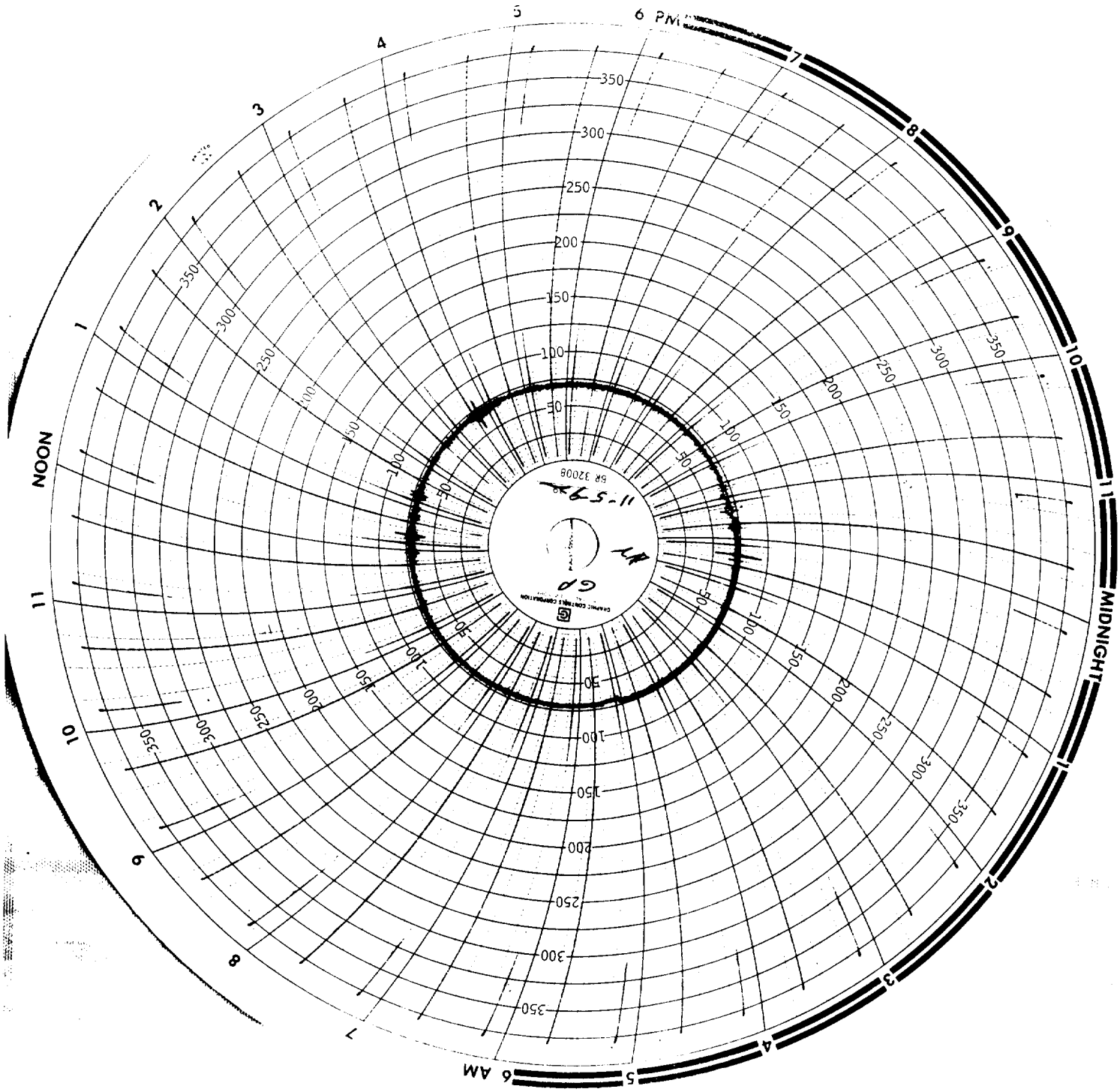
BR 55005



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MIDNIGHT
6 AM
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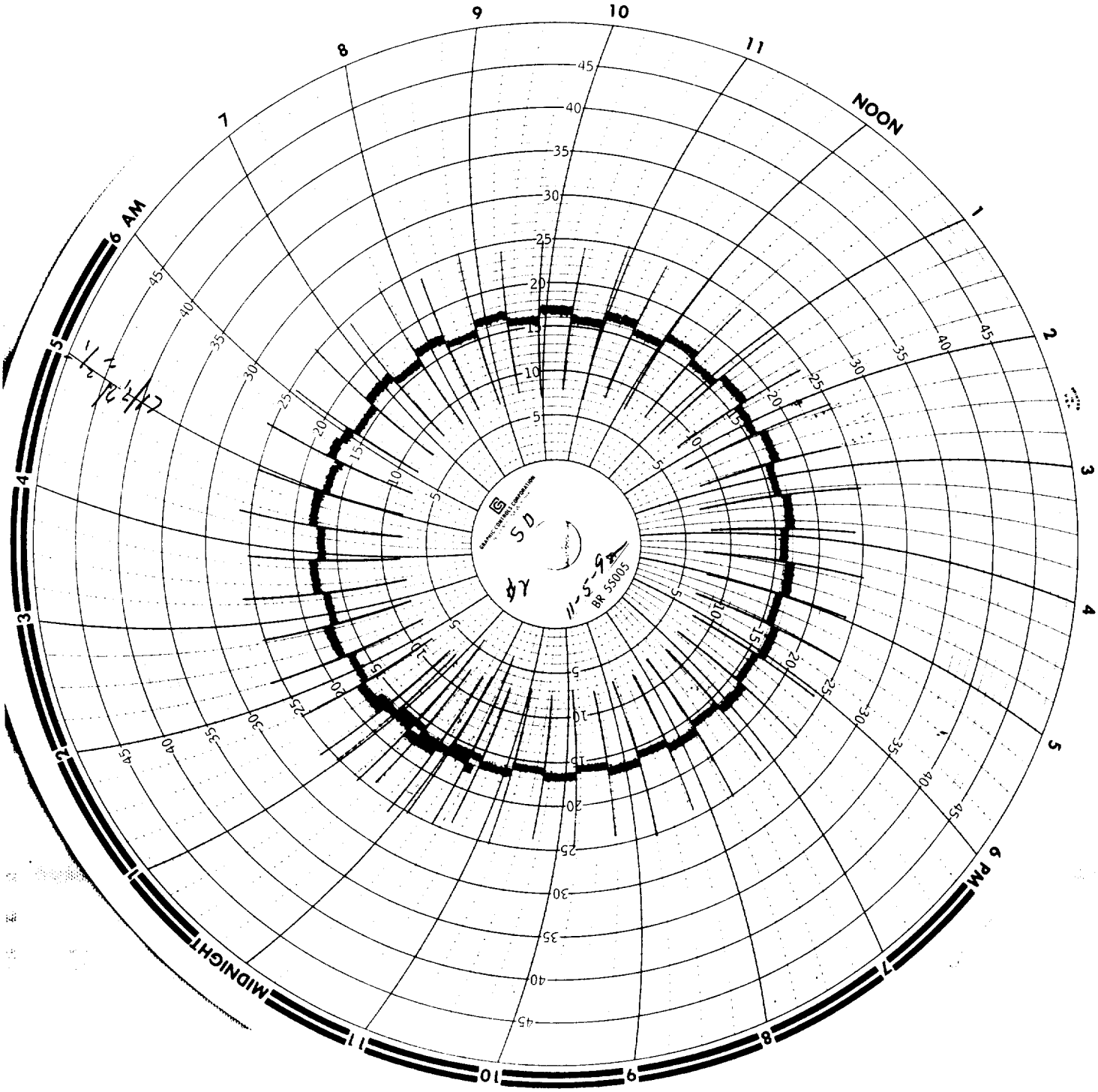
GP
11-5-92
BR 32008
GRAPHIC CONTROLS CORPORATION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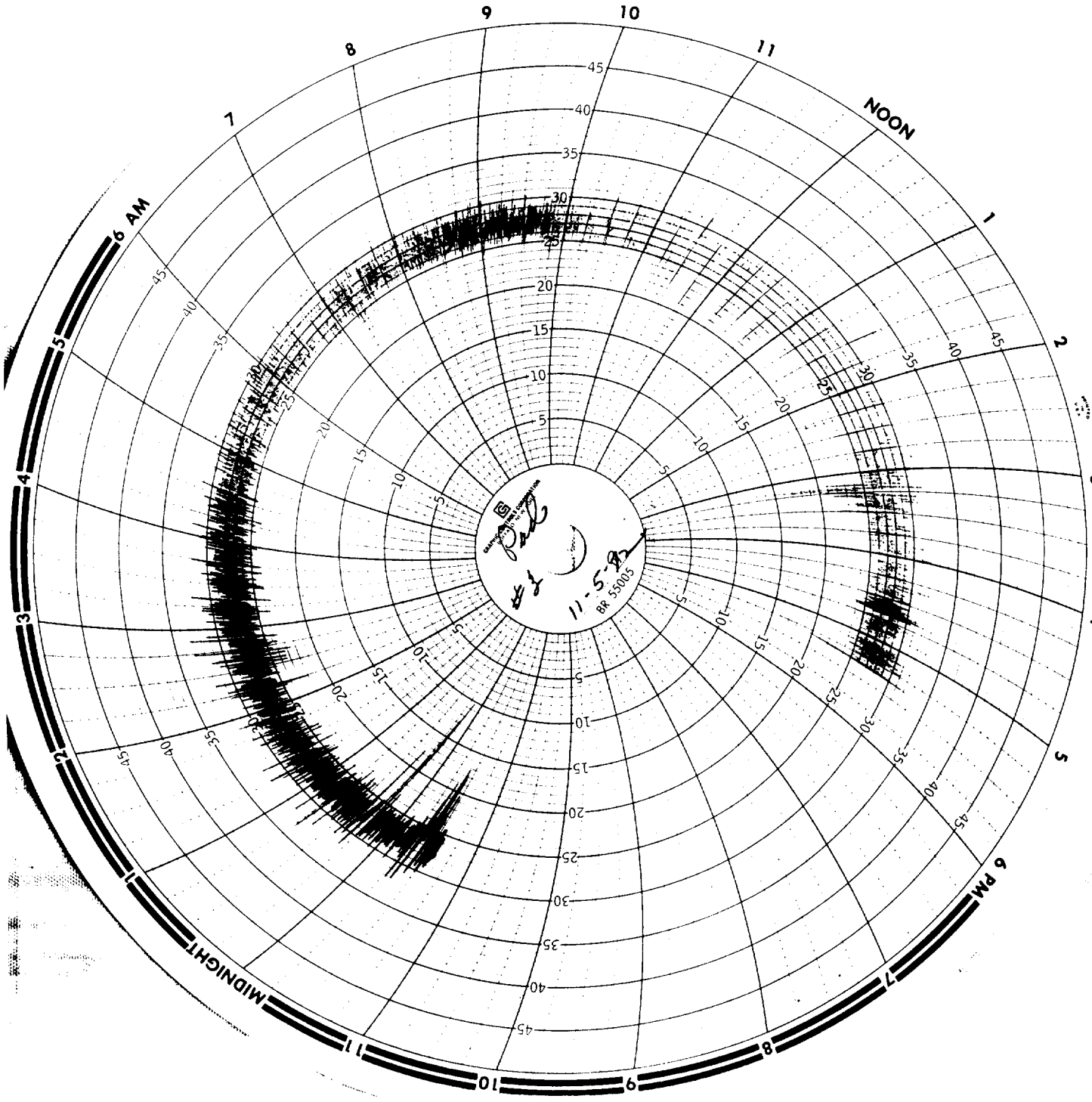
BR 55005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6 AM
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11-5-81
BR 55005

6 AM
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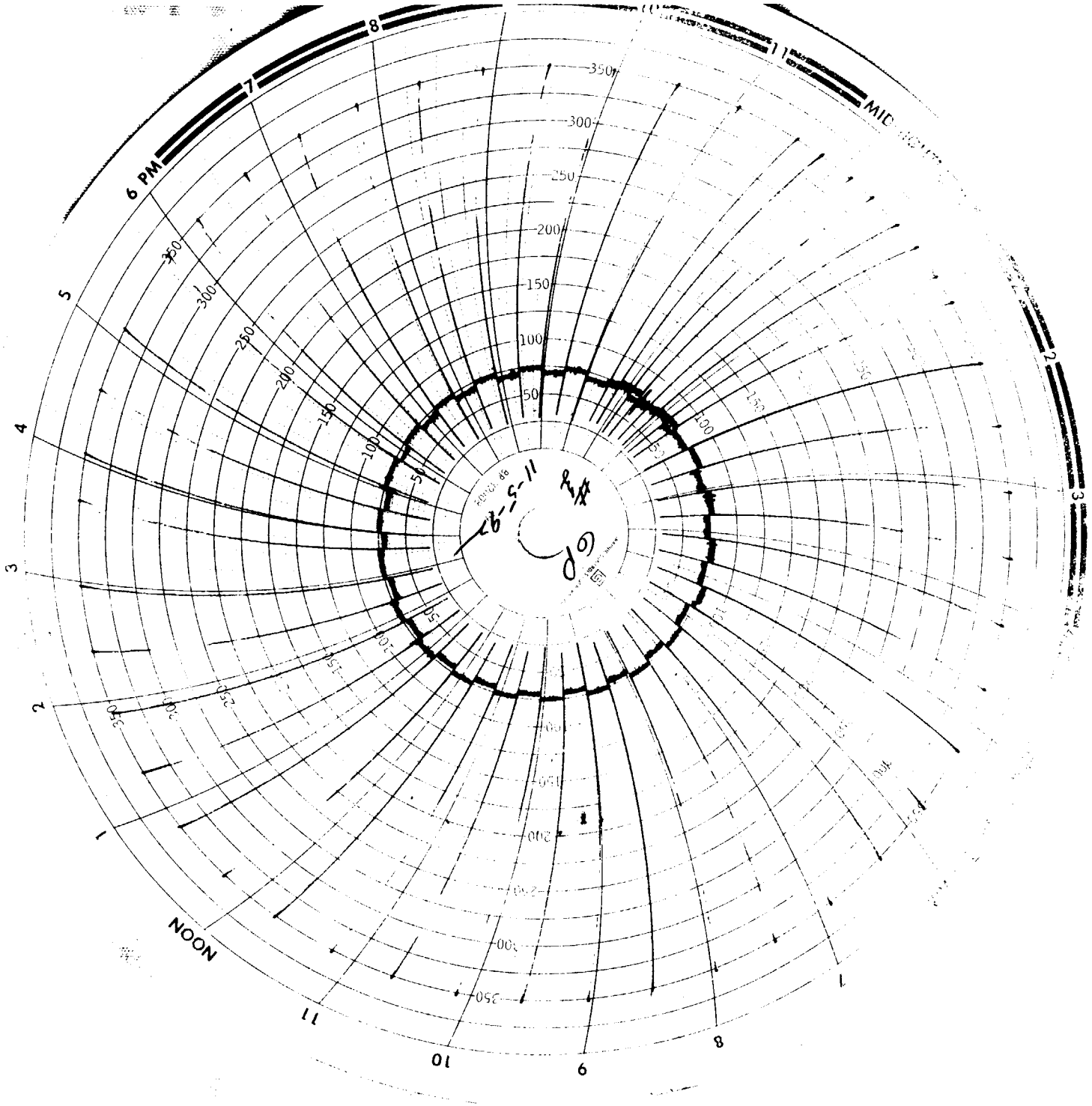
6 PM
MIDNIGHT
GRAPHIC CONTROLS CORPORATION
BR 55005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11-5-97

6 PM
MIDNIGHT
6 AM
NOON
BR 55005
11-5-82
SB

COMPLIANCE DEMONSTRATION
1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX C

CALIBRATION RESULTS

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 1 BP 28.80
DATE 10-16-92 OPERATOR TM

	WET TEST METER				DRY TEST METER					METER	ORIFICE
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	COEFFICIENT Y	COEFFICIENT ΔH@
START			0.000	28.80				0.50	411.710		
HALF		80.0			88.0	105.0	96.5				
STOP	12.42		5.000						416.712		
CALCULATION	12.42	540.0	5.013	28.80			556.5	28.84	5.002	1.0314	1.770
START			0.000	28.80				1.00	418.880		
HALF		80.0			89.0	108.0	98.5				
STOP	8.82		5.000						423.915		
CALCULATION	8.82	540.0	5.013	28.80			558.5	28.87	5.035	1.0270	1.779
START			0.000	28.80				2.00	425.730		
HALF		80.0			89.0	111.0	100.0				
STOP	6.20		5.000						430.750		
CALCULATION	6.20	540.0	5.013	28.80			560.0	28.95	5.020	1.0302	1.754
AVERAGE										1.0295	1.768

CHESTER ENVIRONMENTAL

POST TEST

BOX # 1 BP 28.87
DATE 01-21-93 OPERATOR KS

	WET TEST METER				DRY TEST METER					METER	ORIFICE
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	COEFFICIENT Y	COEFFICIENT ΔH@
START			0.000	28.87				1.00	478.129		
HALF		71.0			76.0	80.0	78.0				
STOP	8.87		5.000						483.225		
CALCULATION	8.87	531.0	5.013	28.87			538.0	28.94	5.096	0.9940	1.802
START			0.000	28.87				1.00	483.300		
HALF		71.0			77.0	87.0	82.0				
STOP	9.22		5.200						488.658		
CALCULATION	9.22	531.0	5.213	28.87			542.0	28.94	5.358	0.9906	1.787
START			0.000	28.87				1.00	488.558		
HALF		71.0			79.0	85.0	82.0				
STOP	10.75		6.000						494.850		
CALCULATION	10.75	531.0	6.015	28.87			542.0	28.94	6.292	0.9733	1.825
AVERAGE										0.9860	1.804
DIFFERENCE										4.42%	-2.03%

CHESTER ENVIRONMENTAL

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 1
DATE 10-16-92
OPERATOR TM

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.05
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 DELTA 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 10-16-92
OPERATOR TM

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	410.100	410.310	0.210	10.000	0.007
WET	0.000	0.275	0.275		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

mV input	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 10-16-92
OPERATOR TM

mV input	TEMP °F	TEMP READING °F
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	89.0
1.74	110	109.0
2.66	150	149.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	499.0

CHESTER ENVIRONMENTAL

POST-TEST MAGNEHELIC CALIBRATION

BOX# 1
DATE 01-21-93
OPERATOR KS

0 to 10" H2O RANGE

MAGNEHELIC DELTA 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 DELTA P	MANOMETER
0.49	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC DELTA H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.49	0.50

POST-TEST LEAK CHECK

DATE 01-21-93
OPERATOR KS

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	494.925	495.101	0.176	10.000	-0.001
WET	0.000	0.170	0.170		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

mV input	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 01-21-93
OPERATOR KS

mV input	TEMP °F	TEMP READING °F
0.18	40	41.0
0.40	50	50.0
0.84	70	71.0
1.29	90	90.0
1.74	110	110.0
2.66	150	151.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

CHESTER ENVIRONMENTAL

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	10-27-92	B.P.	28.80
OPERATOR	RPC	BOX #	1		

RUN	1		2		3	
INITIAL CF	637.400		644.700		652.100	
FINAL CF	644.540		651.841		659.280	
DIFFERENCE	7.140		7.141		7.180	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	73	70	73	70	74	71
TEMP 5 MIN	73	70	74	71	75	71
TEMP 10 MIN	72	70	74	71	75	72
TEMP 15 MIN	73	70	74	71	75	72
		TEMP R		TEMP R		TEMP R
TEMP AVG	71.375	531.375	72.25	532.25	73.125	533.125
TIME MINUTES	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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	18.0		18.0		18.0	
DGM CAL Y	1.0295		1.0295		1.0295	
STD CF	7.070		7.059		7.086	
STD CUBIC METERS	0.2002		0.1999		0.2007	

CHESTER ENVIRONMENTAL

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 3 BP 28.8 in. Hg
DATE 05-06-92 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	28.80				0.50	985.600		
HALF		70.0			101.0	84.0	92.5				
STOP	11.73		5.000						990.906		
CALCULATION	11.73	530.0	5.013	28.80			552.5	28.84	5.306	0.9835	1.532
START			0.000	28.80				1.00	991.350		
HALF		70.0			106.0	88.0	97.0				
STOP	8.60		5.000						996.656		
CALCULATION	8.60	530.0	5.013	28.80			557.0	28.87	5.306	0.9903	1.634
START			0.000	28.80				2.00	997.200		
HALF		70.0			112.0	90.0	101.0				
STOP	6.20		5.000						1002.475		
CALCULATION	6.20	530.0	5.013	28.80			561.0	28.95	5.275	1.0007	1.686
AVERAGE										0.9915	1.618

POST TEST

BOX # 3 BP 28.90 in. Hg
DATE 01-05-93 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				1.25	126.900		
HALF		70.0			101.0	89.0	95.0				
STOP	7.70		5.000						131.974		
CALCULATION	7.70	530.0	5.013	28.90			555.0	28.99	5.074	1.0312	1.638
START			0.000	28.90				1.25	132.300		
HALF		70.0			104.0	90.0	97.0				
STOP	7.70		5.000						137.421		
CALCULATION	7.70	530.0	5.013	28.90			557.0	28.99	5.121	1.0254	1.632
START			0.000	28.90				1.25	137.800		
HALF		70.0			105.0	90.0	97.5				
STOP	7.78		5.000						142.930		
CALCULATION	7.78	530.0	5.013	28.90			557.5	28.99	5.130	1.0245	1.664
AVERAGE										1.0270	1.645
DIFFERENCE										-3.5%	-1.6%

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 3
DATE 05-04-92
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 05-05-92
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	985.075	985.288	0.213	10.000	-0.010
WET	0.000	0.112	0.112		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK

DATE 05-04-92
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	69.0
1.29	90	89.0
1.74	110	109.0
2.66	150	150.0
3.82	200	201.0
6.09	300	301.0
8.31	400	401.0
10.57	500	501.0

POST-TEST MAGNEHELIC CALIBRATION

BOX# 3
DATE 01-05-93
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 01-05-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	125.610	125.856	0.246	10.000	-0.0004
WET	0.000	0.242	0.242		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK

DATE 01-07-93
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	39.0
0.40	50	49.0
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 05-05-92 B.P. 28.80
OPERATOR RPC BOX # 3

RUN	1		2		3	
INITIAL CF	4.800		12.480		20.050	
FINAL CF	12.287		19.912		27.566	
DIFFERENCE	7.487		7.432		7.516	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	80	77	83	79	87	82
TEMP 5 MIN	81	78	84	80	87	83
TEMP 10 MIN	82	78	85	81	89	83
TEMP 15 MIN	83	79	87	82	89	84
		TEMP R		TEMP R		TEMP R
TEMP AVG	79.75	539.75	82.625	542.625	85.5	545.5
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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	19.0		19.0		19.0	
DGM CAL Y	0.9915		0.9915		0.9915	
STD CF	7.028		6.939		6.981	
STD CUBIC METERS	0.1990		0.1965		0.1977	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 4 BP 28.9 in. Hg
DATE 06-03-92 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				0.50	525.800		
HALF		73.0			93.0	89.0	91.0				
STOP	12.17		5.000						531.165		
CALCULATION	12.17	533.0	5.013	28.90			551.0	28.94	5.365	0.9646	1.667
START			0.000	28.90				1.00	531.500		
HALF		73.0			94.0	90.0	92.0				
STOP	8.85		5.000						536.800		
CALCULATION	8.85	533.0	5.013	28.90			552.0	28.97	5.300	0.9770	1.760
START			0.000	28.90				2.00	537.600		
HALF		73.0			94.0	90.0	92.0				
STOP	6.40		5.000						542.899		
CALCULATION	6.40	533.0	5.013	28.90			552.0	29.05	5.299	0.9747	1.841
AVERAGE										0.9721	1.756

POST TEST

BOX # 4 BP 29.05 in. Hg
DATE 01-07-93 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT Δ H@
	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				1.00	494.100		
HALF		70.0			77.0	76.0	76.5				
STOP	8.63		5.000						499.250		
CALCULATION	8.63	530.0	5.013	29.05			536.5	29.12	5.150	0.9828	1.694
START			0.000	29.05				1.00	499.600		
HALF		70.0			80.0	79.0	79.5				
STOP	8.65		5.000						504.766		
CALCULATION	8.65	530.0	5.013	29.05			539.5	29.12	5.166	0.9852	1.692
START			0.000	29.05				1.00	505.100		
HALF		70.0			83.0	81.0	82.0				
STOP	8.61		5.000						510.247		
CALCULATION	8.61	530.0	5.013	29.05			542.0	29.12	5.147	0.9934	1.669
AVERAGE										0.9871	1.685
DIFFERENCE										-1.5%	4.2%

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 4
DATE 06-03-92
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 06-03-92
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	508.320	508.433	0.113	10.000	-0.000
WET	0.000	0.111	0.111		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK

DATE 06-03-92
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	69.0
1.29	90	90.0
1.74	110	109.0
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# 4
DATE 01-07-93
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 01-07-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	493.445	493.574	0.129	10.000	-0.0008
WET	0.000	0.121	0.121		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK

DATE 01-07-93
OPERATOR RPC

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	91.0
1.74	110	111.0
2.66	150	151.0
3.82	200	201.0
6.09	300	301.0
8.31	400	402.0
10.57	500	502.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	12-07-92	B.P.	28.85
OPERATOR	RPC	BOX #	4		

RUN	1		2		3	
INITIAL CF	483.900		496.500		504.600	
FINAL CF	491.400		504.010		512.121	
DIFFERENCE	7.500		7.510		7.521	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	71	69	78	75	82	80
TEMP 5 MIN	74	73	78	77	83	80
TEMP 10 MIN	75	74	80	78	85	81
TEMP 15 MIN	78	76	81	79	85	83
		TEMP R		TEMP R		TEMP R
TEMP AVG	73.75	533.75	78.25	538.25	82.375	542.375
TIME (MIN.)	15.00		15.00		15.00	
	N 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		28.90		28.90		28.90
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	19.0		19.0		19.0	
DGM CAL Y	0.9721		0.9721		0.9721	
STD CF	6.992		6.943		6.900	
STD CUBIC METERS	0.1980		0.1966		0.1954	

CONTROL BOX CALIBRATION

METERING SYSTEM THREE POINT CALIBRATION

CONTROL BOX NO. 7
CALIBRATION DATE 9-14-92
BAROMETRIC PRESSURE 29.10 in. Hg
OPERATOR TJM

	WET TEST METER				DRY TEST METER						
	ELAPSED TIME (min)	METER TEMP Tw (°F/°R)	VOLUME Vw (CF)	METER PRESSURE Pw (in. Hg)	TEMP IN Ti (°F)	TEMP OUT To (°F)	AVERAGE TEMP Ta (°F/°R)	ORIFICE PRESSURE DIFFERENTIAL ΔH (in. H2O/in. Hg)	VOLUME Vd (DCF)	METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
START			0.000	29.10					837.072		
MIDWAY		70			108	84	96	0.50			
STOP	11.55		5.000						841.999		
CALCULATION	11.55	530	5.013	29.10			556	29.14	4.927	1.0659	1.461
START			0.000	29.10					842.750		
MIDWAY		82			108	85	97	1.00			
STOP	8.23		5.000						847.678		
CALCULATION	8.23	542	5.013	29.10			557	29.17	4.928	1.0417	1.550
START			0.000	29.10					851.820		
MIDWAY		82			115	85	100	2.00			
STOP	5.92		5.000						856.742		
CALCULATION	5.92	542	5.013	29.10			560	29.25	4.922	1.0469	1.594
AVERAGE										1.0515	1.535

METERING SYSTEM POST-TEST CALIBRATION

CONTROL BOX NO. 7 BAROMETRIC PRESSURE 28.95 in. Hg
CALIBRATION DATE 01-08-93 OPERATOR RPC

	WET TEST METER				DRY TEST METER						
	ELAPSED TIME (min)	METER TEMP Tw (°F/°R)	VOLUME Vw (CF)	METER PRESSURE Pw (in. Hg)	TEMP IN Ti (°F)	TEMP OUT To (°F)	AVERAGE TEMP Ta (°F/°R)	ORIFICE PRESSURE DIFFERENTIAL ΔH (in. H2O/in. Hg)	VOLUME Vd (DCF)	METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
START			0.000	28.95					430.300		
MIDWAY		70			103	79	91	1.00			
STOP	8.75		5.000						435.480		
CALCULATION	8.75	530	5.013	28.95			551	29.02	5.180	1.0035	1.701
START			0.000	28.95					435.700		
MIDWAY		82			108	81	95	1.00			
STOP	8.78		5.000						440.909		
CALCULATION	8.78	542	5.013	28.95			555	29.02	5.209	0.9820	1.780
START			0.000	28.95					441.300		
MIDWAY		82			110	84	97	1.00			
STOP	8.75		5.000						446.491		
CALCULATION	8.75	542	5.013	28.95			557	29.02	5.191	0.9898	1.760
AVERAGE										0.9918	1.747
DIFFERENCE										6.03%	-12.12%

PRE-TEST MAGNEHELIC CALIBRATION

CONTROL BOX 7
DATE 9-14-92
OPERATOR TJM

0 to 2.0" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.75	0.75
1.00	1.00
1.50	1.50
2.00	2.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.48
0.40	0.40
0.30	0.28
0.20	0.19
0.10	0.10

0 to 3.0" H2O RANGE

MAGNEHELIC Δ H (in. H2O)	MANOMETER (in. H2O)
3.00	2.90
2.00	1.90
1.00	0.97
0.50	0.49

PRE-TEST METERING SYSTEM LEAK CHECK

DATE 9-14-92
OPERATOR TJM

METER	INITIAL VOLUME (CF)	FINAL VOLUME (CF)	VOLUME DIFF. (CF)	ELAPSED TIME (min)	LEAK RATE (CFM)
DRY	831.640	831.809	0.169	10.00	0.0031
WET	0.000	0.200	0.200		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	70
1.29	90	90
1.74	110	110
2.66	150	150
3.82	200	200
6.09	300	301
8.31	400	400
10.57	500	500

PRE-TEST PYROMETER CALIBRATION

DATE 9-14-92
OPERATOR MG

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	69
1.29	90	89
1.74	110	109
2.66	150	149
3.82	200	200
6.09	300	300
8.31	400	398
10.57	500	498

POST-TEST MAGNEHELIC CALIBRATION

CONTROL BOX 7
DATE 01-08-93
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.75	0.75
1.00	1.00
1.50	1.50
2.00	2.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 3.0" H2O RANGE

MAGNEHELIC Δ H (in. H2O)	MANOMETER (in. H2O)
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST METERING SYSTEM LEAK CHECK

DATE 01-8-93
OPERATOR RPC

METER	INITIAL VOLUME (CF)	FINAL VOLUME (CF)	VOLUME DIFF. (CF)	ELAPSED TIME (min)	LEAK RATE (CFM)
DRY	429.340	429.639	0.299	10.00	-0.0135
WET	0.000	0.164	0.164		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	70
1.29	90	90
1.74	110	110
2.66	150	150
3.82	200	200
6.09	300	301
8.31	400	400
10.57	500	500

POST-TEST PYROMETER CALIBRATION

DATE 01-08-93
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	39
0.40	50	50
0.84	70	70
1.29	90	89
1.74	110	109
2.66	150	149
3.82	200	199
6.09	300	299
8.31	400	398
10.57	500	499

QA ORIFICE AUDIT

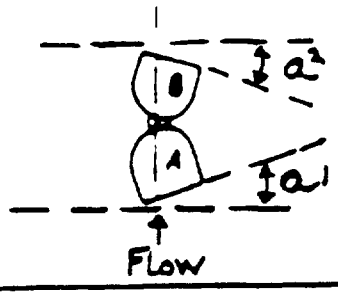
ORIFICE	BAPC-3	DATE	10-27-92	B.P.	28.80
OPERATOR	RPC	BOX #	7		

RUN	1		2		3	
INITIAL CF	791.800		799.400		807.100	
FINAL CF	799.222		806.850		814.566	
DIFFERENCE	7.422		7.450		7.466	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	78	73	81	75	85	78
TEMP 5 MIN	79	74	83	76	86	78
TEMP 10 MIN	80	75	84	76	87	78
TEMP 15 MIN	80	75	85	78	88	79
		TEMP R		TEMP R		TEMP R
TEMP AVG	76.75	536.75	79.75	539.75	82.375	542.375
TIME MINUTES	15.00		15.00		15.00	
	IN WATER	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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	18.0		18.0		18.0	
DGM CAL Y	1.0515		1.0515		1.0515	
STD CF	7.430		7.417		7.396	
STD CUBIC METERS	0.2104		0.2100		0.2095	

GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck √
Post Check

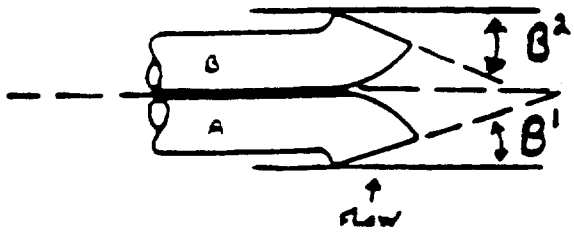
Probe #: S-1
Date: 11-2-98
Initials: [illegible]

① 

a¹ = 3.0°
a² = 4.0°
a¹, a² = <10°

B¹ = 2.5°
B² = 3.0°
B¹, B², = <5°

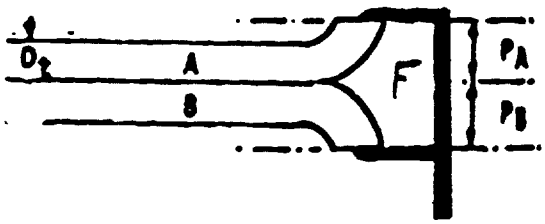
F = 1.025"

② 

μ = 0.0241 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0241 — V = ≤0.03125" (V = F TAN θ)

W = 0.528 — W ≥ 0"

③ 

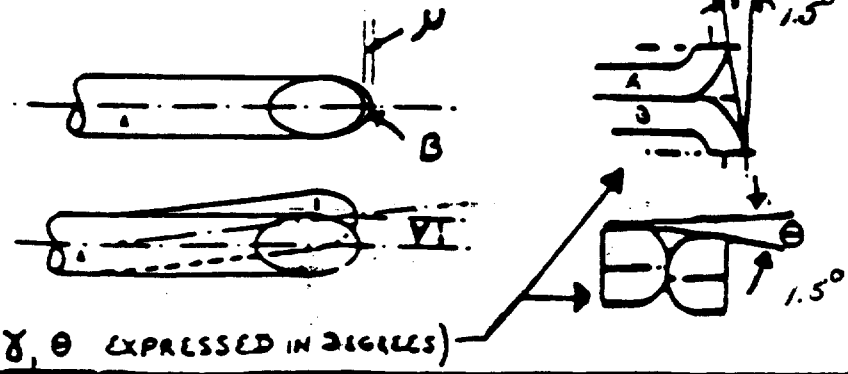
1.05 D_t < F < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

X = 0.786 — X ≥ 0.750" (3/4" using 1/2" nozzle)

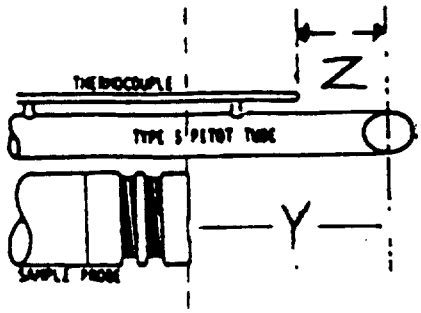
Y = 5.946 — Y ≥ 3.0"

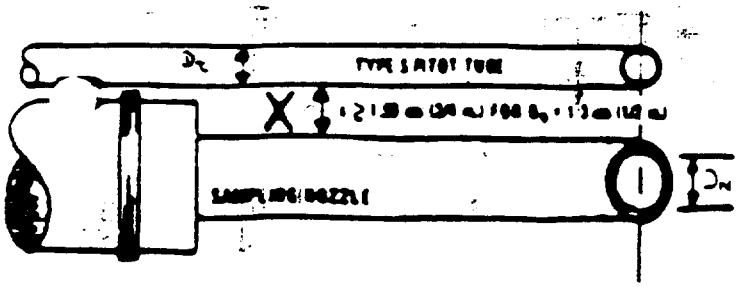
Z = 3.372 — Z > 2.0"

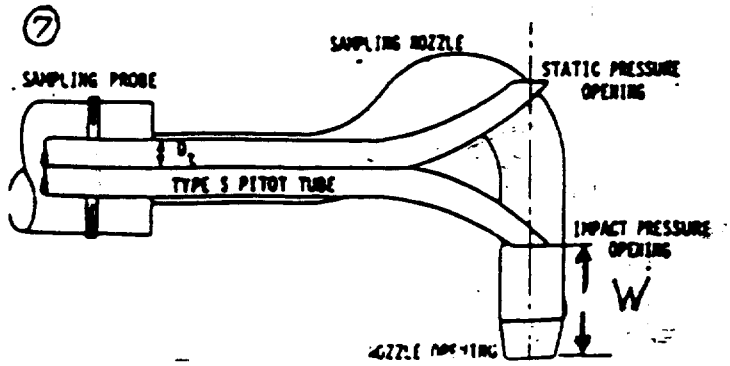
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

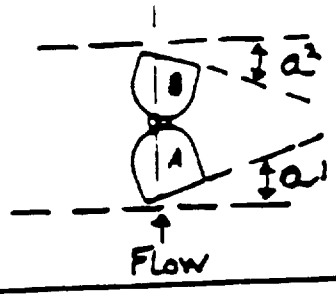
⑤ 

⑦ 

GEOMETRIC PITOT CALIBRATION

Caliper # XFS-68
Precheck
Post Check X

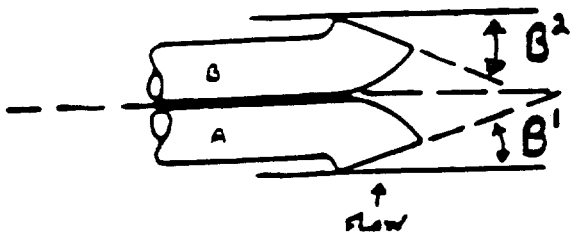
Probe #: 5-1
Date: 12-11-98
Initials: TAM

① 

a^1 = 2.0
a^2 = 4.0
a^1, a^2 = <10°

B^1 = 3.0
B^2 = 3.0
B^1, B^2, = <5°

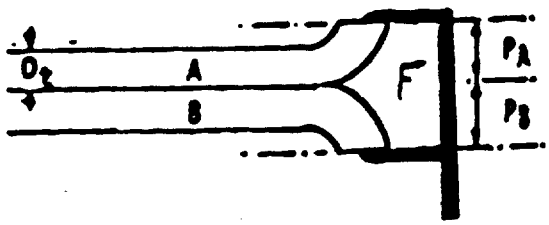
F = 1026"

② 

μ = 0.0179 — μ = ≤ 0.1250" ($\mu = F \tan\gamma$)

V = 0.0179 — V = ≤0.03125" ($V = F \tan\theta$)

W = 0.361 — W ≥ 0"

③ 

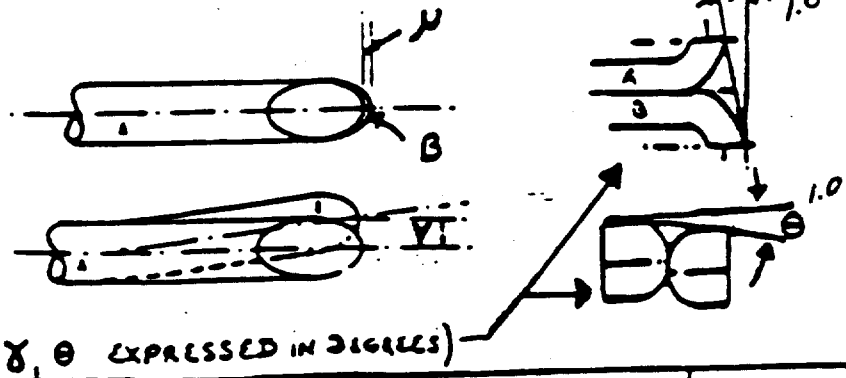
1.05 D_t < B < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

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

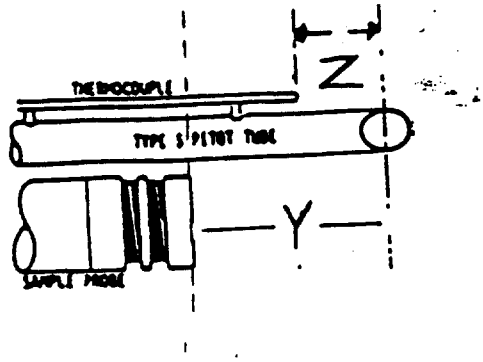
Y = 6.184 — Y ≥ 3.0"

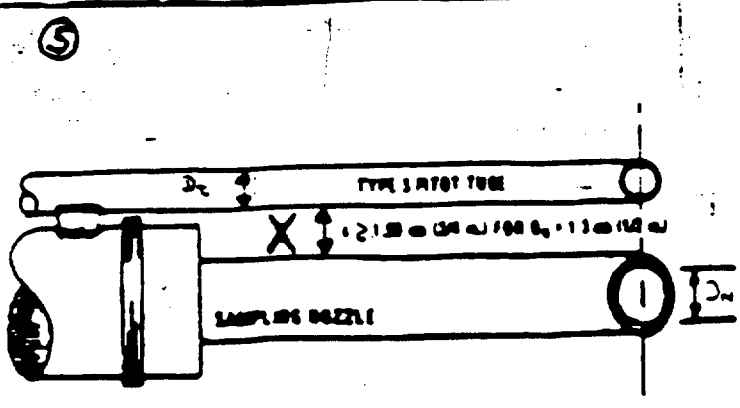
Z = 3.168 — Z > 2.0"

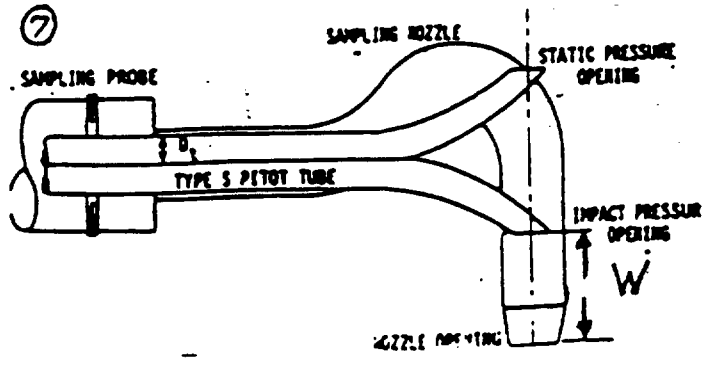
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

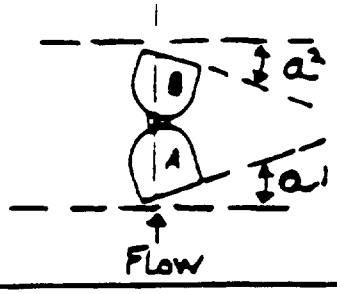
⑤ 

⑦ 

GEOMETRIC PITOT CALIBRATION

Caliper # XCF-59
Precheck ✓
Post Check ✓

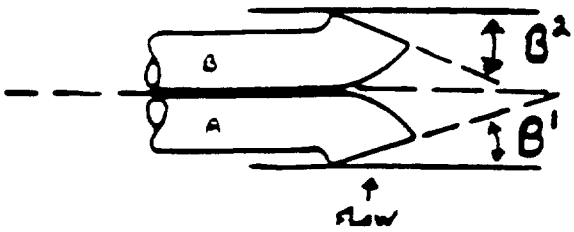
Probe #: S-3
Date: 7-27-92
Initials: [illegible]

① 

a^1 = 1.0°
a^2 = 1.5°
a^1, a^2 = <10°

B^1 = 0°
B^2 = 1.5°
B^1, B^2, = <5°

F = 0.869"

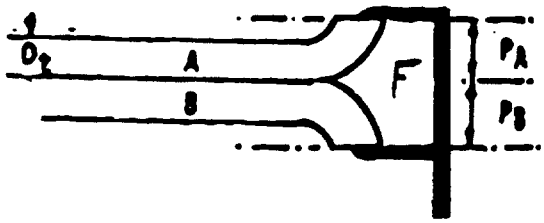
② 

μ = 0 — μ = ≤ 0.1250" ($\mu = F \tan\gamma$)

V = 0 — V = ≤0.03125" ($V = F \tan\theta$)

W = 0.495 — W ≥ 0"

X = 0.775 — X ≥ 0.750" (3/4" using 1/2" nozzle)

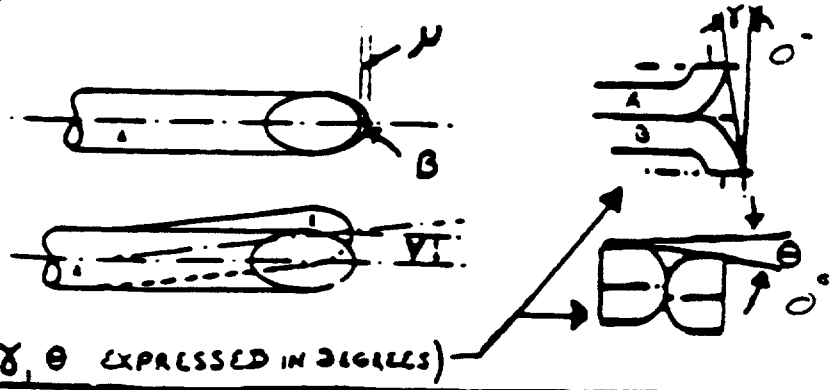
③ 

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

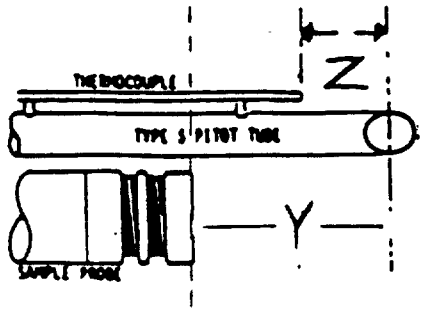
Y = 5.678 — Y ≥ 3.0"

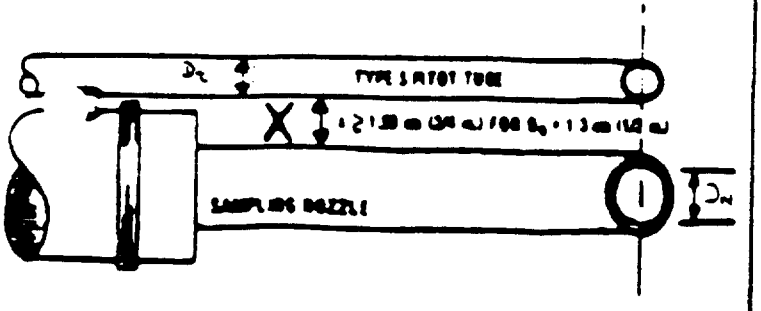
Z = 2.120 — Z > 2.0"

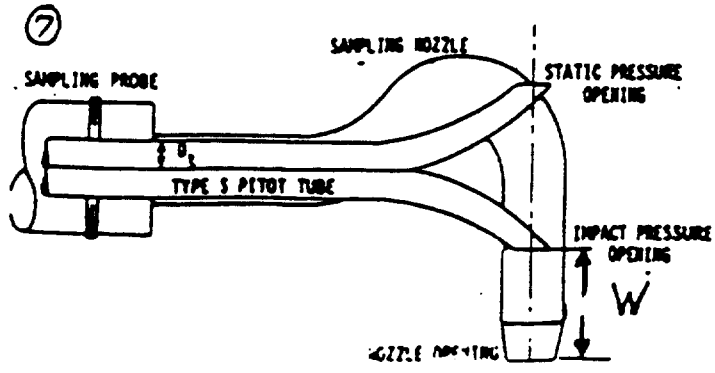
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

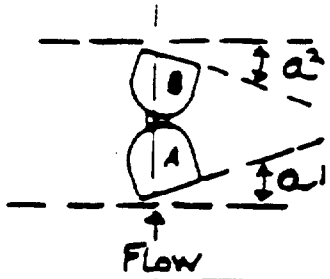
⑤ 

⑦ 

GEOMETRIC PITOT CALIBRATION

Caliper # XFJ-65
Precheck
Post Check

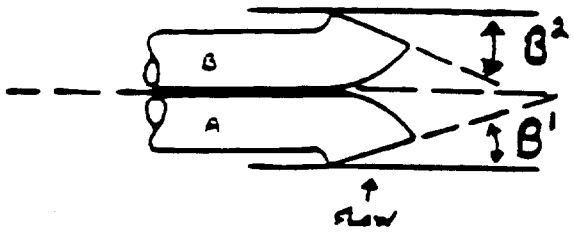
Probe #: 5-3
Date: 12-11-92
Initials: KM

① 

a¹ = 0
a² = 3.0
a¹, a² = <10°

B¹ = 1.0
B² = 1.0
B¹, B², = <5°

F = 0.875"

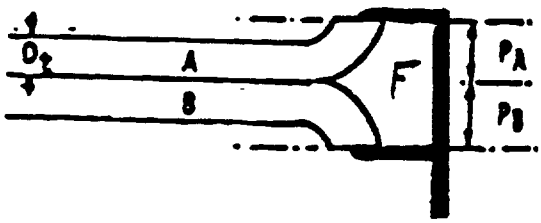
② 

μ = 0.0152 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0305 — V = ≤0.03125" (V = F TAN θ)

W = 0.405 — W ≥ 0"

X = 0.879 — X ≥ 0.750" (3/4" using 1/2" nozzle)

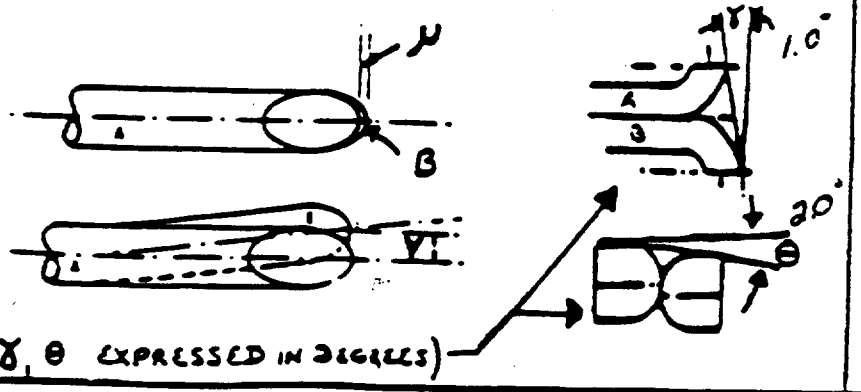
③ 

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

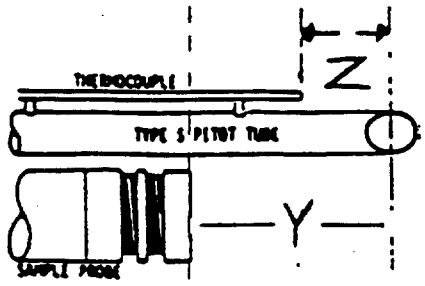
Y = 5.656 — Y ≥ 3.0"

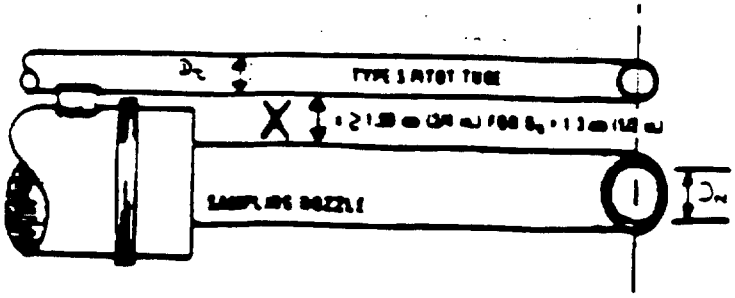
Z = 2.051 — Z > 2.0"

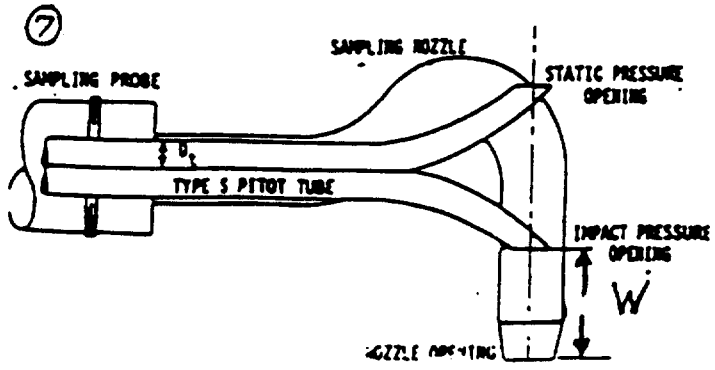
D_t = 0.376 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

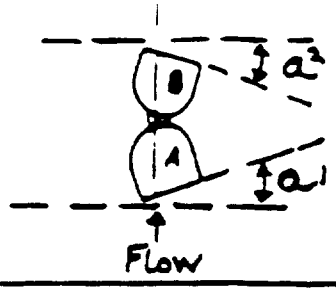
⑤ 

⑦ 

GEOMETRIC PITOT CALIBRATION

Caliper # XCF-59
Precheck ✓
Post Check X

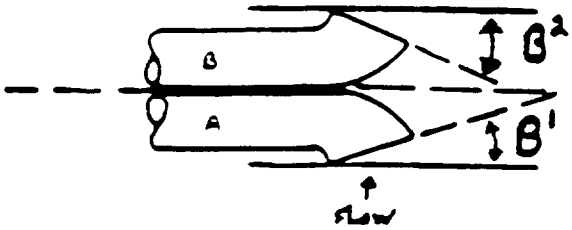
Probe #: S-4
Date: 7-27-92
Initials: TMM

① 

a^1 = 1.0°
a^2 = 2.5°
a^1, a^2 = <10°

B^1 = 1.5°
B^2 = 0.5°
B^1, B^2, = <5°

F = 0.854"

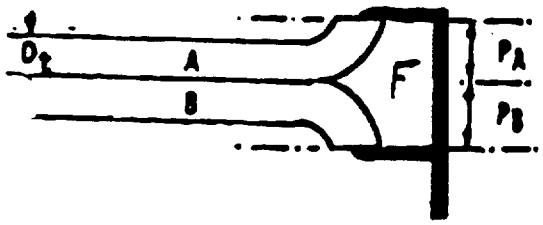
② 

μ = 0.0149 — μ = ≤ 0.1250" ($\mu = F \tan \gamma$)

V = 0.0074 — V = ≤0.03125" ($V = F \tan \theta$)

W = 0.741 — W ≥ 0"

X = 0.762 — X ≥ 0.750" (3/4" using 1/2" nozzle)

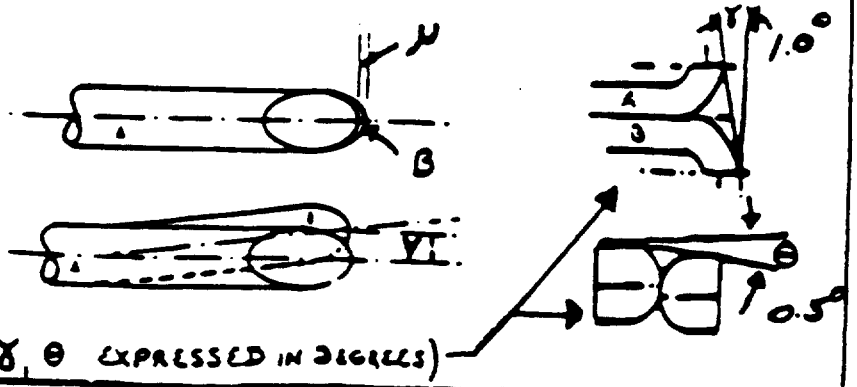
③ 

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

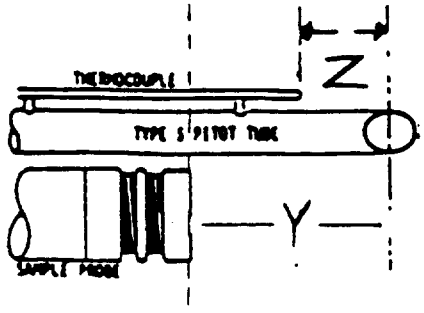
Y = 5.826 — Y ≥ 3.0"

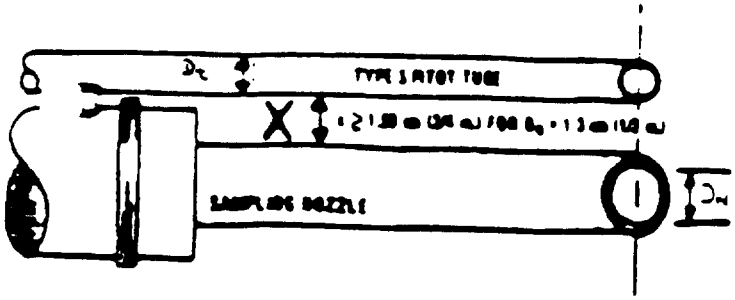
Z = 2.831 — Z > 2.0"

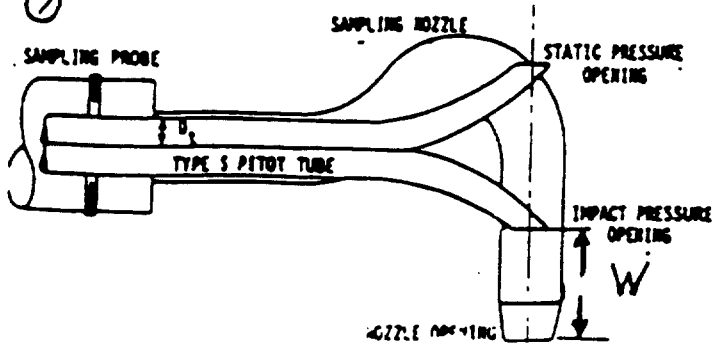
D_t = 0.376 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

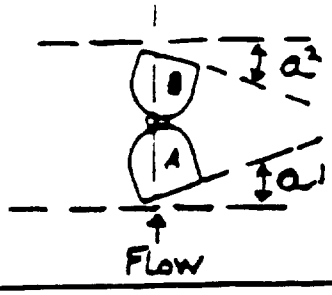
⑤ 

⑦ 

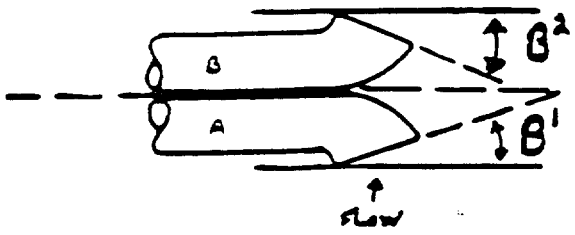
GEOMETRIC PITOT CALIBRATION

Caliper # XP5-68
Precheck
Post Check UK

Probe #: 5.4
Date: 12.11.97
Initials: EM

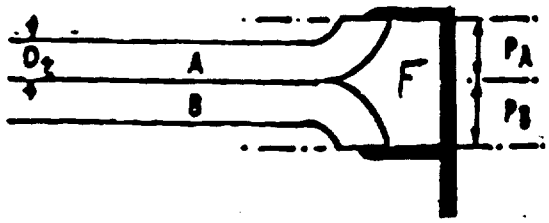
① 

a^1 = 1.0
a^2 = 3.0
a^1, a^2 = <10°

② 

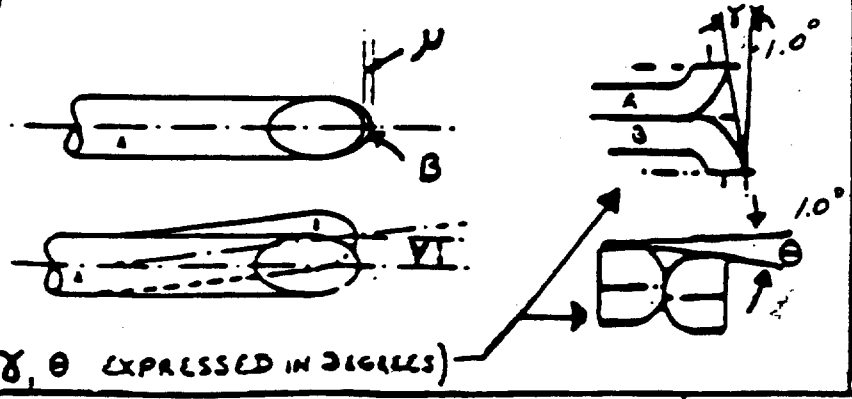
B^1 = 2.0
B^2 = 1.0
B^1, B^2, = <5°

F = 0.869"

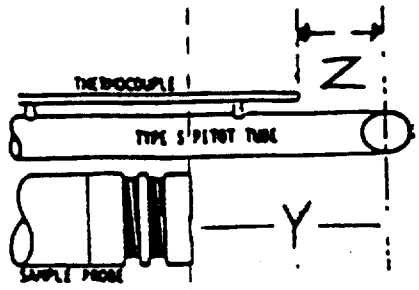
③ 

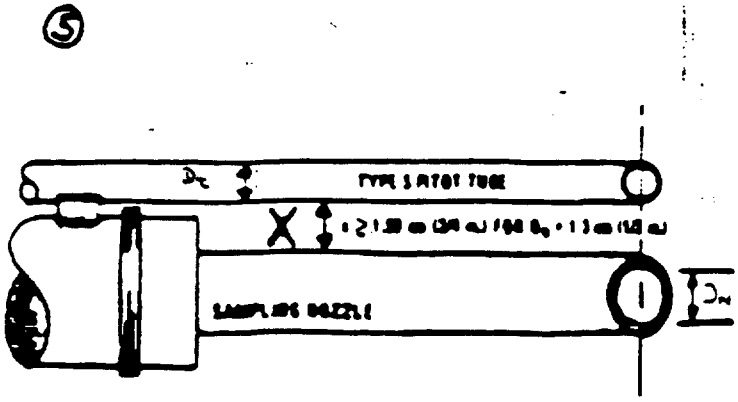
1.05 D_t < F <1.50 D_t
P_A = P_B
2.10 D_t <L <3.00 D_t

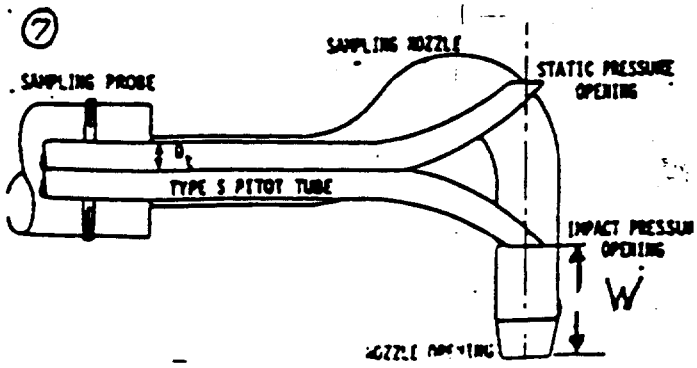
μ = 0.0131 — μ = ≤ 0.1250" (μ = F TAN γ
V = 0.0151 — V = ≤0.03125" (V = F TAN θ
W = 0.464 — W ≥ 0"
X = 0.791 — X ≥ 0.750" (3/4" using 1/2" nozzle)
Y = 5.671 — Y ≥ 3.0"
Z = 2.104 — Z > 2.0"
D_t = 0.371 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

(γ, θ EXPRESSED IN DEGREES)

⑥ 

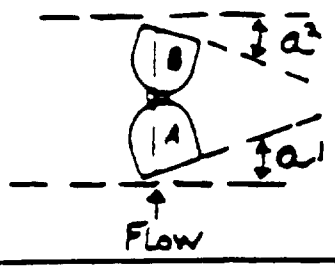
⑤ 

⑦ 

GEOMETRIC PITOT CALIBRATION

Caliper # XLF-59
Precheck
Post Check VX

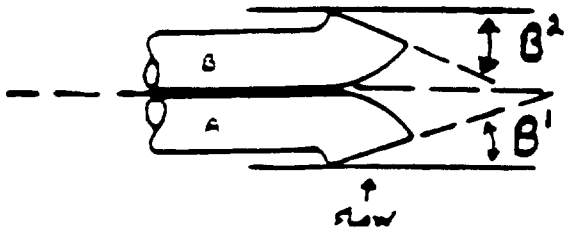
Probe #: S-5
Date: 8-24-98
Initials: TGM

① 

a^1 = 1.0°
a^2 = 1.0°
a^1, a^2 = <10°

B^1 = 1.5°
B^2 = 0
B^1, B^2, = <5°

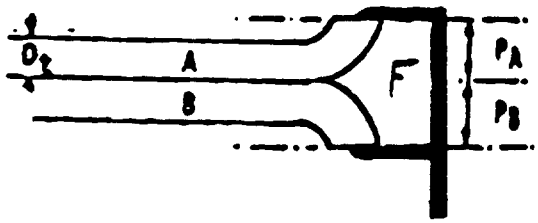
F = 0.894"

② 

μ = 0.0234 — μ = ≤ 0.1250" ($\mu = F \tan\gamma$)

V = 0.0156 — V = ≤0.03125" ($V = F \tan\theta$)

W = 0.210 — W ≥ 0"

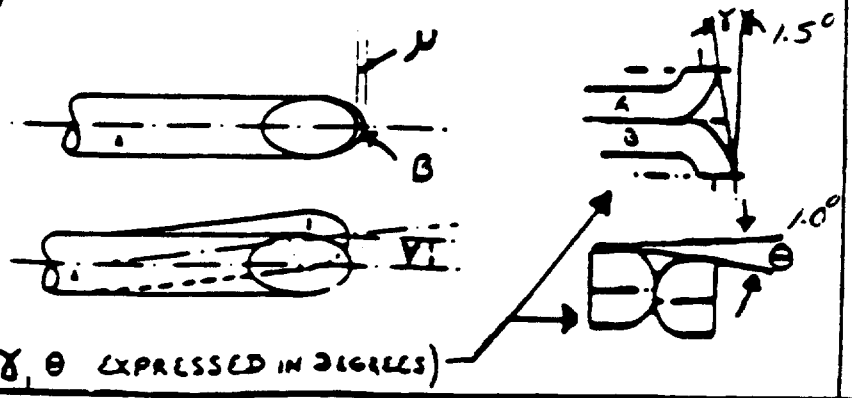
③ 

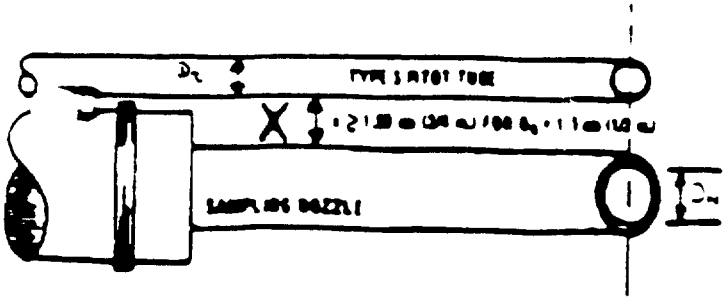
X = 0.782 — X ≥ 0.750" (3/4" using 1/2" nozzle)

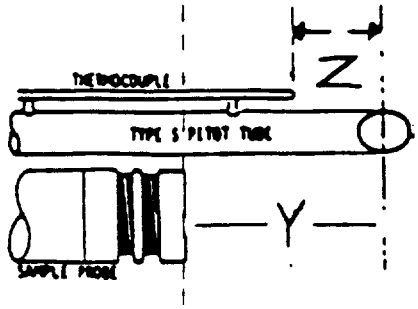
Y = 5.715 — Y ≥ 3.0"

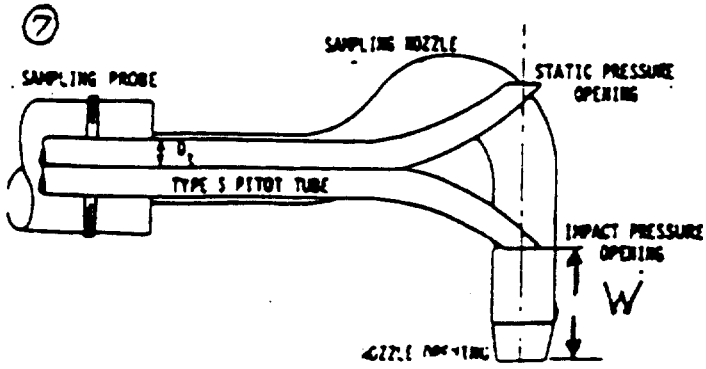
Z = 2.144 — Z > 2.0"

D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④ 

⑤ 

⑥ 

⑦ 

COMPLIANCE DEMONSTRATION
1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX D

ANALYTICAL RESULTS, EMISSIONS CALCULATIONS

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

ANALYTICAL REPORTING FORM

CLIENT: USX - Clairton Steel
PLANT LOCATION: 1, 2 + 3 PEC
PROJECT NUMBER: 300196-01
UNIT TESTED: PEC 1, 2 + 3

TEST DATE: 11/3, 11/4 AND 11/5/92
DATE RECEIVED: 11/3, 11/4 AND 11/5/92
DATE ANALYZED: 11/6/92
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-1-1-1	QTZ.137	Particulate		0.0012	0.0018	0.0020	0.0046	0.0032	0.0001
CLR-1-2-1	QTZ.134	Particulate		0.0007	0.0014	0.0020	0.0118	0.0033	0.0002
CLR-1-3-1	QTZ.136	Particulate		0.0009	0.0033	0.0040	0.0071	0.0037	0.0001
CLR-1-4-1	QTZ.135	Particulate		0.0020	0.0027	0.0013	0.0112	0.0024	0.0002
CLR-1-1-2	QTZ.138	Particulate		0.0011	0.0021	0.0049	0.0068	0.0030	0.0001
CLR-1-2-2	QTZ.139	Particulate		0.0013	0.0013	0.0025	0.0077	0.0019	0.0003
CLR-1-3-2	QTZ.140	Particulate		0.0012	0.0014	0.0039	0.0077	0.0084	0.0013
CLR-1-4-2	QTZ.141	Particulate		0.0012	0.0017	0.0035	0.0035	0.0017	0.0002
CLR-1-1-3	QTZ.143	Particulate		0.0007	0.0009	0.0015	0.0034	0.0010	0.0001
CLR-1-2-3	QTZ.144	Particulate		0.0015	0.0002	0.0004	0.0042	0.0008	0.0001
CLR-1-3-3	QTZ.145	Particulate		0.0013	0.0007	0.0011	0.0091	0.0016	0.0010
CLR-1-4-3	QTZ.142	Particulate		0.0012	0.0003	0.0019	0.0050	0.0003	0.0003
CLR-PEC1,2+3-Blank		Particulate			0.0000	0.0001			

Analyst's Signature: Patricia J. Stockton
Date: 11/11/92

Comments:

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-1

DATE: 11-3-92
CHARGE #: ...150-300196
TEST #: CLR-1-1-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00230	.42876

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2. STACK CONDITIONS

FLOW (ACFM)	25807.
(SCFM)	22227.
MOISTURE CONTENT (%)	1.96
STACK TEMPERATURE (F)	142.0

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	34.216
PERCENT ISOKINETIC	104.68

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1,2,3 BATTERY PEC
CLR-1-1-1 — 11-3-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	900.0	512.407	1.500	1.46	1.46	61.	60.	8.0	128.	73.4
33.6			1.550	1.50	1.50	61.	61.	8.0	130.	74.7
31.7			1.550	1.50	1.50	62.	61.	8.0	132.	74.8
29.6			1.450	1.40	1.40	64.	63.	8.0	134.	72.5
27.0			1.400	1.33	1.33	65.	64.	7.0	135.	71.3
23.2			1.300	1.25	1.25	65.	65.	7.0	139.	68.9
12.8			1.000	.97	.97	65.	65.	5.5	140.	60.5
9.0			1.000	.94	.94	68.	67.	5.5	142.	60.6
6.4			.950	.89	.89	68.	67.	5.5	144.	59.2
4.3			.900	.84	.84	68.	67.	5.0	140.	57.4
2.4			.950	.89	.89	69.	67.	5.5	135.	58.7
1.0E	912.0	520.604	.850	.80	.80	70.	68.	5.0	129.	55.3
1.0E	912.0	520.604	.900	.84	.84	70.	69.	5.0	128.	56.8
2.4			.950	.89	.89	70.	69.	5.5	130.	58.5
4.3			.950	.89	.89	71.	70.	5.5	141.	59.0
6.4			.900	.86	.86	72.	70.	5.0	140.	57.4
9.0			1.000	.96	.96	73.	71.	5.5	144.	60.7
12.8			1.000	.96	.96	74.	73.	5.5	145.	60.8
23.2			1.100	1.06	1.06	74.	73.	6.0	144.	63.7
27.0			1.000	.96	.96	75.	73.	5.5	142.	60.6
29.6			1.000	.96	.96	74.	74.	5.5	141.	60.6
31.7			.900	.84	.84	75.	74.	5.0	137.	57.3
33.6			.900	.84	.84	75.	75.	5.0	140.	57.4
35.0E	924.0	527.756	.750	.72	.72	75.	75.	5.0	141.	52.4
35.0E	924.0	527.756	.800	.77	.77	75.	75.	5.0	145.	54.3
33.6			.800	.77	.77	75.	75.	5.0	144.	54.3
31.7			1.200	1.15	1.15	76.	75.	6.0	146.	66.6
29.6			1.000	.96	.96	76.	75.	5.5	146.	60.8
27.0			1.100	1.06	1.06	76.	75.	5.5	144.	63.7
23.2			1.000	.96	.96	77.	76.	5.5	142.	60.6
12.8			1.000	.96	.96	77.	76.	5.5	141.	60.6
9.0			1.000	.96	.96	78.	77.	5.5	137.	60.4
6.4			1.000	.96	.96	78.	77.	5.5	143.	60.7
4.3			.950	.89	.89	78.	78.	5.0	135.	58.7
2.4			.900	.84	.84	78.	78.	5.0	136.	57.2
1.0E	936.0	534.961	1.000	.96	.96	78.	78.	5.5	133.	60.1
35.0S	936.0	534.961	1.000	.96	.96	79.	78.	5.5	143.	60.7
33.6			1.000	.96	.96	80.	79.	5.5	145.	60.8
31.7			1.100	1.06	1.06	80.	79.	6.0	146.	63.8
29.6			1.100	1.06	1.06	80.	79.	6.0	144.	63.7
27.0			1.100	1.06	1.06	80.	80.	6.0	147.	63.8
23.2			1.100	1.06	1.06	81.	80.	6.0	146.	63.8
12.8			.900	.84	.84	82.	81.	5.0	149.	57.8
9.0			.800	.77	.77	82.	81.	5.0	147.	54.4

6.4			.900	.86	.86	82.	81.	5.0	149.	57.8
4.3			1.000	.96	.96	82.	82.	5.5	143.	60.7
2.4			.800	.77	.77	83.	82.	5.0	142.	54.2
1.0S	948.0	541.927	.500	.48	.48	84.	82.	4.0	142.	42.9

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1,2,3 BATTERY PEC
CLR-1-1-1 — 11-3-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
1.0S	948.0	541.927	.750	.72	.72	84.	84.	5.0	138.	52.3
2.4			.800	.77	.77	84.	84.	5.0	142.	54.2
4.3			1.000	.96	.96	84.	84.	5.5	134.	60.2
6.4			.900	.86	.86	85.	84.	5.0	146.	57.7
9.0			.900	.86	.86	85.	84.	5.0	149.	57.8
12.8			.900	.86	.86	85.	83.	5.0	154.	58.1
23.2			1.100	1.06	1.06	85.	84.	6.0	153.	64.1
27.0			1.200	1.15	1.15	85.	84.	6.0	152.	66.9
29.6			1.300	1.25	1.25	85.	84.	6.5	154.	69.8
31.7			1.200	1.15	1.15	85.	84.	6.0	151.	66.9
33.6			1.100	1.06	1.06	85.	84.	6.0	155.	64.2
35.0S	1000.0	548.748	1.100	1.06	1.06	85.	84.	6.0	153.	64.1

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	7.1
	2	1.1
	3	.2
	4	.0
ABSORBED H2O		6.1

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.756	6-3-92
METER	0.9721	6-3-92
PITOT	0.84	5-1-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	8.0

CONTROL BOX NO. 4 — PROBE NO. 5-1 — NOZZLE NO. 22

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-1 11-3-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.32
B.	AVG. DELTA H (IN H2O).....	.97
C.	METER PRESSURE (IN. HG.).....	29.39
D.	STATIC PRESSURE (IN. H2O).....	.80
E.	STATIC PRESSURE (IN. HG.).....	.059
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.38
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.1800
I.	NOZZLE AREA (SQ. FT.).....	.000177
J.	AVG. STACK TEMP (DEG. R.).....	602.0
K.	AVG. METER TEMP (DEG. R.).....	535.9
L.	CONDENSATE VOL. (ML).....	8.4
M.	ABSORBED H2O (ML).....	6.1
N.	TOTAL H2O (ML).....	14.5
O.	METERED GAS (CF).....	36.341
P.	GAS METER CORRECTION.....	.9721
Q.	CORRECTED METERED GAS (CF).....	35.327
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	.706
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	36.033
T.	PERCENT H2O (100R/S).....	1.96
	THEORETICAL MAXIMUM.....	21.09
	PERCENT WATER USED.....	1.96
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	34.216
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9804	X	44.0	=	.00
CO	.000	X	.9804	X	28.0	=	.00
O2	.205	X	.9804	X	32.0	=	6.43
N2	.795	X	.9804	X	28.2	=	21.98
H2O		X	T/100= .0196	X	18.0	=	.35
					MOLECULAR WEIGHT OF STACK GAS	=	28.76

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS).....	60.85
	[85.49*W*SQRT{(J*DELTA P)/(V*F)}]	
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	25807.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	22227.
	STACK FLOW RATE (DRY).....	21792.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC.....	104.68
	(J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-1 11-3-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00120	.00000	.00380

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.00780

PARTICULATE	.01290
ALL MATLS.	.01290

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00230	.42876

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-2

DATE: 11-3-92
CHARGE #: ...150-300196
TEST #: CLR-1-2-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00197	.38400

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2. STACK CONDITIONS

FLOW (ACFM)	26687.
(SCFM)	23197.
MOISTURE CONTENT (%)	1.82
STACK TEMPERATURE (F)	136.5

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	33.665
PERCENT ISOKINETIC	98.54

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-1 11-3-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
35.0E	900.0	897.511	1.800	1.60	1.60	69.	61.	8.0	124.	80.1
33.6			1.700	1.51	1.51	72.	64.	8.0	124.	77.8
31.7			1.800	1.60	1.60	74.	63.	8.0	126.	80.2
29.6			1.600	1.43	1.43	75.	65.	7.0	128.	75.7
27.0			1.500	1.34	1.34	76.	66.	7.0	130.	73.5
23.2			1.300	1.15	1.15	77.	67.	6.0	130.	68.4
12.8			1.100	.97	.97	77.	67.	5.0	134.	63.1
9.0			1.100	.97	.97	78.	70.	5.0	134.	63.1
6.4			1.100	.97	.97	79.	69.	5.0	135.	63.2
4.3			1.100	.97	.97	79.	71.	5.0	131.	63.0
2.4			.900	.80	.80	80.	71.	4.0	130.	56.9
1.0E	912.0	905.035	.700	.62	.62	82.	73.	3.5	130.	50.2
1.0E	912.0	905.035	.700	.62	.62	81.	72.	3.5	130.	50.2
2.4			1.000	.90	.90	82.	74.	4.5	130.	60.0
4.3			1.100	.99	.99	83.	74.	5.0	131.	63.0
6.4			1.100	.99	.99	84.	74.	5.0	135.	63.2
9.0			1.100	.99	.99	84.	76.	5.0	136.	63.2
12.8			1.100	.99	.99	85.	76.	5.0	137.	63.3
23.2			1.200	1.08	1.08	85.	77.	5.0	134.	65.9
27.0			1.200	1.08	1.08	86.	76.	5.0	135.	66.0
29.6			1.200	1.08	1.08	86.	78.	5.0	136.	66.0
31.7			.800	.72	.72	85.	77.	4.0	137.	54.0
33.6			.800	.72	.72	85.	79.	4.0	137.	54.0
35.0E	924.0	911.927	1.000	.90	.90	88.	78.	4.5	136.	60.3
35.0E	924.0	911.927	1.000	.90	.90	87.	79.	4.5	136.	60.3
33.6			.900	.81	.81	87.	79.	4.0	136.	57.2
31.7			.900	.81	.81	87.	80.	4.0	136.	57.2
29.6			1.000	.90	.90	88.	79.	4.5	137.	60.3
27.0			1.100	.99	.99	88.	80.	5.0	137.	63.3
23.2			1.100	.99	.99	88.	79.	5.0	139.	63.4
12.8			1.100	.99	.99	88.	82.	5.0	135.	63.2
9.0			1.200	1.08	1.08	90.	82.	5.0	135.	66.0
6.4			1.200	1.08	1.08	90.	83.	5.0	136.	66.0
4.3			1.200	1.08	1.08	90.	81.	5.0	133.	65.9
2.4			1.000	.90	.90	90.	83.	4.5	131.	60.0
1.0E	936.0	918.958	.800	.72	.72	91.	82.	4.0	130.	53.6
35.0S	936.0	918.958	1.000	.90	.90	90.	83.	4.5	137.	60.3
33.6			1.300	1.17	1.17	92.	83.	6.0	139.	68.9
31.7			1.300	1.17	1.17	92.	84.	6.0	140.	69.0
29.6			1.300	1.17	1.17	92.	83.	6.0	141.	69.0
27.0			1.400	1.26	1.26	92.	85.	6.0	140.	71.6
23.2			1.300	1.17	1.17	93.	85.	6.0	141.	69.0
12.8			.900	.81	.81	93.	88.	4.0	141.	57.4
9.0			.900	.81	.81	94.	88.	4.0	142.	57.5

6.4			.900	.82	.82	93.	87.	4.0	144.	57.6
4.3			.900	.82	.82	93.	85.	4.0	137.	57.2
2.4			.900	.82	.82	93.	86.	4.0	135.	57.1
1.0S	948.0	926.020	.800	.73	.73	94.	86.	4.0	134.	53.8

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-1 11-3-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
1.0S	948.0	926.020	.800	.73	.73	94.	86.	4.0	130.	53.6
2.4			.900	.82	.82	94.	88.	4.0	133.	57.0
4.3			1.000	.91	.91	95.	89.	4.5	137.	60.3
6.4			1.000	.91	.91	95.	90.	4.5	145.	60.7
9.0			.900	.82	.82	95.	90.	4.0	148.	57.8
12.8			.900	.82	.82	95.	90.	4.0	147.	57.7
23.2			1.300	1.18	1.18	95.	88.	5.5	147.	69.4
27.0			1.300	1.18	1.18	95.	89.	5.5	146.	69.3
29.6			1.300	1.18	1.18	95.	88.	5.5	148.	69.4
31.7			1.100	1.00	1.00	95.	89.	5.0	147.	63.8
33.6			1.300	1.18	1.18	94.	87.	5.5	151.	69.6
35.0S	1000.0	933.063	.900	.82	.82	94.	90.	4.0	147.	57.7

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.8
	2	.7
	3	.2
	4	.0
ABSORBED H2O		5.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.618	5-5-92
METER	0.9915	5-5-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	8.0

CONTROL BOX NO. 3 PROBE NO. 5-4 NOZZLE NO. 11

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-1 11-3-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.32
B.	AVG. DELTA H (IN H2O)	.99
C.	METER PRESSURE (IN. HG.)	29.39
D.	STATIC PRESSURE (IN. H2O)	.80
E.	STATIC PRESSURE (IN. HG.)	.059
F.	STACK PRESSURE (IN. HG.) (A+E)	29.38
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	596.5
K.	AVG. METER TEMP (DEG. R.)	543.5
L.	CONDENSATE VOL. (ML)	7.7
M.	ABSORBED H2O (ML)	5.5
N.	TOTAL H2O (ML)	13.2
O.	METERED GAS (CF)	35.552
P.	GAS METER CORRECTION	.9915
Q.	CORRECTED METERED GAS (CF)	35.250
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.652
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	35.901
T.	PERCENT H2O (100R/S)	1.82
	THEORETICAL MAXIMUM	18.07
	PERCENT WATER USED	1.82
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	33.665
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9818	X	44.0	=	.00
CO	.000	X	.9818	X	28.0	=	.00
O2	.205	X	.9818	X	32.0	=	6.44
N2	.795	X	.9818	X	28.2	=	22.01
H2O		X	T/100= .0182	X	18.0	=	.33
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	62.92
Y.	AVG. FLOW RATE (CFM) (X*H*60)	26687.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	23197.
	STACK FLOW RATE (DRY)	22776.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	98.54

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-1 11-3-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00070	.00000	.00340

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00020	.01510

PARTICULATE	.01940
ALL MATLS.	.01940

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00197	.38400

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-3

DATE: 11-3-92
CHARGE #: ...150-300196
TEST #: CLR-1-3-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00494	.88610

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2. STACK CONDITIONS

FLOW (ACFM)	24216.
(SCFM)	21357.
MOISTURE CONTENT (%)	1.92
STACK TEMPERATURE (F)	128.2

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	26.211
PERCENT ISOKINETIC	108.27

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-3-1 11-3-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
35.0E	900.0	659.354	2.000	1.15	1.15	63.	64.	5.0	118.	84.0
33.6			1.300	.74	.74	63.	65.	5.0	120.	67.8
31.7			1.400	.80	.80	64.	66.	5.0	120.	70.4
29.6			1.300	.74	.74	64.	68.	4.5	120.	67.8
27.0			1.500	.86	.86	65.	69.	5.0	122.	73.0
23.2			1.300	.74	.74	66.	71.	4.5	123.	68.0
12.8			.700	.40	.40	67.	71.	3.0	124.	49.9
9.0			.700	.40	.40	68.	73.	3.0	123.	49.9
6.4			.700	.40	.40	69.	73.	3.0	125.	50.0
4.3			.600	.34	.34	70.	74.	2.5	124.	46.2
2.4			.900	.52	.52	71.	75.	3.0	125.	56.7
1.0E	912.0	665.015	.900	.52	.52	72.	75.	3.0	125.	56.7
1.0E	912.0	665.015	.700	.41	.41	73.	77.	3.0	126.	50.0
2.4			.700	.41	.41	73.	78.	3.0	124.	49.9
4.3			.700	.41	.41	74.	78.	3.0	125.	50.0
6.4			.900	.52	.52	74.	79.	3.5	125.	56.7
9.0			.900	.52	.52	75.	79.	3.0	125.	56.7
12.8			.800	.47	.47	76.	80.	3.0	125.	53.4
23.2			.900	.52	.52	76.	80.	3.5	125.	56.7
27.0			1.000	.58	.58	76.	81.	4.0	124.	59.7
29.6			1.000	.58	.58	77.	81.	4.0	126.	59.8
31.7			1.100	.65	.65	77.	81.	4.0	125.	62.6
33.6			1.100	.65	.65	77.	81.	4.0	125.	62.6
35.0E	924.0	670.517	1.000	.59	.59	78.	81.	4.0	127.	59.8
35.0E	924.0	670.517	1.000	.59	.59	78.	82.	4.0	126.	59.8
33.6			1.000	.59	.59	78.	82.	4.0	127.	59.8
31.7			1.000	.59	.59	78.	82.	3.5	127.	59.8
29.6			.800	.47	.47	79.	82.	3.0	127.	53.5
27.0			.900	.53	.53	78.	83.	3.5	128.	56.8
23.2			.900	.53	.53	79.	82.	3.5	127.	56.8
12.8			.800	.47	.47	78.	81.	3.0	125.	53.4
9.0			.700	.41	.41	79.	82.	3.0	122.	49.8
6.4			.700	.41	.41	79.	83.	3.0	123.	49.9
4.3			.700	.41	.41	80.	83.	3.0	125.	50.0
2.4			.700	.41	.41	80.	83.	3.0	127.	50.1
1.0E	936.0	675.730	.600	.35	.35	80.	84.	2.5	127.	46.3
35.0S	936.0	675.730	1.200	.71	.71	80.	85.	4.5	126.	65.5
33.6			1.100	.65	.65	81.	86.	4.0	127.	62.7
31.7			1.100	.65	.65	81.	85.	4.0	128.	62.8
29.6			1.000	.59	.59	81.	85.	4.0	130.	60.0
27.0			1.000	.59	.59	81.	86.	3.5	130.	60.0
23.2			.900	.53	.53	82.	86.	3.5	130.	56.9
12.8			.700	.41	.41	82.	85.	3.0	130.	50.2
9.0			.700	.41	.41	82.	86.	3.0	133.	50.3

6.4										
4.3			.700	.41	.41	83.	86.	3.0	133.	50.3
2.4			.700	.41	.41	82.	87.	3.0	134.	50.4
1.0S	948.0	680.654	.600	.35	.35	83.	87.	2.5	135.	46.7
			.600	.35	.35	83.	87.	2.5	134.	46.6

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-1

1,2,3 BATTERY PEC
11-3-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ACT	METER TEMP DEG F IN	OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
1.0S	948.0	680.654	.600	.35	.35	84.	87.	2.5	135.	46.7
2.4			.900	.53	.53	83.	88.	3.5	136.	57.2
4.3			.800	.47	.47	84.	88.	3.0	135.	53.9
6.4			.900	.53	.53	84.	88.	3.5	136.	57.2
9.0			.800	.47	.47	84.	88.	3.0	135.	53.9
12.8			.900	.53	.53	84.	88.	3.0	135.	57.1
23.2			.900	.53	.53	85.	88.	3.5	136.	57.2
27.0			1.000	.58	.58	84.	89.	3.5	138.	60.4
29.6			1.100	.64	.64	85.	88.	4.0	137.	63.3
31.7			1.100	.64	.64	84.	89.	4.0	138.	63.3
33.6			1.200	.70	.70	84.	88.	4.5	138.	66.1
35.0S	1000.0	685.840	1.100	.64	.64	85.	89.	4.0	138.	63.3

ORSAT

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	5.4
	2	1.1
	3	.3
	4	.0
ABSORBED H2O		4.1

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.768	10-16-92
METER	1.0295	10-16-92
PITOT	0.84	7-27-92

LEAK CHECK

		RATE	IN.HG
INITIAL	LT	0.02CFM	5.0
FINAL	LT	0.02CFM	5.5

CONTROL BOX NO. 1

PROBE NO. 5-3

NOZZLE NO. 16

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-3-1 11-3-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.32
B.	AVG. DELTA H (IN H2O)	.54
C.	METER PRESSURE (IN. HG.)	29.36
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.39
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1580
I.	NOZZLE AREA (SQ. FT.)	.000136
J.	AVG. STACK TEMP (DEG. R.)	588.2
K.	AVG. METER TEMP (DEG. R.)	539.4
L.	CONDENSATE VOL. (ML)	6.8
M.	ABSORBED H2O (ML)	4.1
N.	TOTAL H2O (ML)	10.9
O.	METERED GAS (CF)	26.486
P.	GAS METER CORRECTION	1.0295
Q.	CORRECTED METERED GAS (CF)	27.267
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.535
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	27.802
T.	PERCENT H2O (100R/S)	1.92
	THEORETICAL MAXIMUM	14.61
	PERCENT WATER USED	1.92
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	26.211
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9808	X	44.0	=	.00
CO	.000	X	.9808	X	28.0	=	.00
O2	.205	X	.9808	X	32.0	=	6.43
N2	.795	X	.9808	X	28.2	=	21.99
H2O		X	T/100= .0192	X	18.0	=	.35
					MOLECULAR WEIGHT OF STACK GAS	=	28.77

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	57.10
Y.	AVG. FLOW RATE (CFM) (X*H*60)	24216.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	21357.
	STACK FLOW RATE (DRY)	20946.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	108.27

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-3-1 11-3-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00090	.00000	.00730

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00020	.01080

PARTICULATE	.01920
ALL MATLS.	.01920

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00494	.88610

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1,2,3 BATTERY PEC
CLR-1-4-1 — 11-3-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
35.0E	900.0	895.396	1.700	.85	.85	73.	66.	4.0	116.	77.2
33.6			1.700	.85	.85	70.	67.	4.0	118.	77.4
31.7			1.600	.80	.80	72.	67.	4.0	117.	75.0
29.6			1.400	.70	.70	74.	67.	3.5	116.	70.1
27.0			1.500	.75	.75	75.	68.	3.5	119.	72.7
23.2			1.000	.50	.50	76.	70.	1.0	122.	59.6
12.8			1.000	.50	.50	76.	70.	1.5	126.	59.8
9.0			1.000	.51	.51	76.	70.	2.5	124.	59.7
6.4			1.000	.51	.51	77.	71.	2.5	131.	60.0
4.3			1.000	.51	.51	77.	72.	2.5	130.	60.0
2.4			.900	.46	.46	82.	74.	2.0	124.	56.6
1.0E	912.0	901.257	.700	.36	.36	84.	74.	1.0	117.	49.6
1.0E	912.0	901.257	.700	.36	.36	82.	75.	1.5	119.	49.7
2.4			.900	.46	.46	82.	76.	2.0	128.	56.8
4.3			1.000	.51	.51	82.	77.	2.5	135.	60.2
6.4			1.000	.51	.51	82.	76.	2.5	134.	60.2
9.0			1.000	.51	.51	82.	77.	2.5	129.	59.9
12.8			1.000	.51	.51	82.	78.	2.5	134.	60.2
23.2			.900	.36	.36	84.	78.	2.0	132.	57.0
27.0			.800	.41	.41	88.	78.	2.0	132.	53.7
29.6			.800	.41	.41	86.	80.	2.0	129.	53.6
31.7			.800	.41	.41	86.	80.	2.0	128.	53.5
33.6			.800	.41	.41	84.	80.	2.0	130.	53.6
35.0E	924.0	906.357	.800	.41	.41	83.	78.	2.0	135.	53.9
35.0E	924.0	906.357	1.100	.57	.57	88.	80.	2.5	132.	63.0
33.6			.900	.46	.46	86.	79.	2.0	132.	57.0
31.7			.900	.46	.46	85.	80.	2.0	133.	57.0
29.6			.700	.36	.36	87.	81.	2.0	133.	50.3
27.0			.800	.41	.41	87.	81.	2.0	134.	53.8
23.2			.900	.46	.46	86.	81.	2.2	138.	57.3
12.8			1.000	.51	.51	86.	82.	2.5	136.	60.3
9.0			1.000	.51	.51	87.	82.	2.5	132.	60.1
6.4			1.000	.51	.51	88.	83.	2.5	134.	60.2
4.3			1.000	.51	.51	88.	82.	2.5	134.	60.2
2.4			.900	.46	.46	90.	82.	2.0	132.	57.0
1.0E	936.0	911.676	.800	.41	.41	90.	83.	2.0	129.	53.6
35.0S	936.0	911.676	1.000	.51	.51	90.	83.	2.5	134.	60.2
33.6			1.000	.51	.51	93.	84.	2.5	134.	60.2
31.7			1.200	.62	.62	93.	85.	3.0	134.	65.9
29.6			1.200	.62	.62	91.	86.	3.0	136.	66.0
27.0			1.200	.62	.62	90.	85.	3.0	137.	66.1
23.2			1.000	.51	.51	93.	85.	2.5	136.	60.3
12.8			.800	.41	.41	92.	84.	2.0	137.	53.9
9.0			.800	.41	.41	92.	85.	2.0	140.	54.1

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-4

DATE: 11-3-92
CHARGE #: ...150-300196
TEST #: CLR-1-4-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00372	.68949

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2. STACK CONDITIONS

FLOW (ACFM)	25123.
(SCFM)	22024.
MOISTURE CONTENT (%)	1.77
STACK TEMPERATURE (F)	131.7

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	25.679
PERCENT ISOKINETIC	102.70

6.4			.800	.41	.41	92.	84.	2.0	140.	54.1
4.3			.800	.41	.41	92.	86.	2.0	137.	53.9
2.4			.900	.46	.46	92.	86.	2.0	124.	56.6
1.0S	948.0	917.030	.800	.41	.41	94.	86.	2.0	120.	53.2

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1,2,3 BATTERY PEC
CLR-1-4-1 — 11-3-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FFT/SEC
1.0S	948.0	917.030	.800	.41	.41	94.	86.	2.0	123.	53.3
2.4			.800	.41	.41	96.	97.	2.0	125.	53.4
4.3			.900	.46	.46	96.	88.	2.0	139.	57.3
6.4			.800	.41	.41	97.	87.	2.0	141.	54.1
9.0			.800	.41	.41	96.	87.	2.0	144.	54.3
12.8			.800	.41	.41	97.	87.	2.0	141.	54.1
23.2			.900	.46	.46	96.	87.	2.5	140.	57.4
27.0			1.100	.57	.57	96.	87.	2.5	142.	63.5
29.6			1.200	.62	.62	96.	88.	3.0	143.	66.4
31.7			1.200	.62	.62	97.	88.	3.0	142.	66.3
33.6			1.200	.62	.62	95.	88.	3.0	145.	66.5
35.0S	1000.0	922.550	1.100	.57	.57	97.	88.	3.0	144.	63.6

ORSAT

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	59.0
	2	-53.4
	3	.8
	4	.0
ABSORBED H2O		3.4

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.535	9-14-92
METER	1.0515	9-14-92
PITOT	0.84	8-24-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	5.5

CONTROL BOX NO. 7 PROBE NO. 5-5 NOZZLE NO. 18

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-1 11-3-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.32
B.	AVG. DELTA H (IN H2O)	.50
C.	METER PRESSURE (IN. HG.)	29.36
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.39
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1580
I.	NOZZLE AREA (SQ. FT.)	.000136
J.	AVG. STACK TEMP (DEG. R.)	591.7
K.	AVG. METER TEMP (DEG. R.)	543.7
L.	CONDENSATE VOL. (ML)	6.4
M.	ABSORBED H2O (ML)	3.4
N.	TOTAL H2O (ML)	9.8
O.	METERED GAS (CF)	27.154
P.	GAS METER CORRECTION	.9918
Q.	CORRECTED METERED GAS (CF)	26.931
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.485
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	27.416
T.	PERCENT H2O (100R/S)	1.77
	THEORETICAL MAXIMUM	16.26
	PERCENT WATER USED	1.77
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	25.679
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9823	X	44.0	=	.00
CO	.000	X	.9823	X	28.0	=	.00
O2	.205	X	.9823	X	32.0	=	6.44
N2	.795	X	.9823	X	28.2	=	22.02
H2O		X	T/100= .0177	X	18.0	=	.32
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	59.24
Y.	AVG. FLOW RATE (CFM) (X*H*60)	25123.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	22024.
	STACK FLOW RATE (DRY)	21635.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	102.70

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-1 11-3-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00200	.00000	.00400

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00020	.01360

PARTICULATE	.01980
ALL MATLS.	.01980

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00372	.68949

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-1

DATE: 11-4-92
CHARGE #: ...150-300196
TEST #: CLR-1-1-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00350	.71624

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2. STACK CONDITIONS

FLOW (ACFM)	28656.
(SCFM)	24398.
MOISTURE CONTENT (%)	2.23
STACK TEMPERATURE (F)	144.2

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	36.051
PERCENT ISOKINETIC	100.75

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-2 11-4-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FFT/SEC
35.0S	900.0	549.033	1.100	1.04	1.04	65.	64.	3.5	139.	63.7
33.6			1.400	1.32	1.32	66.	65.	4.0	137.	71.7
31.7			1.400	1.32	1.32	67.	67.	4.0	138.	71.8
29.6			1.400	1.32	1.32	67.	67.	4.0	140.	71.9
27.0			1.300	1.23	1.23	68.	67.	3.5	142.	69.4
23.2			1.300	1.23	1.23	68.	68.	3.5	141.	69.3
12.8			1.000	.94	.94	69.	68.	3.0	143.	60.9
9.0			1.100	1.04	1.04	71.	70.	3.0	143.	63.9
6.4			1.100	1.04	1.04	72.	71.	3.0	141.	63.8
4.3			1.200	1.13	1.13	72.	72.	3.5	139.	66.5
2.4			1.100	1.04	1.04	73.	72.	3.0	139.	63.7
1.0S	912.0	557.011	1.100	1.04	1.04	74.	74.	3.0	140.	63.7
1.0S	912.0	557.011	1.100	1.05	1.05	75.	74.	3.0	138.	63.6
2.4			1.100	1.05	1.05	76.	75.	3.0	140.	63.7
4.3			1.200	1.15	1.15	77.	75.	3.5	143.	66.7
6.4			1.100	1.05	1.05	78.	77.	3.0	146.	64.1
9.0			1.100	1.05	1.05	79.	78.	3.0	146.	64.1
12.8			1.000	.96	.96	79.	79.	3.0	147.	61.1
23.2			1.200	1.15	1.15	79.	79.	3.5	147.	67.0
27.0			1.400	1.34	1.34	80.	80.	4.0	149.	72.4
29.6			1.400	1.34	1.34	81.	80.	4.0	148.	72.4
31.7			1.300	1.25	1.25	82.	81.	4.0	149.	69.8
33.6			1.500	1.44	1.44	83.	82.	4.0	150.	75.0
35.0S	924.0	564.743	1.500	1.44	1.44	85.	83.	4.0	150.	75.0
35.0S	924.0	564.743	1.200	1.15	1.15	85.	84.	3.5	151.	67.2
33.6			1.400	1.34	1.34	86.	85.	4.0	150.	72.5
31.7			1.300	1.25	1.25	87.	86.	3.5	148.	69.7
29.6			1.500	1.45	1.45	87.	87.	4.0	149.	75.0
27.0			1.400	1.34	1.34	89.	88.	4.0	138.	71.8
23.2			1.300	1.25	1.25	89.	89.	3.5	137.	69.1
12.8			1.100	1.05	1.05	90.	89.	3.0	139.	63.7
9.0			1.200	1.15	1.15	90.	89.	3.5	141.	66.6
6.4			1.200	1.15	1.15	90.	90.	3.5	141.	66.6
4.3			1.200	1.15	1.15	89.	89.	3.5	139.	66.5
2.4			1.100	1.05	1.05	90.	89.	3.0	138.	63.6
1.0S	936.0	572.515	1.100	1.05	1.05	90.	89.	3.0	136.	63.5
35.0E	936.0	572.515	1.500	1.44	1.44	89.	88.	4.0	143.	74.6
33.6			1.500	1.44	1.44	89.	89.	4.0	145.	74.7
31.7			1.500	1.44	1.44	90.	89.	4.0	147.	74.9
29.6			1.400	1.33	1.33	90.	89.	4.0	146.	72.3
27.0			1.400	1.33	1.33	90.	90.	4.0	148.	72.4
23.2			1.300	1.25	1.25	90.	90.	3.5	147.	69.7
12.8			1.000	.96	.96	91.	90.	3.0	148.	61.2
9.0			1.000	.96	.96	91.	91.	3.0	147.	61.1

6.4			1.100	1.05	1.05	91.	90.	3.0	149.	64.2
4.3			1.000	.96	.96	90.	90.	3.0	146.	61.1
2.4			1.100	1.05	1.05	91.	90.	3.0	145.	64.0
1.0E	948.0	580.392	1.000	.96	.96	91.	90.	3.0	144.	61.0

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-2 11-4-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
1.0E	948.0	580.392	1.000	.96	.96	92.	91.	3.0	142.	60.9
2.4			1.000	.97	.97	92.	90.	3.0	139.	60.7
4.3			1.000	.97	.97	92.	90.	3.0	146.	61.1
6.4			1.100	1.07	1.07	91.	90.	3.0	148.	64.2
9.0			1.100	1.07	1.07	90.	90.	3.0	148.	64.2
12.8			1.100	1.07	1.07	90.	88.	3.0	147.	64.1
23.2			1.300	1.26	1.26	89.	88.	4.0	148.	69.7
27.0			1.400	1.36	1.36	88.	87.	4.0	146.	72.3
29.6			1.500	1.46	1.46	87.	86.	4.0	149.	75.0
31.7			1.500	1.46	1.46	86.	86.	4.0	148.	74.9
33.6			1.500	1.46	1.46	85.	85.	4.0	148.	74.9
35.0E	1000.0	588.139	1.300	1.26	1.26	85.	84.	4.0	146.	69.6

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	9.7
	2	.9
	3	.0
	4	.0
ABSORBED H2O		6.8

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.756	6-3-92
METER	0.9721	6-3-92
PITOT	0.84	5-1-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	5.0

CONTROL BOX NO. 4 PROBE NO. 5-1 NOZZLE NO. 22

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-2 11-4-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.07
B.	AVG. DELTA H (IN H2O)	1.18
C.	METER PRESSURE (IN. HG.)	29.16
D.	STATIC PRESSURE (IN. H2O)	1.10
E.	STATIC PRESSURE (IN. HG.)	.081
F.	STACK PRESSURE (IN. HG.) (A+E)	29.15
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	604.2
K.	AVG. METER TEMP (DEG. R.)	542.9
L.	CONDENSATE VOL. (ML)	10.6
M.	ABSORBED H2O (ML)	6.8
N.	TOTAL H2O (ML)	17.4
O.	METERED GAS (CF)	39.106
P.	GAS METER CORRECTION	.9721
Q.	CORRECTED METERED GAS (CF)	38.015
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.865
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	38.880
T.	PERCENT H2O (100R/S)	2.23
	THEORETICAL MAXIMUM	22.37
	PERCENT WATER USED	2.23
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	36.051
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9777	X	44.0	=	.00
CO	.000	X	.9777	X	28.0	=	.00
O2	.205	X	.9777	X	32.0	=	6.41
N2	.795	X	.9777	X	28.2	=	21.92
H2O		X	T/100= .0223	X	18.0	=	.40
					MOLECULAR WEIGHT OF STACK GAS	=	28.73

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	67.57
Y.	AVG. FLOW RATE (CFM) (X*H*60)	28656.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	24398.
	STACK FLOW RATE (DRY)	23855.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	100.75

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-1-2 11-4-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00110	.00000	.00700

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.00980
PARTICULATE	.01800	
ALL MATLS.	.01800	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00350	.71624

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-2

DATE: 11-4-92
CHARGE #: ...150-300196
TEST #: CLR-1-2-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00221	.46854

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2. STACK CONDITIONS

FLOW (ACFM)	29354.
(SCFM)	25293.
MOISTURE CONTENT (%)	2.38
STACK TEMPERATURE (F)	136.9

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	37.565
PERCENT ISOKINETIC	101.42

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-2 11-4-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
35.0S	900.0	933.249	1.400	1.30	1.30	72.	64.	3.0	128.	71.2
33.6			1.500	1.33	1.33	74.	66.	3.0	130.	73.8
31.7			1.500	1.34	1.34	77.	66.	3.0	130.	73.8
29.6			1.800	1.61	1.61	78.	66.	3.5	131.	81.0
27.0			1.500	1.34	1.34	79.	68.	3.0	132.	74.0
23.2			1.300	1.16	1.16	80.	71.	3.0	133.	68.9
12.8			1.100	.98	.98	81.	71.	2.5	134.	63.4
9.0			1.000	.89	.89	81.	72.	2.0	135.	60.5
6.4			1.000	.89	.89	82.	73.	2.0	135.	60.5
4.3			1.300	1.16	1.16	85.	75.	2.8	133.	68.9
2.4			1.000	.89	.89	84.	75.	2.0	131.	60.3
1.0S	912.0	941.178	.900	.80	.80	85.	77.	2.0	130.	57.2
1.0S	912.0	941.178	1.100	.98	.98	86.	75.	2.0	129.	63.2
2.4			1.000	.89	.89	87.	79.	2.0	130.	60.3
4.3			1.200	1.07	1.07	88.	78.	2.5	134.	66.3
6.4			1.400	1.26	1.26	89.	78.	3.0	138.	71.8
9.0			1.100	.99	.99	89.	81.	2.5	137.	63.6
12.8			1.100	.99	.99	90.	81.	2.5	139.	63.7
23.2			1.200	1.08	1.08	91.	83.	2.5	138.	66.5
27.0			1.600	1.44	1.44	92.	84.	3.0	139.	76.8
29.6			1.600	1.44	1.44	94.	85.	3.0	140.	76.9
31.7			1.700	1.53	1.53	93.	86.	3.0	140.	79.3
33.6			1.600	1.44	1.44	94.	87.	3.0	142.	77.0
35.0S	924.0	949.251	1.500	1.35	1.35	95.	85.	3.0	143.	74.6
35.0S	924.0	949.251	1.500	1.35	1.35	95.	87.	3.0	140.	74.5
33.6			1.600	1.44	1.44	96.	86.	3.0	143.	77.1
31.7			1.600	1.44	1.44	97.	90.	3.0	139.	76.8
29.6			1.600	1.44	1.44	97.	90.	3.0	142.	77.0
27.0			1.500	1.37	1.37	97.	92.	3.0	126.	73.6
23.2			1.400	1.27	1.27	98.	91.	3.0	132.	71.5
12.8			1.100	1.00	1.00	98.	92.	2.5	132.	63.3
9.0			1.100	1.00	1.00	98.	91.	2.5	136.	63.5
6.4			1.300	1.18	1.18	99.	92.	2.8	134.	69.0
4.3			1.300	1.18	1.18	98.	91.	2.8	130.	68.7
2.4			.600	.55	.55	97.	92.	1.5	129.	46.7
1.0S	936.0	957.314	1.200	1.09	1.09	97.	90.	2.5	128.	65.9
35.0E	936.0	957.314	1.100	1.00	1.00	99.	92.	2.5	140.	63.8
33.6			1.800	1.64	1.64	100.	91.	3.5	138.	81.4
31.7			1.800	1.64	1.64	99.	92.	3.5	141.	81.6
29.6			1.500	1.37	1.37	100.	91.	3.0	139.	74.4
27.0			1.400	1.27	1.27	99.	94.	3.0	140.	71.9
23.2			1.200	1.09	1.09	99.	94.	2.5	141.	66.7
12.8			1.200	1.09	1.09	99.	93.	2.5	143.	66.8
9.0			1.300	1.18	1.18	99.	92.	2.5	142.	69.4

6.4			1.300	1.18	1.18	99.	93.	2.5	143.	69.5
4.3			1.200	1.09	1.09	99.	91.	2.5	141.	66.7
2.4			1.100	1.00	1.00	99.	93.	2.0	140.	63.8
1.0E	948.0	965.446	1.000	.91	.91	100.	92.	2.0	138.	60.7

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-2-2

1,2,3 BATTERY PEC
11-4-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
1.0E	948.0	965.446	1.100	1.00	1.00	98.	94.	2.0	139.	63.7
2.4			1.000	.91	.91	99.	94.	2.0	137.	60.6
4.3			1.200	1.09	1.09	98.	93.	2.5	141.	66.7
6.4			1.200	1.09	1.09	95.	91.	2.5	143.	66.8
9.0			1.300	1.18	1.18	93.	90.	3.0	142.	69.4
12.8			1.100	1.00	1.00	92.	88.	2.0	143.	63.9
23.2			1.300	1.18	1.18	91.	88.	2.8	139.	69.3
27.0			1.300	1.18	1.18	91.	86.	2.8	141.	69.4
29.6			1.500	1.37	1.37	89.	86.	3.0	140.	74.5
31.7			1.500	1.37	1.37	91.	84.	3.0	141.	74.5
33.6			1.700	1.53	1.53	88.	85.	3.2	140.	79.3
35.0E	1000.0	973.595	1.600	1.44	1.44	88.	83.	3.0	138.	76.8

ORSAT

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	9.6
	2	.6
	3	.5
	4	.0
ABSORBED H2O		8.7

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.618	5-5-92
METER	0.9915	5-5-92
PITOT	0.84	7-27-92

LEAK CHECK

		RATE	IN.HG
INITIAL	LT	0.02CFM	5.0
FINAL	LT	0.02CFM	5.0

CONTROL BOX NO. 3

PROBE NO. 5-4

NOZZLE NO. 11

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-2 11-4-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.07
B.	AVG. DELTA H (IN H2O)	1.19
C.	METER PRESSURE (IN. HG.)	29.16
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.14
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	596.9
K.	AVG. METER TEMP (DEG. R.)	548.3
L.	CONDENSATE VOL. (ML)	10.7
M.	ABSORBED H2O (ML)	8.7
N.	TOTAL H2O (ML)	19.4
O.	METERED GAS (CF)	40.346
P.	GAS METER CORRECTION	.9915
Q.	CORRECTED METERED GAS (CF)	40.003
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.974
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	40.977
T.	PERCENT H2O (100R/S)	2.38
	THEORETICAL MAXIMUM	18.69
	PERCENT WATER USED	2.38
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	37.565
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9762	X	44.0	=	.00
CO	.000	X	.9762	X	28.0	=	.00
O2	.205	X	.9762	X	32.0	=	6.40
N2	.795	X	.9762	X	28.2	=	21.89
H2O		X	T/100= .0238	X	18.0	=	.43
					MOLECULAR WEIGHT OF STACK GAS	=	28.72

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	69.21
Y.	AVG. FLOW RATE (CFM) (X*H*60)	29354.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	25293.
	STACK FLOW RATE (DRY)	24692.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	101.42

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-2-2 11-4-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00130	.00000	.00380

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00030	.00960

PARTICULATE	.01500
ALL MATLS.	.01500

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00221	.46854

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-3

DATE: 11-4-92
CHARGE #: ...150-300196
TEST #: CLR-1-3-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00405	.84282

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2. STACK CONDITIONS

FLOW (ACFM)	28359.
(SCFM)	24793.
MOISTURE CONTENT (%)	2.13
STACK TEMPERATURE (F)	128.3

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	29.641
PERCENT ISOKINETIC	105.70

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-2

1,2,3 BATTERY PEC
11-4-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
35.0S	900.0	686.110	1.300	.75	.75	65.	69.	2.5	123.	68.3
33.6			1.400	.81	.81	66.	71.	2.5	122.	70.8
31.7			1.400	.81	.81	67.	72.	2.5	123.	70.9
29.6			1.500	.87	.87	68.	74.	2.5	124.	73.4
27.0			1.500	.87	.87	70.	75.	2.5	128.	73.7
23.2			1.300	.75	.75	70.	75.	2.5	126.	68.5
12.8			1.000	.58	.58	71.	76.	2.0	127.	60.1
9.0			1.000	.58	.58	72.	77.	2.0	126.	60.1
6.4			1.300	.75	.75	74.	78.	2.5	127.	68.5
4.3			1.400	.81	.81	74.	79.	2.5	126.	71.1
2.4			1.300	.75	.75	75.	80.	2.0	128.	68.6
1.0S	912.0	692.036	1.200	.70	.70	75.	81.	2.0	127.	65.8
1.0S	912.0	692.036	1.200	.70	.70	77.	81.	2.5	127.	65.8
2.4			1.000	.59	.59	77.	82.	2.0	128.	60.2
4.3			1.100	.64	.64	78.	83.	2.0	130.	63.2
6.4			1.200	.70	.70	78.	83.	2.0	130.	66.0
9.0			1.300	.76	.76	79.	84.	2.5	131.	68.8
12.8			1.300	.76	.76	80.	85.	2.5	130.	68.7
23.2			1.300	.76	.76	80.	85.	2.5	132.	68.8
27.0			1.400	.82	.82	81.	86.	2.5	131.	71.4
29.6			1.500	.88	.88	82.	87.	2.5	133.	74.0
31.7			1.400	.82	.82	83.	87.	2.5	131.	71.4
33.6			1.300	.76	.76	83.	88.	2.5	133.	68.9
35.0S	924.0	698.105	1.300	.76	.76	83.	88.	2.5	131.	68.8
35.0S	924.0	698.105	1.300	.76	.76	83.	89.	2.5	133.	68.9
33.6			1.600	.94	.94	84.	89.	3.0	131.	76.3
31.7			1.500	.88	.88	84.	89.	3.0	132.	73.9
29.6			1.500	.88	.88	85.	89.	2.5	132.	73.9
27.0			1.500	.88	.88	83.	87.	2.5	116.	72.9
23.2			1.400	.82	.82	84.	87.	2.5	116.	70.4
12.8			1.300	.76	.76	84.	88.	2.5	120.	68.1
9.0			1.300	.76	.76	85.	88.	2.5	122.	68.2
6.4			1.400	.82	.82	85.	89.	2.5	125.	71.0
4.3			1.400	.84	.84	85.	89.	2.5	126.	71.1
2.4			1.200	.72	.72	85.	89.	2.0	125.	65.7
1.0S	936.0	704.533	1.200	.72	.72	85.	88.	2.5	125.	65.7
35.0E	936.0	704.533	1.400	.84	.84	85.	89.	2.5	126.	71.1
33.6			1.300	.78	.78	85.	88.	2.5	126.	68.5
31.7			1.300	.78	.78	85.	89.	3.0	130.	68.7
29.6			1.400	.84	.84	86.	89.	3.0	128.	71.2
27.0			1.300	.78	.78	85.	90.	2.5	130.	68.7
23.2			1.200	.71	.71	86.	89.	2.5	129.	66.0
12.8			.900	.53	.53	86.	89.	2.0	131.	57.2
9.0			.900	.53	.53	86.	89.	2.0	130.	57.2

6.4			1.000	.59	.59	86.	89.	2.0	132.	60.4
4.3			.900	.53	.53	86.	89.	2.0	131.	57.2
2.4			.800	.47	.47	86.	90.	2.0	133.	54.0
1.0E	948.0	710.343	.800	.47	.47	87.	90.	2.0	131.	53.9

6.4			1.400	.83	.83	57.	52.	3.0	102.	69.4
4.3			1.400	.83	.83	57.	52.	3.0	104.	69.6
2.4			1.200	.71	.71	58.	53.	2.5	103.	64.4
1.0S	948.0	742.230	1.100	.65	.65	58.	54.	2.5	102.	61.6

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-3-3 11-05-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.15
B.	AVG. DELTA H (IN H2O)	.75
C.	METER PRESSURE (IN. HG.)	29.21
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.22
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1580
I.	NOZZLE AREA (SQ. FT.)	.000136
J.	AVG. STACK TEMP (DEG. R.)	563.9
K.	AVG. METER TEMP (DEG. R.)	517.8
L.	CONDENSATE VOL. (ML)	5.3
M.	ABSORBED H2O (ML)	7.4
N.	TOTAL H2O (ML)	12.7
O.	METERED GAS (CF)	31.871
P.	GAS METER CORRECTION	1.0295
Q.	CORRECTED METERED GAS (CF)	32.811
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.601
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	33.412
T.	PERCENT H2O (100R/S)	1.80
	THEORETICAL MAXIMUM	7.46
	PERCENT WATER USED	1.80
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	32.683
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9820	X	44.0	=	.00
CO	.000	X	.9820	X	28.0	=	.00
O2	.205	X	.9820	X	32.0	=	6.44
N2	.795	X	.9820	X	28.2	=	22.02
H2O		X	T/100= .0180	X	18.0	=	.32
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	65.92
Y.	AVG. FLOW RATE (CFM) (X*H*60)	27958.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	25569.
	STACK FLOW RATE (DRY)	25109.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	112.62

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-3-3 11-05-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00130	.00000	.00180

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00100	.01070

PARTICULATE	.01480
ALL MATLS.	.01480

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00193	.41579

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1,2,3 BATTERY PEC STACK 1-4

DATE: 11-05-92
CHARGE #: ...150-300196
TEST #: CLR-1-4-3

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00184	.41363

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2. STACK CONDITIONS

FLOW (ACFM)	29036.
(SCFM)	26604.
MOISTURE CONTENT (%)	1.68
STACK TEMPERATURE (F)	102.8

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	30.884
PERCENT ISOKINETIC	102.16

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-3 11-05-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
35.0E	900.0	954.035	1.600	.80	.80	83.	56.	3.0	98.	74.0
33.6			1.600	.84	.85	67.	57.	3.0	104.	74.4
31.7			1.600	.84	.85	65.	58.	3.0	101.	74.2
29.6			1.500	.79	.80	66.	58.	3.0	101.	71.8
27.0			1.400	.73	.75	65.	59.	2.5	102.	69.4
23.2			1.300	.68	.70	68.	60.	2.5	103.	67.0
12.8			1.200	.63	.65	65.	58.	2.5	104.	64.4
9.0			1.300	.68	.70	64.	57.	2.5	102.	66.9
6.4			1.300	.68	.70	63.	56.	2.5	106.	67.1
4.3			1.300	.68	.70	64.	57.	2.5	105.	67.1
2.4			1.200	.63	.65	63.	56.	2.5	104.	64.4
1.0E	912.0	960.482	1.200	.63	.65	62.	56.	2.5	104.	64.4
1.0E	912.0	960.482	1.200	.63	.65	64.	56.	2.5	103.	64.3
2.4			1.100	.58	.60	67.	58.	2.2	106.	61.8
4.3			1.200	.63	.65	66.	58.	2.5	107.	64.6
6.4			1.300	.68	.70	68.	59.	2.7	108.	67.3
9.0			1.200	.63	.65	64.	57.	2.5	108.	64.6
12.8			1.200	.63	.65	63.	55.	2.5	108.	64.6
23.2			1.200	.63	.65	63.	56.	2.5	108.	64.6
27.0			1.300	.68	.68	65.	56.	2.5	111.	67.4
29.6			1.500	.79	.80	65.	56.	3.0	108.	72.3
31.7			1.400	.73	.75	67.	57.	3.0	107.	69.7
33.6			1.800	.94	.95	67.	56.	3.2	106.	79.0
35.0E	924.0	966.889	1.800	.94	.95	67.	57.	3.5	108.	79.1
35.0E	924.0	966.889	1.800	.94	.95	68.	58.	3.5	107.	79.1
33.6			1.800	.94	.95	67.	57.	3.5	109.	79.2
31.7			1.800	.94	.95	66.	57.	3.5	108.	79.1
29.6			1.700	.89	.90	66.	58.	3.2	106.	76.8
27.0			1.300	.68	.70	67.	58.	2.7	106.	67.1
23.2			1.300	.68	.70	68.	58.	3.0	105.	67.1
12.8			1.100	.58	.60	67.	59.	2.5	107.	61.8
9.0			1.300	.68	.70	67.	58.	3.0	105.	67.1
6.4			1.200	.63	.65	68.	58.	2.5	106.	64.5
4.3			1.200	.63	.65	68.	58.	2.5	105.	64.5
2.4			1.100	.58	.60	68.	58.	2.5	103.	61.6
1.0E	936.0	973.176	1.200	.63	.65	67.	57.	2.5	101.	64.2
35.0S	936.0	973.176	1.600	.84	.85	66.	57.	3.0	103.	74.3
33.6			1.600	.84	.85	63.	56.	3.0	105.	74.4
31.7			1.600	.84	.85	64.	57.	3.0	104.	74.4
29.6			1.700	.89	.90	57.	51.	3.0	95.	76.0
27.0			1.600	.84	.85	58.	51.	3.0	96.	73.8
23.2			1.300	.68	.70	58.	51.	3.0	98.	66.7
12.8			1.000	.52	.50	60.	52.	2.0	99.	58.5
9.0			1.200	.63	.65	58.	52.	2.5	100.	64.2

6.4		1.200	.63	.65	59.	52.	2.5	101.	64.2
4.3		1.200	.63	.65	60.	52.	2.5	99.	64.1
2.4		1.100	.58	.60	62.	53.	2.2	91.	60.9
1.0S	948.0 979.309	1.100	.58	.60	61.	53.	2.0	93.	61.0

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-3 11-05-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
1.0S	948.0	979.309	1.000	.52	.50	60.	53.	2.0	92.	58.2
2.4			1.100	.58	.60	59.	52.	2.5	93.	61.0
4.3			1.300	.68	.70	61.	51.	2.5	102.	66.9
6.4			1.300	.68	.70	59.	50.	2.5	103.	67.0
9.0			1.200	.63	.65	59.	50.	2.5	102.	64.3
12.8			1.200	.63	.65	60.	50.	2.5	102.	64.3
23.2			1.200	.63	.65	59.	51.	2.5	102.	64.3
27.0			1.500	.79	.80	60.	52.	3.0	102.	71.9
29.6			1.500	.79	.80	62.	52.	3.0	101.	71.8
31.7			1.700	.89	.90	62.	53.	3.0	99.	76.3
33.6			1.700	.89	.90	62.	53.	3.0	99.	76.3
35.0S	1000.0	985.414	1.700	.89	.90	62.	54.	3.2	100.	76.4

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO. 1	3.2
2	.2
3	.1
4	.0
ABSORBED H2O	7.7

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.535	09-14-91
METER	1.0515	09-14-92
PITOT	0.84	08-24-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL LT	0.02CFM	5.0

CONTROL BOX NO. 7 PROBE NO. 5-5 NOZZLE NO. 18

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-3 11-05-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.15
B.	AVG. DELTA H (IN H2O)	.73
C.	METER PRESSURE (IN. HG.)	29.20
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.22
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1580
I.	NOZZLE AREA (SQ. FT.)	.000136
J.	AVG. STACK TEMP (DEG. R.)	562.8
K.	AVG. METER TEMP (DEG. R.)	519.7
L.	CONDENSATE VOL. (ML)	3.5
M.	ABSORBED H2O (ML)	7.7
N.	TOTAL H2O (ML)	11.2
O.	METERED GAS (CF)	31.379
P.	GAS METER CORRECTION	.9918
Q.	CORRECTED METERED GAS (CF)	31.122
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.532
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	31.654
T.	PERCENT H2O (100R/S)	1.68
	THEORETICAL MAXIMUM	7.24
	PERCENT WATER USED	1.68
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	30.884
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100		MOISTURE CORRECTION (1-T/100)		MOLECULAR WEIGHT		WEIGHT PER MOLE
CO2	.000	X	.9832	X	44.0	=	.00
CO	.000	X	.9832	X	28.0	=	.00
O2	.205	X	.9832	X	32.0	=	6.45
N2	.795	X	.9832	X	28.2	=	22.04
H2O		X	T/100= .0168	X	18.0	=	.30
					MOLECULAR WEIGHT OF STACK GAS	=	28.79

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	68.46
Y.	AVG. FLOW RATE (CFM) (X*H*60)	29036.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	26604.
	STACK FLOW RATE (DRY)	26157.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	102.16

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1,2,3 BATTERY PEC
CLR-1-4-3 11-05-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00120	.00000	.00220

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00030	.00530

PARTICULATE	.00900
ALL MATLS.	.00900

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00184	.41363

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations