Ball Incon

April 13, 1989

PARTICULATE MATTER SOURCE TEST

January 14, 1987

Conducted by: American Services Association
Furnace #3 (formerly furnace #4)
Ball-InCon Northwestern Glass Plant
Seattle, Washington

		Grain Loading (gr/dscf)		
Test By	Date	Actual	Corrected Dilution Air	Opacity
ASA	1-14-87	.022	.045	10.5

Note: This source test shows that glass furnace #3 can stay within PSAPCA's .05 grain loading standard at an observed opacity of 10.5%. Thus, the proposed 5% opacity limit is not an accurate indication of a particulate emission violation.

ATMOSPHERIC EMISSION EVALUATION

INCON PACKAGING

Northwestern Glass Plant

Furnace #4 Pre PSAPCA Test

January 14, 1987

AMERICAN SERVICES ASSOCIATES

15049 Bel-Red Road, Bellevue, WA 98007 (206)641-5130

American Services Associates
Consultants in Air, Water, Energy, Hygiene & Management

January 15, 1987

PURPOSE

This atmospheric emission evaluation was performed on the #4 glass furnace at the INCON PACKAGING Northwestern Glass Plant in Seattle, Washington. This evaluation was performed to check the particulate concentration prior to a particulate compliance emission test to be performed by the PUGET SOUND AIR POLLUTION CONTROL AGENCY (PSAPCA) on January 21, 1987. Mr.Doug Coburn of INCON PACKAGING was the Client Project Manager and Messrs. Wesley D. Snowden and Thomas W. Valentine of AMERICAN SERVICES ASSOCIATES (ASA) performed this evaluation on January 14, 1987.

SUMMARY

Particulate atmospheric emissions were found to be 0.045 and 0.036 grains per dry standard cubic foot (gr/dscf). The particulate emissions were sampled at the exhaust stack. The reported particulate emission concentrations were adjusted to the furnace outlet by multiplying by the ratio of the stack standard airflow divided by the furnace standard airflow. The furnace standard airflow was calculated by subtracting the standard stack airflow from the ejector standard airflow. The ejector standard airflow on this project was found to be 12,353 scfm and the total airflow from the stack was found to be 24,574 and 24,863 scfm for Run #'s 1 & 2 respectively. The samples reported herein were collected from the north sample port.

AMERICAN SERVICES ASSOCIATES

Wesley D. Snowden, P.E.

15049 Bel-Red Road, Suite 100 Bellevue, Washington 98007 (206) 641-5130

DISCUSSION

The particulate emissions from the #4 glass furnace were collected from the outward-upward tapered circular stack which was fourty-eight and three-quarters inch (48.75) inches in diameter at the north sample port where the samples reported herein were collected. There was approximately thirty (30) feet of inward-downward tapered stack ahead of (i.e. below) the north sample port and approximately fifteen (15) feet of outward tapered stack behind (i.e. above) the single north sample port utilized on this project. These samples were collected at a single point at fourty (40) inches inside the east sample port because the airflow was uniform across the cross-section of the stack and the samples reported herein were of a preliminary nature. The particulate concentrations determined from samples collected from the north sample port on this furnace are expected to be representative of the true particulate concentrations on Furnace #4. ??

Particulate emissions from the 12/14/87 ASA samples from Furnace #4 are detailed in Table 1. Furnace #4 was operating at a production rate of 107.2 tons per day during this evaluation. The production rate of Furnace #4 was provided by Mr. Coburn. The production rate calculation is included ahead of the field data sheets in this report. The particulate reported on this project was determined from the particulate collected on the filter and in the sampling probe of the samples. The total particulate utilized in the emissions reported herein was based upon the particulate collected in the "front-half" times a factor of 1.10 to account for the particulate collected in the "back-half" of the sampling train. The ten (10) percent estimated to be collected in the "back-half" was estimated from previous ASA samples collected from Glass Furnace #'s 5 & 6.

Table 1. Particulate Emissions-Furnace #4 INCON PACKAGING 12/14/87

Sample Date	Run No.	Stack Temp. (deg. F.)	Moisture (% by vol)	Airflow (dscfm)	Part. Conc. (gr/dscf*)	PMR (lb/hr)
1/14/87	1	326	4.7	24,574	0.045	4.7
1/14/87	2	327	4.8	24,863	0.035 .036	3.9
Average	-	326	4.7	24,718	0.040	4.3

.1616/hr

* Particulate concentration in grains per dry standard cubic foot (gr/dscf) is reported without the effect of the ejector air which was determined to be 12,353 scfm on 1/14/87.

The single traverse point utilized for collecting these samples from the north sample port was monitored at five (5) minute intervals for determining airflow variationa with time. Each sample was collected over fourty a (40) minute period to sample over two (2) reversal periods of the heat exchanger system. A reversal occured in the heat exchanger system at twenty (20) minute intervals.

The sampling train utilized on this sampling project was designed by the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) and designated Method 5. The EPA-Method 5 sampling train is divided into two (2) sections. The first section is classified as the "front-half" and includes the particulate collected in the nozzle, sample probe, pre-filter glassware and filter. The second section or "back-half" of the EPA Method 5 sampling train includes the particulate collected in the condenser section which follows the "front-half" of the sampling train. A schematic of the EPA sampling train utilized on this sampling project is included in this report. The particulate reported on this project was that collected in the "front-half" plus an estimate of the "back-half" of the EPA Method 5 sampling train. The "back-half" portion of the 6/5/86 particulate were found to contain

7.7% of the "front-half" sample in the "back-half" of the EPA Method 5 sam-
g train.

This report is arranged hereafter in a manner in which the data can be most readily used as follows:

- "EPA Method 5 Summary" which summarizes the test results
- "Terminology & Equations" used in calculating the results
- "Procedure" illustrating how samples are typically collected
- "PMR Calculation" illustrates how calculations are performed for non-isokinetics
- "EPA Method 5 Particulate Sampling Train" illustrates sample train parts
- "Clean-up and Analysis" procedures utilized on this project
- "Operating Data" Log for Furnace #4 on 1/14/87
- "EPA Method-5 Particulates" calculation sheet utilizes field traverse
ata sheet for input to the computer with one output sheet per run
- "Particulate Calculation" utilizes laboratory data and calculates total particulate with one sheet per Run and sequentially placed with the above
- "Traverse Sampling Data Sheet" contains data collected from the field
- "Calibration Records" of the equipment utilized on this project. Spot calibrations are performed before and after the field work. If within 2% no changes are made in the calibration records.

AMERICAN SERVICES ASSOCIATES E.P.A. METHOD 5 SUMMARY

JOB NAME: INCON PACKAGING Northwestern Glass Plant

SUBJECT: Furnace #4 Stack Pre PSAPCA Emission Test

	RUN # 1 1/14/87	RUN # 2 1/14/87	RUN # 0
LAB NUMBER	1-7	2-7	
24 HOUR START TIME	1311.000	1423.000	0.000
24 HOUR STOP TIME	1351.000	1503.000	0.000
ELAPSED SAMPLING TIME, MIN	40.000	40.000	0.000
VOLUME SAMPLED, CU FT	25.537	24.240	0.000
VOLUME SAMPLED STANDARD, CU FT	27.166	25.553	0.000
MOISTURE CONTENT OF STACK GAS, %	4.721	4.821	0.000
MOLEC. WT OF STACK GAS, LB/LB MOLE	28.519	28.521	0.000
STACK PRESSURE, IN HG	30.857	30.857	0.000
PITOT COEFFICIENT	0.827	0.836	0.000
VELOCITY OF STACK GAS, FT/SEC	47.853	48.527	0.000
STACK AREA, SQR FT	12.962	12.962	0.000
STACK GAS FLOW RATE, ACTUAL CU FT/MIN, WET	37,216	37,741	0
TEMPERATURE OF STACK, DEG F	326	327	0
STACK GAS FLOW RATE, STD CU FT/MIN, DRY	24,574	24,863	0
DIAMETER OF NOZZLE, INCHES	0.250	0.250	0.000
PERCENT ISOKINETIC OF TEST, %	105.090	97.701	0.000
WEIGHT PARTICULATE COLLECTED, MG	38.800	30.500	0.000
PARTICULATE CONCENTRATION, GRAINS/STD CU FT	0.022	0.018	0.000
PERCENT CO2 OF STACK GAS FOR 12% CORRECTION	5.970	6.030	0.000
PART. CONC AT 12% CO2, GR/STD CU FT	0.044	0.037	0.000
POLLUTANT MASS RATE (CON. METHOD), LB/HR	4.633	3.917	0.000
POLLUTANT MASS RATE (AREA RAT. METHOD), LB/HR	4.869	3.827	0.000
POLLUTANT MASS RATE (AVERAGE OF ABOVE), LB/HR	4.751	3.872	0.000
PARTICULATE CONCENTRATION (CORRECTED) GR/SCF	0.045	0.036	0.000

OPERATING DATA - TANK #4 STACK TEST JANUARY 14, 1997

TESTING DONE BY AMERICAN SERVICE ASSOCIATES
1. WES SNOWDEN
2. TOM VALENTINE

American Services Associates
Consultants in Air, Water, Energy, Hygiene & Management
WESLEY D. SNOWDEN, P.E.
PRESIDENT

A. FURNACE TONNAGE PULLED: 107.2 TONS/24 HRS.

B. GAS DURING TEST-CFH: 22900 - 23000

C. COMBUSTION AIR - CFH: 280000

D. FURNACE PRESSURE: .02

E. AMOUNT OF CULLET IN BATCH: 35 to 50% REOSTAT AT SILO

F. ELECTRIC BOOST USED - KW: 1100 to 1200

WATER ON WETTING SCREW: .1 GAL/MIN.

H. VOB INFO. FROM EACH SHOP

41 SHOP: VOB No: 709
WEIGHT: 46 1/2 OZ.
SPEED: 31/MIN.
TONS/24HRS: 64.9

42 SHOP: VOB No.: 707
WEIGHT: 4 7/8 OZ.
SPEED: 193/MIN.
TONS/24HRS: 42.3

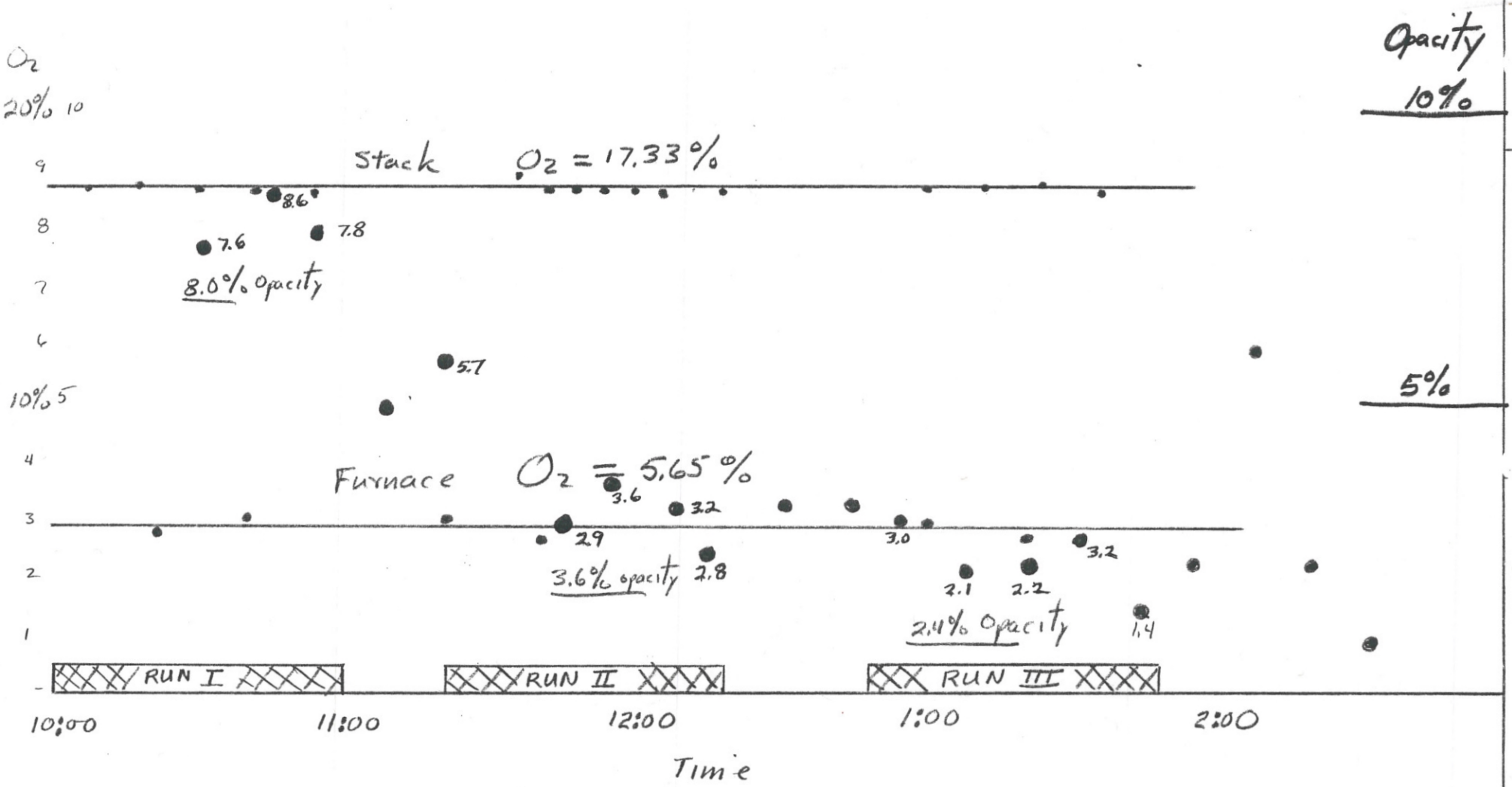
Incon Packaging
Glass Furnaces
Performance Standard

New Source Performance Standard if applied to this plant would be 1.0×10^{-4} lb/lb

	Furnaces		
	~~#4~~ 3	~~#5~~ 4	~~#6~~ 5
Emission lb/hr	3.50	3.59	5.79
Process lb/hr	7,075	10,433	8,992
$\frac{\text{lb emission}}{\text{lb process}}$ =	4.95×10^{-4}	3.44×10^{-4}	6.44×10^{-4}
lb/hr	.99	.688	1.27

AMPAD 22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

1-28-87 Furnace #3 (~~New #4~~)



		Sampled		Not ISO		
#3	1-28-87	STD Vol	33,300	56,700	33,385	CF
		Probe	19.3	1.8	3.0	mg
		Filter	18.8	28.7	9.2	
		Org	3.6	4.7	4.6	
		Inorg	28.8	20.4	24.2	

17,000 CFH × 1090 Btu/CF = 18,530,000 Btu/hr
900 KWH × 3413 Btu/hr / KWH = 3,071,700
} 21,601,700 Btu/hr

7075 lb/hr Glass — 3053 Btu/lb Glass

Excess O_2 5.5%

#4	6-5-86	26.351	24.524	25.102
		7.4	3.7	5.4
		40.8	8.8	39.3
		12.1	15.1	4.5
		5.1	5.9	3.5

18,500 CFH × 1090 = 20,165,000
875 KWH × 3413 = 2,986,375
} 23,151,375 Btu/hr

10,433 lb/hr Glass — 2219 Btu/lb Glass

Excess O_2 6.5% 6.2% 7.0%

#5	10-7-86	40.976	36.847	39.542
		2.9	4.0	4.1
		47.2	42.9	45.9
		1.6	2.8	1.4
		35.5	56.8	47.3

27,000 CFH x 1090 — 29,430,000

1035 KWH x 3413 — 3,532,455

8992 lb/hr

32,962,455

3665 Btu/lb Glass

#4 Furnace Operating Data
January 28, 1987

(FURNACE CAPACITY IS 130 TONS MAX.)

Total load: 84.9 TONS/24 HRS. OR 3.5375 TONS/HR.

Batch Composition - Smoke

Material	Amount	Percentage of Total
Lane Mountain Sand -	2327 lbs	47.26 %
Emmett Sand -	787 lbs	15.98 %
Soda Ash -	955 lbs	19.40 %
Limestone -	820 lbs	16.65 %
Salt Cake -	29 lbs - 6 oz.	.6 %
Carbocite -	1 lb - 10 oz.	.03 %
Nickel Oxide -	3 lbs - 10 oz.	.07 %
Total -	4923 lbs - 10 oz.	

Cullet: 35% to 50% (Cullet is not weighed)

Type and Quanity of bottles

Shop #41	Shop #42
Job #624	Job #624
750 ML WINE	750 ML WINE
49 bottles/minute	40 bottles/minute

(over)

Gas used: 17000 CFH

Electricity used: 900 KW

Percent Excess Oxygen: FIRING SOUTH TO NORTH 5.4% AVERAGE
FIRING NORTH TO SOUTH 5.9% AVERAGE

New #

INCON PACKAGING

SOURCE SUMMARY

#3 1-28-87
~~#4~~ Furnace

Run	Conc. gr/dscf	Conc. Ratio	Conc. w/o Dilution	Stack O2%	Conc. @ 7%O2
I	.0291	2.68	.078	17.3	.110
II	(.0199)	2.89	(.057)	17.4	(.077)
III	.0196	3.06	.060	17.3	.074
			.069		.092

#4 6-5-86
~~#5~~ Furnace

Run	Conc. gr/dscf	Conc. Ratio	Conc. w/o Dilution	Stack O2%	Conc. @ 7%O2
I	.0382	3.39	.130	16.0	.106
II	.0210	2.84	.060	16.0	.059
III	.0290	2.64	.077	16.0	.081
			.089		.082

#5 10-7-86
~~#6~~ Furnace

Run	Conc. gr/dscf	Conc. Ratio	Conc. w/o Dilution	Stack O2%	Conc. @ 7%O2
I	.0328	1.63	.053	13.6	.062
II	.0445	1.65	.074	13.2	.080
III	.0384	1.60	.062	13.6	.073
			.063		.072

PUGET SOUND AIR POLLUTION CONTROL AGENCY

ENGINEERING DIVISION

SOURCE TEST REPORT NO. 87-1

INCON PACKAGING

GLASS FURNACE NO. ~~4~~ 3

JANUARY 28, 1987

RESULTS

The concentrations on Run I and Run III were .0781 and .0600 grains per dry standard cubic foot (gr/dscf), adjusted for dilution air. During Run II the stack velocity head reading on the Magnehelic was not consistant with Run I and III. The emission rates for Run I and III were 4.30 and 2.70 pounds per hour(lb/hr). The average isokinetic sampling rate was 107.5%. The dilution flow was measured and used to correct the stack flow and stack sample volume. Regulation I, Section 9.09(c) and (d)(1) allows 0.10 gr/dscf and 9.57 lb/hr. The transmissometer readings indicate that for the stack concentration to remain consistantly below the standard, the opacity should not exceed about 10%.

The concentration in the stack corrected to 7% oxygen averaged 0.0922 gr/dscf. The New Source Performance Standard, if applied to this source, would be 1.0 x 10-4 lb/lb. The measured rate was 5.0 x 10-4 lb/lb.

Run II

During Run II, the pitot tube line became partially plugged with moisture. This made the stack appear to have a low flow rate (17,759 CFM). The flow rates for Run I and Run III were measured correctly and were about the same value (24,175 & 22,239 CFM). The average flow rate of 23,207 CFM would likely be close to the true flow rate during Run II. The isokinetic sampling rate for Run II would, therefore, have been about 76.5%. The concentration of .0152 gr/dscf on Run II could be adjusted to 100% isokinetic rate by .0152/76.5% = .0199 gr/dscf. The dilution factor for Run II was 2.89 so the corrected stack concentration for Run II was about .058 gr/dscf.

SOURCE TEST DATA SUMMARY

Plant Name Incon Packaging
Date Tested 1/28/87
Location 5801 E. Marginal Way S.
Seattle, WA 98134
Test Personnel Fred Austin
James Nolan
Tom Harris
Equipment Glass Furnace No. ~~4~~ 3
Test Number 87-1
Fuel Usage NG (17000 CFH); Elec 900 KW
Registration No. 11656
Control None
Fuel Type NG & Elec
Operational Level 84.9 T/24 hr = 7075 #/hr
130 T/24 hr
Pollutant Particulate
Method V
Stack Height 70'
Stack Diameter 44"
Duct Diameters Downstream from Flow Disturbance >8 diameters
Duct Diameters Upstream from Flow Disturbance 3 diameters
Nozzle Size 1/4 & 3/8 **Probe Length** 5'
Number of Sampling Points 20 **Sampling Time per Point** 5 min/pt
Number of Traverses 12 points **Port Location** N side

	Run 1	Run 2	Run 3	Average
Sample Box Temperate °F	243	(225)	256	250
Impinger Temperature °F	46	(43)	41	44
Gas Composition CO_2%	1.6	(1.8)	1.9	1.75
CO%	0.0	(0.0)	0.0	0.0
O_2%	17.3	(17.4)	17.3	17.3
H_2O%	4.06	(2.50)	3.66	3.86
Excess Air %	0.0	(0.0)	0.0	0.0
Gas Flow Data				
Stack Temperature °F	245	(244)	239	242
Stack Velocity FPS	38.2	(28.0)	35.1	36.7
Flow Rate CFM	24,175	(17,759)	22,239	23,207
Sample Information				
Volume Sampled CF	36.90	(56.09)	32.02	34.46
Sample Time Min.	60	(60)	60	60
Isokinetic Rate %	111.8	(99.4)	103.5	107.7
Time of Test Start	10:00	(11:20)	12:50	
Finish	11:00	(12:20)	1:50	
Pollution Results				
Conc. Gr/SDCF (~~12% CO_2~~)	.0291	(.0152)*	.0196	.0244
Emission Rate lb/hr	4.30	(1.65)*	2.70	3.5

* Run II experienced sampling problems and is not included.

PUGET SOUND AIR POL JTION CONTROL AGENCY
Run on MON, FEB 9, 1987, 3:52 PM
Prepared by FRED AUSTIN

INCON PACKAGING, FURNACE NO ~~4~~ 3, 1-28-87,RUN I

Stack Temperature	244.700	F
Stack Static Pressure	-.500	inches H20
Orifice Pressure Drop	.470	inches H20
Metered Volume	36.900	cubic ft
Test Duration	60.000	minutes
Meter Temperature	58.900	F
Impinger Temperature	45.600	F
Standard Dry Volume	37.279	cubic ft
Volume Liquid Condensate	33.300	milliliters
Water Vapor STD Conditions	1.578	cubic ft
Standard Volume Sampled	38.858	cubic ft
Percent Moisture	4.062	percent
Molecular Weight Stack Gas	28.503	lb/lb mole
Stack Gas Flow Rate	24175.	actual cfm
Stack Velocity	38.177	ft/second
Sampling Rate in Nozzle	.648	actual cfm
Filter and Cyclone Catch	38.100	milligrams
Impinger Catch	32.400	milligrams
Front Half Conc/SDCF	.0157	gr/SDCF
Concentration / SDCF	.0291	gr/SDCF
Percent Isokinetic Rate	111.830	percent
Process Weight	7075.0	lb/hr
Minimum Ringlemann No.	.90	
Maximum Ringlemann No.	5.70	
Average Ringlemann No.	2.90	
Stack Diameter	44.000	inches
Stack Height	70.000	feet
Barometric Pressure	29.560	inches Hg
Percent CO2	1.600	percent

Allowed Emission Rate	10.	lb/hr
Actual Emission Rate	4.30	lb/hr
Allowed Grain Loading	.100	gr/SDCF
Actual Grain Loading	.0291	gr/SDCF [x 2.681]
	= .078	gr/SDCF

H20 =	.7	lb mole
CO2 =	.7	lb mole
CO =	.0	lb mole
O2 =	5.3	lb mole
N2 =	21.8	lb mole

Item	Weight	% of Total
Upstream Washings / Cyclone Wt	19.30	27.4
Filter Weight	18.80	26.7
Front Half Total	38.10	54.0
Downstream Washings	.00	.0
Organic Weight	3.60	5.1
Inorganic Weight	28.80	40.9
Back Half Total	32.40	46.0

PUGET SOUND AIR POL JTION CONTROL AGENCY
Run on MON, FEB 9, 1987, 3:52 PM
Prepared by FRED AUSTIN

INCON PACKAGING, FURNACE NO ~~4~~ 3, 1-28-87,RUN II

Stack Temperature	243.700	F
Stack Static Pressure	-.500	inches H20
Orifice Pressure Drop	1.490	inches H20
Metered Volume	56.090	cubic ft
Test Duration	60.000	minutes
Meter Temperature	64.400	F
Impinger Temperature	43.000	F
Standard Dry Volume	56.214	cubic ft
Volume Liquid Condensate	52.700	milliliters
Water Vapor STD Conditions	2.498	cubic ft
Standard Volume Sampled	58.712	cubic ft
Percent Moisture	4.255	percent
Molecular Weight Stack Gas	28.517	lb/lb mole
Stack Gas Flow Rate	17759.	actual cfm
Stack Velocity	28.044	ft/second
Sampling Rate in Nozzle	.979	actual cfm
Filter and Cyclone Catch	30.500	milligrams
Impinger Catch	25.100	milligrams
Front Half Conc/SDCF	.0084	gr/SDCF
Concentration / SDCF	.0152	gr/SDCF
Percent Isokinetic Rate	99.417	percent
Process Weight	7075.0	lb/hr
Minimum Ringlemann No.	.90	
Maximum Ringlemann No.	5.70	
Average Ringlemann No.	2.90	
Stack Diameter	44.000	inches
Stack Height	70.000	feet
Barometric Pressure	29.560	inches Hg
Percent CO2	1.800	percent

Allowed Emission Rate	10.	lb/hr
Actual Emission Rate	1.65	lb/hr
Allowed Grain Loading	.100	gr/SDCF
Actual Grain Loading	.0152	gr/SDCF [x 2.890]

(Estimated = .057 gr/SDCF)

H20 =	.8	lb mole
CO2 =	.8	lb mole
CO =	.0	lb mole
O2 =	5.3	lb mole
N2 =	21.7	lb mole

Item	Weight	% of Total
Upstream Washings / Cyclone Wt	1.80	3.2
Filter Weight	28.70	51.6
Front Half Total	30.50	54.9
Downstream Washings	.00	.0
Organic Weight	4.70	8.5
Inorganic Weight	20.40	36.7
Back Half Total	25.10	45.1

PUGET SOUND AIR POL JTION CONTROL AGENCY
Run on MON, FEB 9, 1987, 3:52 PM
Prepared by FRED AUSTIN

INCON PACKAGING, FURNACE NO ~~4~~ 3, 1-28-87,RUNIII

Stack Temperature	238.600	F
Stack Static Pressure	-.500	inches H20
Orifice Pressure Drop	.450	inches H20
Metered Volume	32.020	cubic ft
Test Duration	60.000	minutes
Meter Temperature	61.900	F
Impinger Temperature	41.000	F
Standard Dry Volume	32.162	cubic ft
Volume Liquid Condensate	25.800	milliliters
Water Vapor STD Conditions	1.223	cubic ft
Standard Volume Sampled	33.385	cubic ft
Percent Moisture	3.663	percent
Molecular Weight Stack Gas	28.593	lb/lb mole
Stack Gas Flow Rate	22239.	actual cfm
Stack Velocity	35.119	ft/second
Sampling Rate in Nozzle	.556	actual cfm
Filter and Cyclone Catch	12.200	milligrams
Impinger Catch	28.800	milligrams
Front Half Conc/SDCF	.0058	gr/SDCF
Concentration / SDCF	.0196	gr/SDCF
Percent Isokinetic Rate	103.542	percent
Process Weight	7075.0	lb/hr
Minimum Ringlemann No.	.90	
Maximum Ringlemann No.	5.70	
Average Ringlemann No.	2.90	
Stack Diameter	44.000	inches
Stack Height	70.000	feet
Barometric Pressure	29.560	inches Hg
Percent CO2	1.900	percent

Allowed Emission Rate	10.	lb/hr
Actual Emission Rate	2.70	lb/hr
Allowed Grain Loading	.100	gr/SDCF
Actual Grain Loading	.0196	gr/SDCF [x 3.058]
	= .060	gr/SDCF

H20 =	.7	lb mole
CO2 =	.8	lb mole
CO =	.0	lb mole
O2 =	5.3	lb mole
N2 =	21.8	lb mole

Item	Weight	% of Total
Upstream Washings / Cyclone Wt	3.00	7.3
Filter Weight	9.20	22.4
Front Half Total	12.20	29.8
Downstream Washings	.00	.0
Organic Weight	4.60	11.2
Inorganic Weight	24.20	59.0
Back Half Total	28.80	70.2

PUGET SOUND AIR POL TION CONTROL AGENCY
Run on MON, FEB 9, 1987, 3:52 PM
Prepared by FRED AUSTIN
INCON PACKAGING, FURNACE NO ~~4~~ 3, 1-28-87, RUN I
INCON PACKAGING, FURNACE NO ~~4~~, 1-28-87, RUN II
INCON PACKAGING, FURNACE NO ~~4~~, 1-28-87, RUNIII

AVERAGE RATE AND LOADING VALUES RUN I & III

Allowed Emission Rate	3.50	lb/hr
Actual Grain Loading	.0267	gr/SDCF
Corrected for dilution	.0790	gr/SDCF