Georgia-Pacific

Palatka Pulp and Paper Operations
Consumer Products Division

P.O. Box 919
Palatka, FL 32178-0919
(386) 325-2001

December 13, 2002

Mr. Christopher L. Kirts
District Air Program Administrator
State of Florida
Department of Environmental Protection
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

Re: Bleach Plant Compliance Test – October 2002
Georgia-Pacific Palatka Operations

Dear Mr. Kirts:

Continuous monitoring system (CMS) parameters, monitoring frequencies, averaging times and the rationale for selecting the CMS are required to be submitted for approval pursuant to 40 CFR 63.453 (n). This information has been updated from a previous submittal (letter dated October 25, 2002, Appendix A) reflecting recent compliance testing conducted in October 2002, which has been summarized and included in this correspondence for your review. (A copy of the test report is included as an attachment.)

The Bleach Plant scrubber collects and treats emissions from the No. 3 Bleach Plant as well as emissions from the R8/10 Chlorine Dioxide Generator. The pH of the gas scrubber effluent, the scrubber liquid influent flow rate, and the fan amps were continuously recorded during the testing. We have analyzed this information pursuant to 40 CFR 63.453 (n) as follows.

Although all runs demonstrated compliance with 40 CFR 63.445 (c) (2) by a considerable margin, four of the six runs were selected to develop operating parameter values providing the greatest operating flexibility while also demonstrating continuous compliance (see Table 1).

The average pH during these runs was 9.2 with a minimum during one run of 9.0 (see Figures 1 and 2 in Appendix B). We, therefore, propose for the Administrator's approval that we operate the scrubber effluent pH above a minimum of 9.0 as a rolling 3-hour average with a monitoring frequency of at least once every 15 minutes (see Table 2). We believe the monitoring frequency of once every 15 minutes to be appropriate because the standard deviation of the data was quite low. The average flow of the scrubber medium was 1257 gpm with a minimum of 1252 gpm. By the same rationale we propose for the Administrator's approval that we operate above a minimum flow of 1252 as a rolling 3-hour average with the same monitoring frequency described above.

Region 4 previously approved monitoring fan amperage of the bleaching system vent gas fan as an alternative monitoring parameter to 40 CFR 63.453 (c)(2) (letter dated December 22,

2000). The mill continuously monitors fan amperage and displays it as fan load on its Distributed Control System (DCS). Fan load during the time of the testing was calculated as follows (Equation 1).

$$\%Load = \frac{measured\ amps}{0.701 * full\ load\ amps} * 100 = \frac{measured\ amps}{0.701 * 25.7} * 100 = \frac{measured\ amps}{18.02} * 100$$

Please note 0.701 represents a conversion factor for ranging of the signal from the field instrumentation to the DCS.

Figure 3 reflects the fan load/amperage when the Bleach Plant goes down. Because the mill continues to run the fan the amperage goes up although the process is down. We have also taken all the belts off the fan motor to determine its "no load" amperage, 9.8 amps. Because of data variability we propose to operate the fan such that the amperage is below 19.3 and above 10.8 amps as a rolling 3-hour average. This will be converted to fan load for convenience of the operators. Note that this calculation has been simplified according to the following (Equation 2) and became effective on December 5, 2002 at 13:05.

$$\%Load = \frac{measured\ amps}{full\ load\ amps} * 100 = \frac{measured\ amps}{25.7} * 100$$

Again, we propose to monitor fan amperage/load at least once every 15 minutes. In all cases, pH, flow, and % Load data will be transferred to a plant wide information (PI) system for record keeping purposes.

We respectfully request written approval as required by 40 CFR 63.453 (n). If you have any questions about our rationale please do not hesitate to call me at (386) 329-0918.

Sincerely,

Theodore D. Kennedy

Theodore D. Kennedy
Vice President

tk

Enclosures

cc: Lee Page, EPA Region 4
William Jernigan, Atlanta
Scott Matchett, Atlanta
Cindy Barlow
Nickolai Selbach

Appendix A

Letter Dated October 25, 2002

Georgia-Pacific

Palatka Pulp and Paper Operations
Consumer Products Division

P.O. Box 919
Palatka, FL 32178-0919
(386) 325-2001

October 25, 2002

Mr. Mort Benjamin
Air Compliance Supervisor
Northeast District
Florida Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7577

Re: Cluster Rule CMS Parameters (40 CFR 63.453(n))
Georgia-Pacific Palatka Operations
1070005

Dear Mr. Benjamin:

During a recent review of recordkeeping and reporting procedures we discovered that continuous monitoring system (CMS) parameters, monitoring frequencies, averaging times and the rationale for choosing the CMS were not submitted in a readable, concise format and summary to the Department pursuant to 40 CFR 63.453 (n).

The CMS listed in the attached tables were chosen because they indicate when there is a breach of the Closed Vent Collection System, a bypass of the Condensate Collection System, or they otherwise indicate operation outside of tested operating ranges on the condensate, low-volume-high-concentration (LVHC) and bleach plant treatment systems specifically identified in 40 CFR Subpart S. The tables show the equipment, the parameters that are monitored, the CMS tag numbers, the limits that have been evaluated and the thresholds or minimum averaging times.

Limit switches, pressure measurements, stream flows, temperatures, pH, fan load, pH and indications of valve positions are forms of CMS that are generally accepted industry-wide for monitoring for compliance.

The parameters designated as "Valve Position" or "Vent Valve Position" in the attached Tables indicate that a system is either being collected (valve "Closed") or bypassed (valve "Open") to show compliance with the requirement to collect gases from the named LVHC systems.

The incinerator temperature values were selected because data collected during the IPT of the two incinerators indicated that compliance with the treatment requirements of 63.443(d) were met at all times when the temperatures were above the chosen values. The averaging time was selected based on run times of the reference test methods. Similarly, the parameter values shown for the stripper parameters mandated under 63.453(g) were based on data gathered during the stripper characterization study.

Finally, the scrubber parameters are either mandated by the rule (see 63.453(c)) or approved as acceptable alternative monitoring. Parameter values were chosen based on data gathered during the scrubber IPTand subsequent performance tests, and when the parameters are within the designated ranges, we meet the bleach plant treatment requirements found in 63.445(c). Averaging times were selected based on normal compliance test times.

If you have any more questions concerning this issue, please do not hesitate to contact either Joe Taylor at 386-329-0027 or via e-mail at jetaylor@gapac.com or me at 386-329-0918.

Sincerely,

Theodore D Kennedy

Theodore D. Kennedy
Vice-President
Palatka Operations

Bc: S. D. Matchett (GA030-43)
W. M. Jernigan (GA030-09)

MACT I CONTINUOUS MONITORING SYSTEMS

Area	Parameter/Equipment	Parameter Monitored	PI Tag Number	Range/Limit	Threshold/Averaging Time
Bleach Plant (scrubber)	Scrubbant Recirculation Flow	Flow	40fif31.pv	≥ 1229 gpm	3-hr average
	Scrubber Fan Load	Load	40iif33.pv	≥ 85%	Continuous
	Scrubbant Recirculation pH	PH	40aif32.pv	≥ 9.1	3-hr average
Thermal Oxidizer	Primary Incinerator Temperature	Temperature	13ncgincin:13ttm22a.pnt	≥ 1300° F	3-hr rolling average
	Backup Incinerator Temperature	Temperature	13ncgincin:13ttm22b.pnt	≥ 1300° F	
Steam Stripper	Steam Flow to Stripper	Steam Flow	13constrip:13fcc01.meas		3-hr rolling average
	Condensate Flow to Stripper	Condensate Flow	13constrip:13fcc19.meas	N/A	3-hr rolling average
	Condensate Temperature entering Column	Temperature	13constrip:13ttc30.pnt	≥ 160° F	3-hr rolling average
Condensate Collection	Pre-evaporator 1st and 2nd effect foul, Pre-evaporator hotwell condensate	Flow, gpm	13concollect:13ftk20.pnt	N/A	Daily average rolled into 15-day rolling average
	1st and 2nd effect contaminated condensate, as makeup	Flow, gpm	13concollect:13ftk03.pnt	N/A	Daily average rolled into 15-day rolling average
	Turpentine Decanter Underflow and Secondary Condenser condensate	Flow, gpm	13concollect:13ftk21.pnt	N/A	Daily average rolled into 15-day rolling average

MACT I CONTINUOUS MONITORING SYSTEMS

Area	Parameter/Equipment	Parameter Monitored	Loop Number	Range/Limit	Threshold/Averaging Time
Closed Vent System	#1 Blow Tank Safety Valve	Limit Switch	05VL1VNT	Open/Closed	minute
	#2 Blow Tank Safety Valve	Limit Switch	05VL2VNT	Open/Closed	minute
	#3 Blow Tank Safety Valve	Limit Switch	05VL3VNT	Open/Closed	minute
	Secondary Condenser Vent	Limit Switch	13D06	Open/Closed	minute
	Secondary Condenser Rupture Disc	Pressure Transmitter	13D07	14.5 psi	minute
	Secondary Condenser Rupture Disc	Pressure Transmitter	13D61	14.5 psi	minute
	Accumulator Safety Valve	Limit Switch	13A07	Open/Closed	minute
	Accumulator Safety Valve	Limit Switch	13A22	Open/Closed	minute
	Pre-evaporator Hotwell Loop Seal	Pressure Transmitter	13PTB23	14" water column	minute
	Pre-evaporator Hotwell Vent	Limit Switch	13D01	Open/Closed	minute
	Pre-evaporator Hotwell Rupture Disc	Pressure Switch	13D02	10 psi	minute
	Turpentine Condenser Vent	Limit Switch	13J01	Open/Closed	minute
	Turpentine Condenser Rupture Disc	Pressure Switch	13J02	10 psi	minute
	#1 Evaporator Hotwell Vent	Limit Switch	13J26	Open/Closed	minute

MACT I CONTINUOUS MONITORING SYSTEMS

Area	Parameter/Equipment	Parameter Monitored	Loop Number	Range/Limit	Threshold/Averaging Time
Closed Vent System	#1 Evaporator Hotwell Rupture Disc	Pressure Switch	13J27	10 psi	minute
	#2 Evaporator Hotwell Vent	Limit Switch	13J21	Open/Closed	minute
	#2 Evaporator Hotwell Rupture Disc	Pressure Switch	13J22	10 psi	minute
	#3 Evaporator Hotwell Vent	Limit Switch	13J16	Open/Closed	minute
	#3 Evaporator Hotwell Rupture Disc	Pressure Switch	13J17	10 psi	minute
	#3 Evaporator Hotwell Loop Seal	Pressure Transmitter	11PTJ12	14" water column	minute
	#4 Evaporator Hotwell Vent	Limit Switch	13J11	Open/Closed	minute
	#4 Evaporator Hotwell Rupture Disc	Pressure Switch	13J12	10 psi	minute
	#4 Evaporator Hotwell Rupture Disc	Pressure Switch	13J15	10 psi	minute
	#4 Evaporator Hotwell Loop Seal	Pressure Transmitter	68PTO46	14" water column	minute
	Stripper Feed Tank Water Seal	Water Seal	13K09	8 psi	minute
	Stripper Feed Tank Rupture Disc	Pressure Transmitter	13K15	14.5 psi	minute
	Stripper-off-gas to Oxidizer	Limit Switch	13L04	Open/Closed	minute
	Stripper-off-gas to Oxidizer Rupture Disc	Temperature Transmitter	13L14	160° F	minute

MACT I CONTINUOUS MONITORING SYSTEMS

Area	Parameter/Equipment	Parameter Monitored	Loop Number	Range/Limit	Threshold/Averaging Time
Closed Vent System	Stripper-off-gas to Boiler	Limit Switch	59D12	Open/Closed	
	Stripper-off-gas to Boiler Rupture Disc	Pressure Transmitter	59D35	14.5 psi	
	NCG Vent to Oxidizer	Limit Switch	13D70	Open/Closed	
	NCG to Oxidizer Rupture Disc	Pressure Transmitter	13D65	14.5 psi	
	NCG to Oxidizer Rupture Disc	Temperature Transmitter	13D68	160° F	
	Batch NCG to Boiler Rupture Disc	Pressure Transmitter	13D63	14.5 psi	
	NCG Vent to Boiler	Limit Switch	59D08	Open/Closed	
	NCG to Boiler Rupture Disc	Temperature Transmitter	59D06	160° F	

Appendix B

Miscellaneous Information

Table 1

	Run 1	Run 2	Run 3	Run 4
Start =	10/29/02 12:18	10/31/02 13:32	10/31/02 15:50	10/31/02 17:10
End =	10/29/02 13:23	10/31/02 14:43	10/31/02 16:56	10/31/02 18:16

	Do Stage					Eop Stage		D1 Stage		BP Scrubber								R-10 Run Status	Test
	BAST/h			% Pine	% HW	% Pine	% HW	% Pine	% HW	Flow (gpm)			pH			Fan Load (%)	Fan Load (amps)	Fan Delta P (in H2O)	ClO2 (STPD)	Cl2
	43FYB04.PV	Maximum	STDEV	43AYB04W.PV	Calculation	43AYD04W.PV	Calculation	43AYF04W.PV	Calculation	40FIF31.PV	Minimum	STDEV	40AIF32.PV	Minimum	STDEV	40IIF33.PV	40IIF33.PV	40PIF03.PV	37FYF14.PV	ppm
Run 1	50	52	0.6	100.0	0.0	100.0	0.0	100.0	0.0	1262	1261	0.6	9.1	9.0	0.05	83.9	15.1	20.9	0.00	0.233
Run 2	50	52	0.8	100.0	0.0	100.0	0.0	100.0	0.0	1253	1252	1.0	9.3	9.3	0.01	85.5	15.4	21.4	31.6	0.073
Run 3	50	52	0.6	100.0	0.0	100.0	0.0	100.0	0.0	1258	1257	0.8	9.3	9.3	0.00	85.4	15.4	21.4	37.3	0.020
Run 4	50	52	0.6	100.0	0.0	100.0	0.0	100.0	0.0	1262	1260	0.9	9.3	9.2	0.02	85.8	15.4	21.4	30.3	0.032
										Average =	**1257**			**9.2**		**85.1**	**15.3**		

Table 2

No. 3 Bleach Plant					
Parameter		**Test Condition**	**Proposed Operating Value**	**Monitoring Frequency**	**Averaging Time**
pH, Minimum		9.0	9.0	5 min	3-hr., rolling
Scrubber flow, Minimum	(gpm)	1252	1252	5 min	3-hr., rolling
Fan load Minimum	(amps)	15.11[a]	10.8[c]	5 min	3-hr., rolling
Fan load Maximum	(amps)	15.45[b]	19.3[d]	5 min	3-hr., rolling
Fan "No Load"	(amps)	9.8			

[a] Equivalent to 83.9% Load, using Equation 1

[b] Equivalent to 85.8% Load, using Equation 1

[c] Equivalent to 41.9% Load using Equation 2

[d] Equivalent to75% Load using Equation 2

Figure 1

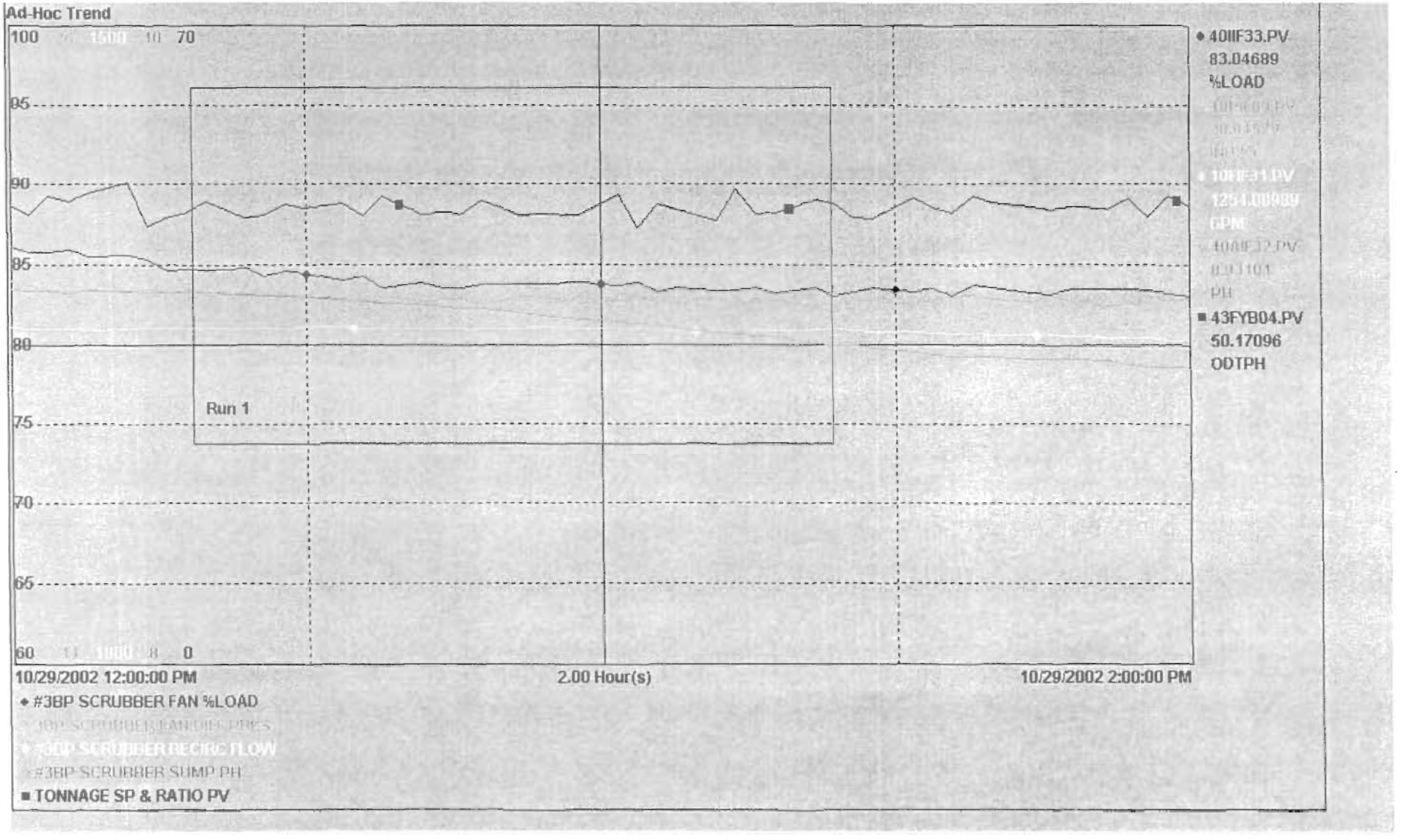

Ad-Hoc Trend
100
95
90
85
80
75
70
65
60
70
0
Run 1
10/29/2002 12:00:00 PM
2.00 Hour(s)
10/29/2002 2:00:00 PM
40IIF33.PV
83.04689
%LOAD
43FYB04.PV
50.17096
ODTPH
#3BP SCRUBBER FAN %LOAD
#3BP SCRUBBER SUMP PH
TONNAGE SP & RATIO PV

Figure 2

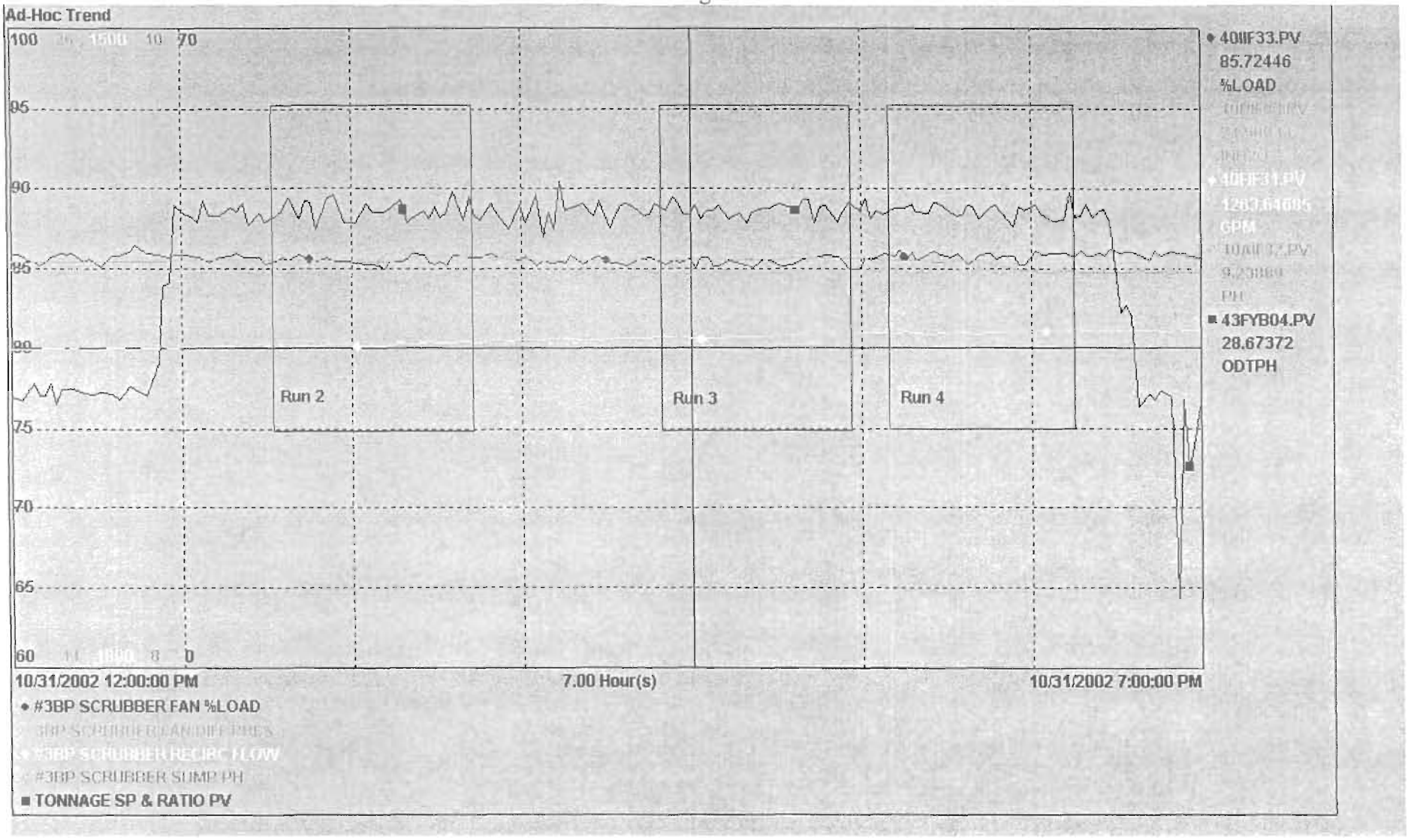
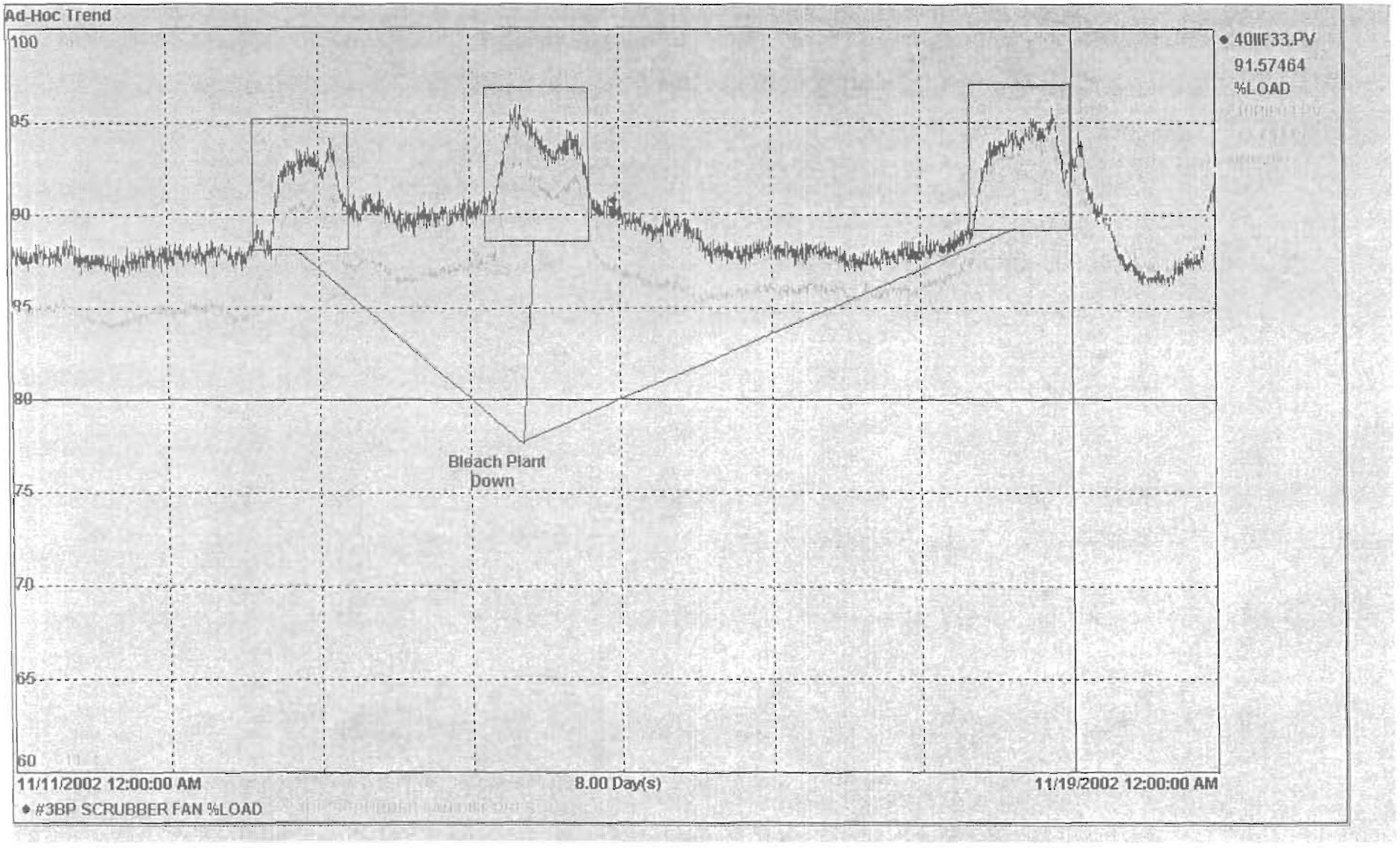

Ad-Hoc Trend
100
95
90
85
80
75
70
65
60
Run 2
Run 3
Run 4
40IIF33.PV
85.72446
%LOAD
43FYB04.PV
28.67372
ODTPH
10/31/2002 12:00:00 PM
7.00 Hour(s)
10/31/2002 7:00:00 PM
#3BP SCRUBBER FAN %LOAD
TONNAGE SP & RATIO PV

Figure 3


Ad-Hoc Trend
100
95
90
95
80
75
70
65
60
40IIF33.PV
91.57464
%LOAD
Bleach Plant
Down
11/11/2002 12:00:00 AM
8.00 Day(s)
11/19/2002 12:00:00 AM
#3BP SCRUBBER FAN %LOAD

Appendix C

Raw Data
(5-minute averages)

pH Run 1		pH Run 2		pH Run 3		pH Run 4	
29-Oct-02 12:18:00	9.2	31-Oct-02 13:32:00	9.3	31-Oct-02 15:50:00	9.3	31-Oct-02 17:10:00	9.3
29-Oct-02 12:23:00	9.2	31-Oct-02 13:37:00	9.3	31-Oct-02 15:55:00	9.3	31-Oct-02 17:15:00	9.3
29-Oct-02 12:28:00	9.1	31-Oct-02 13:42:00	9.3	31-Oct-02 16:00:00	9.3	31-Oct-02 17:20:00	9.3
29-Oct-02 12:33:00	9.1	31-Oct-02 13:47:00	9.3	31-Oct-02 16:05:00	9.3	31-Oct-02 17:25:00	9.3
29-Oct-02 12:38:00	9.1	31-Oct-02 13:52:00	9.3	31-Oct-02 16:10:00	9.3	31-Oct-02 17:30:00	9.3
29-Oct-02 12:43:00	9.1	31-Oct-02 13:57:00	9.3	31-Oct-02 16:15:00	9.3	31-Oct-02 17:35:00	9.3
29-Oct-02 12:48:00	9.1	31-Oct-02 14:02:00	9.3	31-Oct-02 16:20:00	9.3	31-Oct-02 17:40:00	9.3
29-Oct-02 12:53:00	9.1	31-Oct-02 14:07:00	9.3	31-Oct-02 16:25:00	9.3	31-Oct-02 17:45:00	9.3
29-Oct-02 12:58:00	9.1	31-Oct-02 14:12:00	9.3	31-Oct-02 16:30:00	9.3	31-Oct-02 17:50:00	9.3
29-Oct-02 13:03:00	9.1	31-Oct-02 14:17:00	9.3	31-Oct-02 16:35:00	9.3	31-Oct-02 17:55:00	9.2
29-Oct-02 13:08:00	9.0	31-Oct-02 14:22:00	9.3	31-Oct-02 16:40:00	9.3	31-Oct-02 18:00:00	9.2
29-Oct-02 13:13:00	9.0	31-Oct-02 14:27:00	9.3	31-Oct-02 16:45:00	9.3	31-Oct-02 18:05:00	9.2
29-Oct-02 13:18:00	9.0	31-Oct-02 14:32:00	9.3	31-Oct-02 16:50:00	9.3	31-Oct-02 18:10:00	9.2
		31-Oct-02 14:37:00	9.3				

Flow Run 1		Flow Run 2		Flow Run 3		Flow Run 4	
29-Oct-02 12:18:00	1263	31-Oct-02 13:32:00	1253	31-Oct-02 15:50:00	1258	31-Oct-02 17:10:00	1261
29-Oct-02 12:23:00	1262	31-Oct-02 13:37:00	1253	31-Oct-02 15:55:00	1258	31-Oct-02 17:15:00	1261
29-Oct-02 12:28:00	1263	31-Oct-02 13:42:00	1252	31-Oct-02 16:00:00	1257	31-Oct-02 17:20:00	1261
29-Oct-02 12:33:00	1263	31-Oct-02 13:47:00	1252	31-Oct-02 16:05:00	1257	31-Oct-02 17:25:00	1261
29-Oct-02 12:38:00	1263	31-Oct-02 13:52:00	1253	31-Oct-02 16:10:00	1258	31-Oct-02 17:30:00	1261
29-Oct-02 12:43:00	1262	31-Oct-02 13:57:00	1252	31-Oct-02 16:15:00	1258	31-Oct-02 17:35:00	1261
29-Oct-02 12:48:00	1263	31-Oct-02 14:02:00	1252	31-Oct-02 16:20:00	1258	31-Oct-02 17:40:00	1261
29-Oct-02 12:53:00	1263	31-Oct-02 14:07:00	1252	31-Oct-02 16:25:00	1259	31-Oct-02 17:45:00	1262
29-Oct-02 12:58:00	1262	31-Oct-02 14:12:00	1252	31-Oct-02 16:30:00	1259	31-Oct-02 17:50:00	1262
29-Oct-02 13:03:00	1262	31-Oct-02 14:17:00	1253	31-Oct-02 16:35:00	1260	31-Oct-02 17:55:00	1262
29-Oct-02 13:08:00	1261	31-Oct-02 14:22:00	1254	31-Oct-02 16:40:00	1259	31-Oct-02 18:00:00	1263
29-Oct-02 13:13:00	1262	31-Oct-02 14:27:00	1254	31-Oct-02 16:45:00	1259	31-Oct-02 18:05:00	1263
29-Oct-02 13:18:00	1261	31-Oct-02 14:32:00	1254	31-Oct-02 16:50:00	1259	31-Oct-02 18:10:00	1263
		31-Oct-02 14:37:00	1255				

Fan Load (Amps) Run 1		Fan Load (Amps) Run 2		Fan Load (Amps) Run 3		Fan Load (Amps) Run 4	
29-Oct-02 12:18:00	15.26	31-Oct-02 13:32:00	15.40	31-Oct-02 15:50:00	15.37	31-Oct-02 17:10:00	15.47
29-Oct-02 12:23:00	15.23	31-Oct-02 13:37:00	15.44	31-Oct-02 15:55:00	15.39	31-Oct-02 17:15:00	15.44
29-Oct-02 12:28:00	15.20	31-Oct-02 13:42:00	15.43	31-Oct-02 16:00:00	15.39	31-Oct-02 17:20:00	15.45
29-Oct-02 12:33:00	15.14	31-Oct-02 13:47:00	15.41	31-Oct-02 16:05:00	15.38	31-Oct-02 17:25:00	15.48
29-Oct-02 12:38:00	15.09	31-Oct-02 13:52:00	15.40	31-Oct-02 16:10:00	15.38	31-Oct-02 17:30:00	15.45
29-Oct-02 12:43:00	15.07	31-Oct-02 13:57:00	15.38	31-Oct-02 16:15:00	15.38	31-Oct-02 17:35:00	15.39
29-Oct-02 12:48:00	15.10	31-Oct-02 14:02:00	15.36	31-Oct-02 16:20:00	15.36	31-Oct-02 17:40:00	15.46
29-Oct-02 12:53:00	15.11	31-Oct-02 14:07:00	15.34	31-Oct-02 16:25:00	15.40	31-Oct-02 17:45:00	15.45
29-Oct-02 12:58:00	15.10	31-Oct-02 14:12:00	15.38	31-Oct-02 16:30:00	15.35	31-Oct-02 17:50:00	15.44
29-Oct-02 13:03:00	15.05	31-Oct-02 14:17:00	15.43	31-Oct-02 16:35:00	15.39	31-Oct-02 17:55:00	15.38
29-Oct-02 13:08:00	15.03	31-Oct-02 14:22:00	15.47	31-Oct-02 16:40:00	15.43	31-Oct-02 18:00:00	15.47
29-Oct-02 13:13:00	15.03	31-Oct-02 14:27:00	15.38	31-Oct-02 16:45:00	15.45	31-Oct-02 18:05:00	15.48
29-Oct-02 13:18:00	15.03	31-Oct-02 14:32:00	15.40	31-Oct-02 16:50:00	15.42	31-Oct-02 18:10:00	15.47
		31-Oct-02 14:37:00	15.45				

Fan Load (%) Run 1		Fan Load (%) Run 2		Fan Load (%) Run 3		Fan Load (%) Run 4	
29-Oct-02 12:18:00	84.7	31-Oct-02 13:32:00	85.5	31-Oct-02 15:50:00	85.3	31-Oct-02 17:10:00	85.9
29-Oct-02 12:23:00	84.6	31-Oct-02 13:37:00	85.7	31-Oct-02 15:55:00	85.4	31-Oct-02 17:15:00	85.7
29-Oct-02 12:28:00	84.4	31-Oct-02 13:42:00	85.6	31-Oct-02 16:00:00	85.4	31-Oct-02 17:20:00	85.8
29-Oct-02 12:33:00	84.0	31-Oct-02 13:47:00	85.5	31-Oct-02 16:05:00	85.4	31-Oct-02 17:25:00	85.9
29-Oct-02 12:38:00	83.8	31-Oct-02 13:52:00	85.5	31-Oct-02 16:10:00	85.4	31-Oct-02 17:30:00	85.8
29-Oct-02 12:43:00	83.6	31-Oct-02 13:57:00	85.4	31-Oct-02 16:15:00	85.4	31-Oct-02 17:35:00	85.4
29-Oct-02 12:48:00	83.8	31-Oct-02 14:02:00	85.3	31-Oct-02 16:20:00	85.2	31-Oct-02 17:40:00	85.8
29-Oct-02 12:53:00	83.9	31-Oct-02 14:07:00	85.1	31-Oct-02 16:25:00	85.5	31-Oct-02 17:45:00	85.8
29-Oct-02 12:58:00	83.8	31-Oct-02 14:12:00	85.4	31-Oct-02 16:30:00	85.2	31-Oct-02 17:50:00	85.7
29-Oct-02 13:03:00	83.6	31-Oct-02 14:17:00	85.6	31-Oct-02 16:35:00	85.4	31-Oct-02 17:55:00	85.4
29-Oct-02 13:08:00	83.4	31-Oct-02 14:22:00	85.9	31-Oct-02 16:40:00	85.6	31-Oct-02 18:00:00	85.9
29-Oct-02 13:13:00	83.4	31-Oct-02 14:27:00	85.4	31-Oct-02 16:45:00	85.8	31-Oct-02 18:05:00	85.9
29-Oct-02 13:18:00	83.4	31-Oct-02 14:32:00	85.5	31-Oct-02 16:50:00	85.6	31-Oct-02 18:10:00	85.9
		31-Oct-02 14:37:00	85.7				

Attachment

SOURCE TEST REPORT

Georgia-Pacific Corporation
Palatka, Florida

Bleach Plant

October 29-31, 2002

Prepared By:

AAS Inc.

Ambient Air Services, Inc.

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-6675

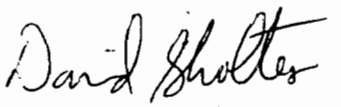
Ambient Air Services, Inc. of Starke, Florida, has completed the testing as described in this report for Georgia-Pacific Corporation's Palatka, Florida Bleach Plant. To the best of our knowledge and abilities, we certify that all information, facts, and test data are true and correct. Information supplied to AASI for use in this report from Georgia-Pacific Corporation is perceived to be accurate and is used as such where necessary. This report was prepared and certified by:

Report Number: 504-02-09

Prepared By:

Randy L Weston
19 November 2002

Reviewed By:



David Sholtes
19 November 2002

EXECUTIVE SUMMARY:

On 29 and 31 October, 2002 Ambient Air Services, Inc. performed the FDEP required permit stack test at Georgia-Pacific Corporation's Palatka, Florida Bleach Plant. During this test all required stack testing parameters were met. Table I summarizes the results of the test.

TABLE I

Georgia-Pacific Corporation Palatka, Florida 29 & 31 October, 2002					
PARAMETER	**TEST RESULTS**				
29 October					
	Permit Limits	R 1	R 2	R 3	Avg
Carbon Monoxide (CO)	N/A	979.0 ppm	788.7 ppm	N/A	883.9 ppm
	46 lb/hr	58.0 lb/hr	44.5 lb/hr	N/A	51.2 lb/hr
Chlorinated HAP (Cl2)	10 ppm	0.233 ppm	0.160 ppm	0.164 ppm	0.186 ppm
	N/A	0.016 lb/hr	0.011 lb/hr	0.012 lb/hr	0.013 lb/hr
31 October					
	Permit Limits	R 1	R 2	R 3	Avg
Carbon Monoxide (CO)	N/A	1155.1 ppm	1212.2 ppm	583.1 ppm	983.5 ppm
	46 lb/hr	72.4 lb/hr	74.6 lb.hr	36.5 lb/hr	61.1 lb/hr
Chlorinated HAP (Cl2)	10 ppm	0.073 ppm	0.020 ppm	0.032 ppm	0.042 ppm
	N/A	0.005 lb/hr	0.001 lb/hr	0.002 lb/hr	0.003 lb/hr

TABLE OF CONTENTS

1.0 Introduction

Georgia-Pacific Corporation contracted with Ambient Air Services Inc. of Starke, Florida to perform the Chlorine and Carbon Monoxide compliance testing on the Bleach Plant located in Palatka, Florida.

This testing was conducted in order to satisfy testing requirements of Permit Number 1070005-010-AC for emission sources associated with the Palatka, Florida Bleach Plant. For the testing perspective the requirements of the permit associated with this facility was tested under one mobilization effort.

A summary of the testing performed is summarized in Table 2.

The testing was conducted on October 29 & 31, 2002. Florida DEP was notified of the test dates.

Table 2

Georgia-Pacific Corporation Palatka, Florida 29 & 31 October, 2002 Summary of Permit Requirements Performance Emission Testing					
Source Description	**Approx. Stack Flow**	**Tests**	**EPA Method**	**No. of Runs**	**Min. hrs**
Bleach Plant	13,135 scfmd	Cl	40CFR60 AppA, Meth 26a	6	1 hour
		CO	40CFR60 AppA, Meth 10	5	1 hour

2.0 Summary and Discussion of Results

2.1 Summary of Results

The following is the summary table for the test conducted with all results in Parts per Million and lbs/hr:

Table 3

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

Carbon Monoxide Emission Summary

RUN NUMBER	START TIME	END TIME	Total Minutes Tested	Flow, SCFM-D	Carbon Monoxide, parts per million	Carbon Monoxide, pounds per hour
1	12:25	13:24	60	12676	979.0	58.0
2	14:33	15:32	60	12068	788.7	44.5
Averages			**120**	**12372**	**883.9**	**51.2**

Table 4

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 31, 2002

Carbon Monoxide Emission Summary

RUN NUMBER	START TIME	END TIME	Total Minutes Tested	Flow, SCFM-D	Carbon Monoxide, parts per million	Carbon Monoxide, pounds per hour
1	13:30	14:29	60	13401	1155.1	72.4
2	15:47	16:46	60	13171	1212.2	74.6
3	17:10	18:09	60	13375	583.1	36.5
Averages			**180**	**13316**	**983.5**	**61.1**

Table 5

AASI

Chlorine Emissions Summary

USEPA Method 26A (40 CFR Part 60 Appendix A)

Georgia Pacific

Palatka, Fl.

October 29, 2002

AASI USEPA Method 26A 12 Point Template - Rev 0/11-7-2002

Run			Chlorine Emissions			Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time (EDT)	GR/SCFD	PPM	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
10/29/02	1	12:18 13:23	1.50E-04	0.233	0.016	16316	12775	144.3	10.7	34.421	104.7
10/29/02	2	14:33 15:38	1.03E-04	0.160	0.011	15336	12139	145.0	9.6	32.247	103.3
10/29/02	3	17:00 18:02	1.06E-04	0.164	0.012	16770	13454	142.2	8.8	36.523	105.5
Average			**1.20E-04**	**0.186**	**0.013**	**16141**	**12789**	**143.8**	**9.7**	**34.397**	**104.5**

Table 6

AASI

Chlorine Emissions Summary

USEPA Method 26A (40 CFR Part 60 Appendix A)

Georgia Pacific

Palatka, Fl.

October 31, 2002

AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Run			Chlorine Emissions			Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time (EDT)	GR/SCFD	PPM	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
10/31/02	1	13:32 14:43	4.73E-05	0.073	0.005	16387	13401	142.0	7.4	35.830	103.9
10/31/02	**2**	15:50 16:56	1.29E-05	0.020	0.001	16475	13134	143.1	9.0	35.928	106.3
10/31/02	**3**	17:10 18:16	2.06E-05	0.032	0.002	16123	12870	140.3	9.3	35.118	106.1
Average			**2.69E-05**	**0.042**	**0.003**	**16328**	**13135**	**141.8**	**8.6**	**35.625**	**105.4**

3.0 Process Description

3.1 Source Operating Parameters

The following conditions were met and the required information was collected during the compliance test.

1. The Bleach Plant had been stabilized for one hour prior to testing.

2. The production rate, species, Kappa, and ClO2 application rates were recorded during the test.

3.2 Process Description

The absorbance of visible light by wood pulp fibers is caused mainly by lignin, one of the main constituents of wood. Residual lignin remaining after chemical pulping processes is highly colored. It also darkens with age. Most of the lignin is removed during the pulping process. Bleaching is a process whereby chemicals are applied to the pulp to increase its brightness by continuing the delignification process.

Bleaching increases the usefulness of the paper by enhancing its capacity for accepting printed or written images. It is also a means of purifying pulp, increasing its stability, and enhancing some of its properties.

The chemicals used in the Georgia-Pacific Palatka Mill include oxidants (chlorine dioxide, oxygen and peroxide) and an alkali (sodium hydroxide). The bleaching sequence is first a chlorine dioxide stage (D_0), followed by a caustic extraction stage enhanced with oxygen and peroxide (E_{op}), and finally another chlorine dioxide stage (D_1). These chemicals are mixed with pulp suspensions at prescribed pH, temperature, and concentration conditions for a specified time period. Bleaching chemicals are applied sequentially with intermediate washing between stages, because it is not possible to achieve sufficient delignification by the action of any one chemical in a single stage. Reaction times for bleaching chemicals range from a few minutes to several hours, requiring large towers to provide adequate retention time.

4.0 Sampling Point Location

Sample Site Diagram

Facility: Georgia Pacific

Location: Palatka, Florida

Source: Bleach Plant

Drawing Date: 10/29/02

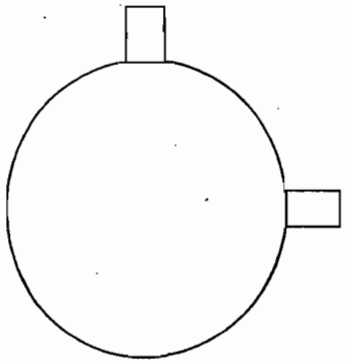
NOT TO SCALE

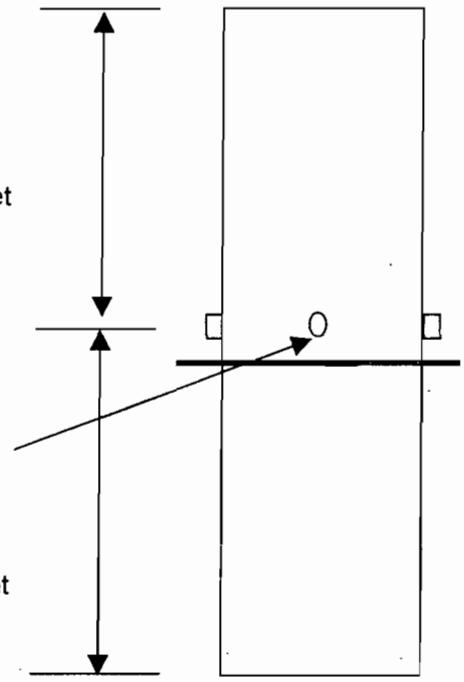
Stack Diameter: 42 Inches

Diameters Downstream: 8.0

Diameters Upstream: 5.7

Chlorine
Method 26a





Sampling Points	
1	1.8
2	6.1
3	12.4
4	29.6
5	35.9
6	40.2

Note: Two equal distances, ninety degree ports. Ports are 4 inches long. Two ports with 6 points per port, 12 total points.

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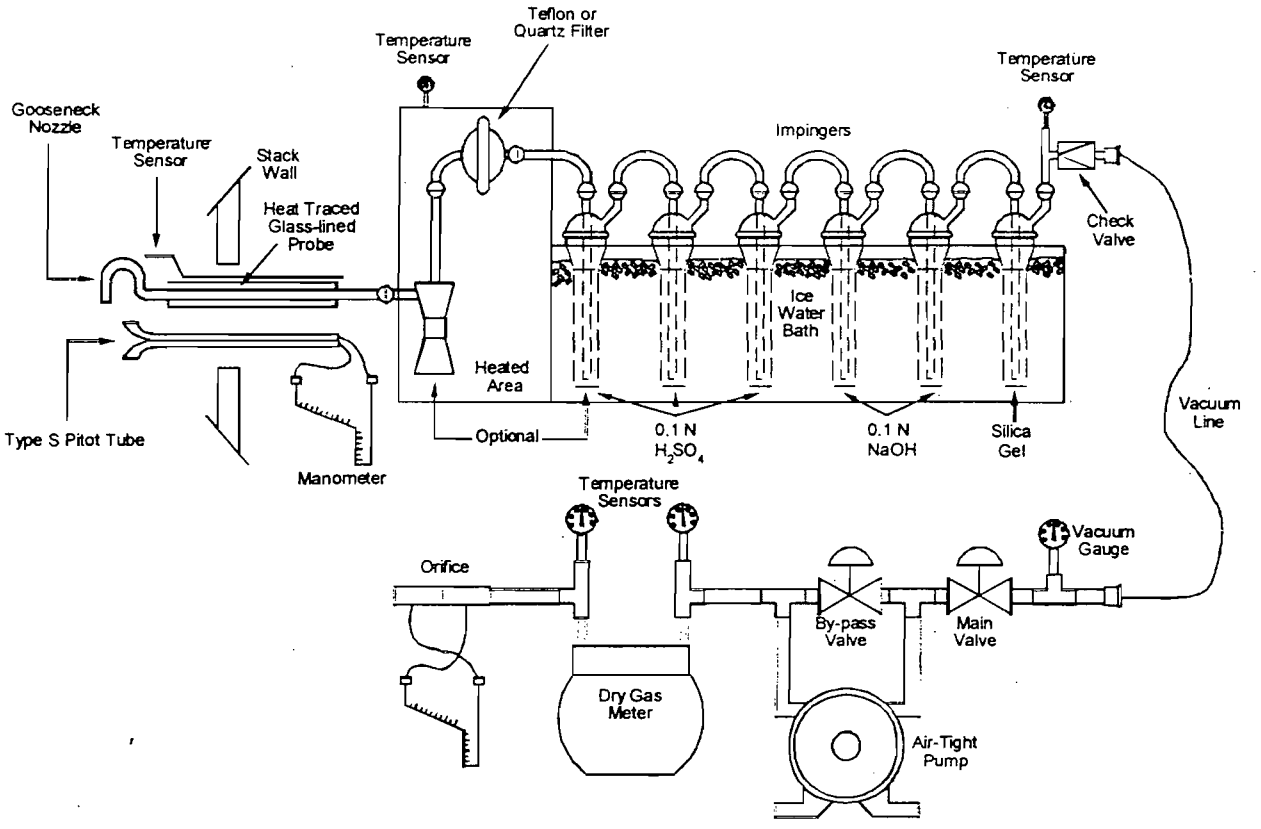
Figure 2-1

5.0 Testing Methodology and Procedures

5.1 Chlorine Testing (Method 26a)

USEPA method 26a was conducted on the Bleach Plant. The following is a synopsis of the method and a diagram illustrating the equipment in use.

Gaseous and particulate pollutants are withdrawn isokinetically from the source and collected in an optional cyclone, on a filter, and in absorbing solutions. The cyclone collects any liquid droplets and is not necessary if the source emissions do not contain them; however, it is preferable to include the cyclone in the sampling train to protect the filter from any liquid present. The filter collects particulate matter including halide salts but is not routinely recovered or analyzed. Acidic and alkaline absorbing solutions collect the gaseous hydrogen halides and halogens, respectively. Following sampling of emissions containing liquid droplets, any halides/halogens dissolved in the liquid in the cyclone and on the filter are vaporized to gas and collected in the impingers by pulling conditioned ambient air through the sampling train. The hydrogen halides are solubilized in the acidic solution and form chloride (Cl^-), bromide (Br^-), and fluoride (F^-) ions. The halogens have a very low solubility in the acidic solution and pass through to the alkaline solution where they are hydrolyzed to form a proton (H^+), the halide ion, and the hypohalous acid (HClO or HBrO). Sodium thiosulfate is added to the alkaline solution to assure reaction with the hypohalous acid to form a second halide ion such that 2 halide ions are formed for each molecule of halogen gas. The halide ions in the separate solutions are measured by ion chromatography (IC). If desired, the particulate matter recovered from the filter and the probe is analyzed following the procedures in Method 5.



5.2 Carbon Monoxide Testing (Method 10)

An integrated or continuous gas sample is extracted from a sampling point and analyzed for carbon monoxide (CO) content using a Luft-type nondispersive infrared analyzer (NDIR) or equivalent.

APPENDICES

Appendix A	Complete Emission Data - Emissions Run Summaries - Flow Calculation Data
Appendix B	Field Data Sheets - Chlorine and Flow Data Sheets - Carbon Monoxide Data
Appendix C	Laboratory Analysis
Appendix D	Equipment Calibration Data - Carbon Monoxide Analyzer Calibration - Meter Box Annual Calibration - Meter Box Post Test Calibration - Pitot Calibration - Thermocouple Calibration
Appendix E	Sample Chain of Custody
Appendix F	Calibration Gas Certificates
Appendix G	Process Weight Verification
Appendix H	Project Participants

APPENDIX – A

Complete Emission Data
- Emissions Run Summaries
- Flow Calculation Data

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

CI Summary Run 1

Facility	Georgia Pacific	Impinger Condensate	81.0
Location	Palatka, Fl.	Silica Gel Condensate	7.0
Stack	Bleach Plant	Volume Metered	37.030
Run Date	10/29/02	Meter Temp (Deg R)	572.0
Run Number	1	Carbon Dioxide, %	0.0
Start Time	12:18	Oxygen, %	20.9
Finish Time	13:23	Carbon Monoxide, %	0.0
Weather	Clear, Warm	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	88.0
Barometric Pressure	30.03	Delta H (inches H2O)	1.2900
Stack Diameter (inches)	42.00	Stack Pressure	30.026
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	604.3
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	438.9
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4616	Total	334.6
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		4.142
Gas Volume Sampled, STPD		34.421
Total Volume, STP		38.563
Moisture in stack gas, volume fraction		0.107
Dry Stack Gas, volume fraction		0.893
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.68
Specific gravity of Stack Gas Relative to Air		0.955
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1695.9
Actual Stack Gas Flow Rate, ACFM		16316
Actual Stack Gas Flow Rate, ACFMD		14570
Stack Gas Flow Rate, SCFMD		12775
Stack Gas Flow Rate Wet, SCFMW		14306
Percent Isokinetic		105
Stack Emissions:	Grains per DSCF	0.00015
	Pounds per Hour	0.016

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CI Summary Run 2

Facility	Georgia Pacific	Impinger Condensate	66.0
Location	Palatka, Fl.	Silica Gel Condensate	6.9
Stack	Bleach Plant	Volume Metered	35.145
Run Date	10/29/02	Meter Temp (Deg R)	579.3
Run Number	2	Carbon Dioxide, %	0.0
Start Time	14:33	Oxygen, %	20.9
Finish Time	15:38	Carbon Monoxide, %	0.0
Weather	Partial Clouds	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	72.9
Barometric Pressure	30.03	Delta H (inches H2O)	1.1530
Stack Diameter (inches)	42.00	Stack Pressure	30.018
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	605.0
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	320.0
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4345	Total	215.7
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.431
Gas Volume Sampled, STPD		32.247
Total Volume, STP		35.678
Moisture in stack gas, volume fraction		0.096
Dry Stack Gas, volume fraction		0.904
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.8
Specific gravity of Stack Gas Relative to Air		0.959
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1594.0
Actual Stack Gas Flow Rate, ACFM		15336
Actual Stack Gas Flow Rate, ACFMD		13864
Stack Gas Flow Rate, SCFMD		12139
Stack Gas Flow Rate Wet, SCFMW		13428
Percent Isokinetic		103
Stack Emissions:	Grains per DSCF	0.00010
	Pounds per Hour	0.011

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Cl Summary Run 3

Facility	Georgia Pacific	Impinger Condensate	68.0
Location	Palatka, Fl.	Silica Gel Condensate	7.1
Stack	Bleach Plant	Volume Metered	38.870
Run Date	10/29/02	Meter Temp (Deg R)	566.0
Run Number	3	Carbon Dioxide, %	0.0
Start Time	17:00	Oxygen, %	20.9
Finish Time	18:02	Carbon Monoxide, %	0.0
Weather	Partial Clouds	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	75.1
Barometric Pressure	30.03	Delta H (inches H2O)	1.3840
Stack Diameter (inches)	42.00	Stack Pressure	30.019
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	602.2
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	354.6
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4770	Total	250.3
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.535
Gas Volume Sampled, STPD		36.523
Total Volume, STP		40.058
Moisture in stack gas, volume fraction		0.088
Dry Stack Gas, volume fraction		0.912
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.89
Specific gravity of Stack Gas Relative to Air		0.962
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1743.1
Actual Stack Gas Flow Rate, ACFM		16770
Actual Stack Gas Flow Rate, ACFMD		15294
Stack Gas Flow Rate, SCFMD		13454
Stack Gas Flow Rate Wet, SCFMW		14752
Percent Isokinetic		106
Stack Emissions:	Grains per DSCF	0.00011
	Pounds per Hour	0.012

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

CI Summary Run 1

Facility	Georgia Pacific	Impinger Condensate	54.0
Location	Palatka, Fl.	Silica Gel Condensate	7.0
Stack	Bleach Plant	Volume Metered	37.945
Run Date	10/31/02	Meter Temp (Deg R)	564.1
Run Number	1	Carbon Dioxide, %	0.0
Start Time	13:32	Oxygen, %	20.9
Finish Time	14:43	Carbon Monoxide, %	0.0
Weather	Cloudy	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	61.0
Barometric Pressure	30.14	Delta H (inches H2O)	1.3530
Stack Diameter (inches)	42.00	Stack Pressure	30.128
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	602.0
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	214.2
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4683	Total	109.9
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		2.871
Gas Volume Sampled, STPD		35.830
Total Volume, STP		38.701
Moisture in stack gas, volume fraction		0.074
Dry Stack Gas, volume fraction		0.926
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		28.04
Specific gravity of Stack Gas Relative to Air		0.967
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1703.3
Actual Stack Gas Flow Rate, ACFM		16387
Actual Stack Gas Flow Rate, ACFMD		15174
Stack Gas Flow Rate, SCFMD		13401
Stack Gas Flow Rate Wet, SCFMW		14472
Percent Isokinetic		104
Stack Emissions:	Grains per DSCF	0.00005
	Pounds per Hour	0.005

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

CI Summary Run 2

Facility	Georgia Pacific	Impinger Condensate	68.0
Location	Palatka, Fl.	Silica Gel Condensate	7.1
Stack	Bleach Plant	Volume Metered	38.025
Run Date	10/31/02	Meter Temp (Deg R)	560.2
Run Number	2	Carbon Dioxide, %	0.0
Start Time	15:50	Oxygen, %	20.9
Finish Time	16:56	Carbon Monoxide, %	0.0
Weather	Partial Clouds	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	75.1
Barometric Pressure	29.95	Delta H (inches H2O)	1.3480
Stack Diameter (inches)	42.00	Stack Pressure	29.940
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	603.1
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	134.3
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4674	Total	30.0
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.535
Gas Volume Sampled, STPD		35.928
Total Volume, STP		39.463
Moisture in stack gas, volume fraction		0.090
Dry Stack Gas, volume fraction		0.91
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.86
Specific gravity of Stack Gas Relative to Air		0.961
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1712.4
Actual Stack Gas Flow Rate, ACFM		16475
Actual Stack Gas Flow Rate, ACFMD		14992
Stack Gas Flow Rate, SCFMD		13134
Stack Gas Flow Rate Wet, SCFMW		14433
Percent Isokinetic		106
Stack Emissions:	Grains per DSCF	0.00001
	Pounds per Hour	0.001

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Cl Summary Run 3

Facility	Georgia Pacific	Impinger Condensate	70.0
Location	Palatka, Fl.	Silica Gel Condensate	6.9
Stack	Bleach Plant	Volume Metered	37.000
Run Date	10/31/02	Meter Temp (Deg R)	557.6
Run Number	3	Carbon Dioxide, %	0.0
Start Time	17:10	Oxygen, %	20.9
Finish Time	18:16	Carbon Monoxide, %	0.0
Weather	Partial Clouds	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	76.9
Barometric Pressure	29.95	Delta H (inches H2O)	1.2970
Stack Diameter (inches)	42.00	Stack Pressure	29.938
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	600.3
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	151.1
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4582	Total	46.8
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.620
Gas Volume Sampled, STPD		35.118
Total Volume, STP		38.738
Moisture in stack gas, volume fraction		0.093
Dry Stack Gas, volume fraction		0.907
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.83
Specific gravity of Stack Gas Relative to Air		0.960
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1675.8
Actual Stack Gas Flow Rate, ACFM		16123
Actual Stack Gas Flow Rate, ACFMD		14624
Stack Gas Flow Rate, SCFMD		12870
Stack Gas Flow Rate Wet, SCFMW		14190
Percent Isokinetic		106
Stack Emissions:	Grains per DSCF	0.00002
	Pounds per Hour	0.002

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 1
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	1
Start Time	12:18
Finish Time	13:23
Weather	Clear, Warm
Total Time (minutes)	60.00
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.05
Stack Diameter (inches)	42.000
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	193.480
Initial Meter Reading (cubic feet)	156.450
Condensate (ml)	81
Silica Gel Weight (grams)	7.0
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	0.0
Nitrogen (percent)	79.1
Laboratory Results (ug)	438.9
Blank Correction	104.3
Isokinetic Rate Factor	6.00

Ambient Air Services, Inc.
Environmental Consultants

106 Ambient Air Way
Starke, FL. 32091
(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 1				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.26	1.56	142	106	106	0.51
	2	0.26	1.56	142	107	107	0.51
	3	0.23	1.38	145	107	107	0.48
	4	0.22	1.32	145	108	108	0.47
	5	0.18	1.08	143	110	110	0.42
	6	0.16	0.96	141	111	111	0.40
2	7	0.26	1.56	144	113	113	0.51
	8	0.27	1.62	145	114	114	0.52
	9	0.22	1.32	148	115	115	0.47
	10	0.18	1.08	148	117	117	0.42
	11	0.18	1.08	145	118	118	0.42
	12	0.16	0.96	143	118	118	0.40

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(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 2
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	2
Start Time	14:33
Finish Time	15:38
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.16
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	230.200
Initial Meter Reading (cubic feet)	195.055
Condensate (ml)	66
Silica Gel Weight (grams)	6.9
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	320.0
Blank Correction	104.3
Isokinetic Rate Factor	6.04

Ambient Air Services, Inc.
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(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 2				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.21	1.27	145	115	115	0.46
	2	0.2	1.21	145	117	117	0.45
	3	0.16	0.97	146	118	118	0.40
	4	0.16	0.97	147	118	118	0.40
	5	0.16	0.97	145	119	119	0.40
	6	0.12	0.72	139	120	120	0.35
2	7	0.25	1.51	146	120	120	0.50
	8	0.25	1.51	146	120	120	0.50
	9	0.22	1.33	147	121	121	0.47
	10	0.22	1.33	147	121	121	0.47
	11	0.18	1.09	144	121	121	0.42
	12	0.16	0.97	143	121	121	0.40

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Starke, FL. 32091
(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 3
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	3
Start Time	17:00
Finish Time	18:02
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.15
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	269.620
Initial Meter Reading (cubic feet)	230.750
Condensate (ml)	68
Silica Gel Weight (grams)	7.1
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	354.6
Blank Correction	104.3
Isokinetic Rate Factor	6.04

Ambient Air Services, Inc.
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106 Ambient Air Way
Starke, FL. 32091
(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 3				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.26	1.57	144	109	109	0.51
	2	0.28	1.69	142	102	102	0.53
	3	0.26	1.57	144	107	107	0.51
	4	0.25	1.51	143	107	107	0.50
	5	0.2	1.21	141	107	107	0.45
	6	0.18	1.09	140	107	107	0.42
2	7	0.26	1.57	141	106	106	0.51
	8	0.28	1.69	143	106	106	0.53
	9	0.22	1.33	144	106	106	0.47
	10	0.2	1.21	142	105	105	0.45
	11	0.18	1.09	142	105	105	0.42
	12	0.18	1.09	140	105	105	0.42

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(904) 964-8440

AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 1
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	1
Start Time	13:32
Finish Time	14:43
Weather	Cloudy
Total Time (minutes)	60.00
Number of Points	12
Barometric Pressure	30.14
Static Pressure (inches of water)	-0.17
Stack Diameter (inches)	42.000
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	313.155
Initial Meter Reading (cubic feet)	275.210
Condensate (ml)	54
Silica Gel Weight (grams)	7.0
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	0.0
Nitrogen (percent)	79.1
Laboratory Results (ug)	214.2
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 1				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.28	1.70	142	100	101	0.53
	2	0.26	1.58	144	102	100	0.51
	3	0.24	1.46	141	103	99	0.49
	4	0.18	1.09	141	105	100	0.42
	5	0.16	0.97	141	108	101	0.40
	6	0.14	0.85	142	108	102	0.37
2	7	0.27	1.64	141	109	103	0.52
	8	0.29	1.76	141	109	103	0.54
	9	0.27	1.64	142	109	103	0.52
	10	0.24	1.46	142	109	102	0.49
	11	0.18	1.09	144	109	102	0.42
	12	0.16	0.97	143	109	102	0.40

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	Cl Run 2
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	2
Start Time	15:50
Finish Time	16:56
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	29.95
Static Pressure (inches of water)	-0.14
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	359.105
Initial Meter Reading (cubic feet)	321.080
Condensate (ml)	68
Silica Gel Weight (grams)	7.1
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	134.3
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 2				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.27	1.64	140	94	93	0.52
	2	0.28	1.70	141	95	92	0.53
	3	0.24	1.46	143	103	96	0.49
	4	0.22	1.34	145	103	96	0.47
	5	0.18	1.09	144	105	97	0.42
	6	0.16	0.97	144	105	97	0.40
2	7	0.29	1.76	141	105	97	0.54
	8	0.3	1.82	142	105	97	0.55
	9	0.22	1.34	144	108	99	0.47
	10	0.2	1.22	145	108	98	0.45
	11	0.16	0.97	144	108	98	0.40
	12	0.14	0.85	144	108	97	0.37

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 3
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	3
Start Time	17:10
Finish Time	18:16
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	29.95
Static Pressure (inches of water)	-0.16
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	396.405
Initial Meter Reading (cubic feet)	359.405
Condensate (ml)	70
Silica Gel Weight (grams)	6.9
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	151.1
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 3				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.28	1.70	138	97	95	0.53
	2	0.26	1.58	140	100	96	0.51
	3	0.22	1.34	142	98	95	0.47
	4	0.2	1.22	140	100	93	0.45
	5	0.16	0.97	139	101	93	0.40
	6	0.14	0.85	142	102	94	0.37
2	7	0.3	1.82	142	102	94	0.55
	8	0.26	1.58	141	102	94	0.51
	9	0.24	1.46	140	102	94	0.49
	10	0.2	1.22	140	102	94	0.45
	11	0.16	0.97	139	103	95	0.40
	12	0.14	0.85	140	102	95	0.37

APPENDIX – B

Field Data Sheets
- Chlorine and Flow Data Sheets
- Carbon Monoxide Data

M CTM-027

HCl

AMBIENT AIR SERVICES
106 AMBIENT AIR WAY
STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka
SOURCE: Bleach
WEATHER: Partial Clouds **PRE-TEST.**
TYPE TEST: 027 Ts = 142 ~~602~~
TESTERS: BW, R Tm = 105 565
12 PTS. @ 5 MIN/PT = _____ MIN F.D.A. = .94
Y meter = .998 Filter No. = _____
COMMENTS: Nozzle .275, .275, .273 Avg .275

RUN No. 1
DATE: 10/29/02
CO2 _____
O2 20.9
CO _____

BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ #10
METER DELTA H: 2.050
PROBE ID: 6B
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42
UP/DOWN STREAM 28 22

TIME	START	1218	START VOLUME	156.450
TIME	END		END VOLUME	193.480

-1.9

PORT LENGTH (IN) 7" Factors: F = 6.01

9188.69
1529.08

LEAK CHECK: PRE.TEST 0 CFM@15". POST: _____ " Hg.
PITOT LEAK CHECK = _____ AT 3"
VOL. WATER COLLECTED = ML ~~206~~ 81
WEIGHT MOIS. SILICA GEL = _____ GR
STAT.PRESS= -1.9

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
1-	0 ~~2.5~~	156.450	.26	1.6	142	106	240	~~76~~	5	N/A	a) .005053
2	5 5	159.8	.26	1.6	142	107	247	70	5.5		b) 1529.08
3 ~~2~~	10 ~~7.5~~	162.9	.23	1.4	145	107	255	66	5		c) 1158.25
4	15 ~~10~~	166.0	.22	~~1.4~~ 1.3	145	108	222	~~66~~ 59	5		
5 3	~~20~~ 12.5	169.2	.18	1.1	143	110	220	60	5		
6	25 ~~15~~	172.1	.16	.96	141	111	260	61	4.5		
2-1 ~~4~~	30 ~~17.5~~	174.98	.26	1.6	144	113	220	64	5.5		
2	35 ~~20~~	178.0	.27	1.6	145	114	274	62	5.5		
3 ~~5~~	40 ~~22.5~~	181.6	.22	1.3	148	115	247	62	5.5		
4	45 ~~25~~	~~184.6~~ 184.9 RL	.18	1.1	148	117	209	63	5.5		
5 ~~6~~	50 ~~27.5~~	187.7	.18	1.1	145	118	264	63	5.5		
6	55 ~~30~~	190.7	.16	.96	143	118	229	64	5		
	60	193.480	—	—	—	—	—	—	—		

CTM-027 206
HCL 406

AMBIENT AIR SERVICES
106 AMBIENT AIR WAY
STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka
SOURCE: Bleach Plant
WEATHER: Partial Clouds
TYPE TEST: CTM-027
TESTERS: RW, RD
12 PTS. @ 5 MIN/PT = 60 MIN F.D.A. = .94
Y meter = 0.998 Filter No. =
COMMENTS:

RUN No. 2
DATE: 10/29/02

PRE-TEST Ts = ~~140~~ 143 ~~600~~ 605
Tm = ~~105~~ ~~565~~ 571

CO2
O2 20.9
CO

BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ 10
METER DELTA H: 2.050
PROBE ID: 6B
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42"
UP/DOWN STREAM 78 72

TIME	START	1733	START VOLUME	195,055
TIME	END	1538	END VOLUME	

static -.16

PORT LENGTH (IN) 7" Factors: 6.04

9286.22
1570 X 1170.55 X 0.05053
1536.7

LEAK CHECK: PRE.TEST 0 CFM@15". POST: .015 8 " Hg.
PITOT LEAK CHECK = OK AT 3"
VOL. WATER COLLECTED = 66 ML
WEIGHT MOIS. SILICA GEL = GR
STAT.PRESS= -.16

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
1-1 ~~1~~	0 ~~2.5~~	195,055	.21	1.3	~~145~~ ~~HSR~~	115	125	76	~~20~~ 5	N/A	a) $(.275^2 \times .94)^2$
2	5 ~~5~~	197.7	.2	1.2	145	117	274	60	6		b) $(1.6 \times .94) 605$
3 ~~2~~	10 ~~7.5~~	201.1	.16	.96	146	118	254	59	4.5		c) 571×2.05
4	15 ~~10~~	203.8	.16	.96	147	118	220	60	4.5		
5 ~~3~~	20 ~~12.5~~	206.5	.16	.96	145	119	263	56	4.5		
6	25 ~~15~~	209.2	.12	.72	139	120	245	54	4		
2-1 ~~4~~	30 ~~17.5~~	~~3~~ 211.665	.25	1.5	146	120	274	54	5		
2	35 ~~20~~	214.7	.25	1.5	146	120	238	50	5		
3 ~~5~~	40 ~~22.5~~	218.0	.22	1.3	147	121	284	52	5		
4	45 ~~25~~	221.2	.22	1.3	147	121	272	52	5		
5 ~~6~~	50 ~~27.5~~	224.4	.18	1.1	144	121	221	54	5		
6	55 ~~30~~	227.4	.16	.96	143	121	259	55	4.5		
	60	230.2	—	—	—	—	—	—	—		

AMBIENT AIR SERVICES
106 AMBIENT AIR WAY
STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka
SOURCE: Bleach Plant
WEATHER: Partial Clouds **PRE-TEST.**
TYPE TEST: CTM-027 HCl Ts = 745 605
TESTERS: RW Tm = ~~RMS~~ 115 585
12 PTS. @ 5 MIN/PT = 60 MIN F.D.A. = .94
Y meter = 0.998 Filter No. =
COMMENTS:

RUN No. 3
DATE: 10/29/02
CO2
O2
CO

BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ #10
METER DELTA H: 2.05
PROBE ID: 613
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42
UP/DOWN STREAM >8 >2

TIME	START	1700	START VOLUME	230.750
TIME	END	1802	END VOLUME	269.62

-.15

PORT LENGTH (IN) 7" Factors: 6.04

LEAK CHECK: PRE.TEST 0 CFM@15". POST: " Hg.
PITOT LEAK CHECK = OK AT 3"
VOL. WATER COLLECTED = 68 ML
WEIGHT MOIS. SILICA GEL = GR
STAT.PRESS= -.15

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
	0										
1-1 ~~1~~	~~0~~ ~~2.5~~	230.750	.26	1.6	144	109	250	63	5.5	N/A	
2	5 ~~5~~	234.0	.28	1.7	142	102	243	52	5.5		
3 ~~2~~	10 ~~7.5~~	237.5	.26	1.6	144	107	278	51	5.5		
4	15 ~~10~~	240.9	.25	1.6	143	107	240	50	5.5		
5 ~~3~~	20 ~~12.5~~	244.3	.2	1.2	141	107	237	50	5.5		
6	25 ~~15~~	247.5	.18	1.1	140	107	291	50	5		
2-1 ~~4~~	30 ~~17.5~~	250.56	.26	1.6	141	106	222	52	7		
2	35 ~~20~~	254.2	.28	1.7	143	106	278	50	7		
3 ~~5~~	40 ~~22.5~~	257.8	.22	1.3	144	106	263	50	6		
4	45 ~~25~~	261.0	.2	1.2	142	105	225	50	5		
5 ~~6~~	50 ~~27.5~~	264.2	.18	1.1	142	105	225	50	5		
6	55 ~~30~~	266.9	.18	1.1	140	105	242	50	5		
	60	264.620	—	—	—	—	—	—	—		

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: Georgia-Pacific, Palatka
SOURCE: Bleach Plant
WEATHER: p. cloudy
TYPE TEST: HCl method 26A
TESTERS:
__12_ PTS. @ _5___ MIN/PT = _60__ MIN
Y meter = 0.998 Filter No. =
COMMENTS:

RUN No. 1
DATE: 10/31/02

PRE-TES
Ts =
Tm = 94 - 85d
F.D.A. = 0.94

ORSAT:
CO2
O2
CO

BAROMETRIC PRESS
METER BOX ID 10
METER DELTA Ha 2.05
PROBE ID
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. ~250
STACK ID (IN): 42"
PORT LENGTH 6"

TIME START	1332	START VOLUME	275.210
TIME END	1443	END VOLUME	

Factors:

F=1570(aXc)/b
a = (Dn^2XFDA)^2
b= (1.6+FDA)Ts
c= Tm X DHa

LEAK CHECK:
PRE.TEST 0.012 CFM@15". POS 0.016/8 " Hg.

PITOT LEAK CHECK = OK AT 3"

VOL.WATER COLLECT = 68 ML
WT. MOIS. SILICA GE = GR

STAT.PRESS=

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	
1-1	0	275.210	0.28	1.70	142	100	101	246	64	<5	A) 0.0051 b) 254 Ts c) 0.088 = 1164 T(144) = 6.08
2	5	78.64	0.26	1.58	144	102	100	256	56	<6	
3	10	82.01	0.24	1.45	141	103	99	258	56	<5	
4	15	85.32	0.18	1.09	141	105	100	259	55	<5	
5	20	88.35	0.16	0.97	141	108	101	260	56	<5	
6	25	91.11	0.14	0.85	142	108	102	258	56	<5	
2-1	30	94.185	0.27	1.64	141	109	103	261	57	<6	
2	35	97.45	0.29	1.76	141	109	103	260	55	<5	
3	40	300.74	0.27	1.64	142	109	103	262	55	<6	
4	45	04.18	0.24	1.45	142	109	102	259	56	<6	
5	50	07.71	0.18	1.09	144	109	102	261	56	<5	
6	55	10.44	0.16	0.97	143	109	102	258	56	<5	
	60	313.155	---	---	---	---	---	---	---	---	

1-1.8
2.6
312.4
429.6
535.9
640.2
2.90

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET
FACILITY: **Georgia-Pacific, Palatka**
SOURCE: **Bleach Plant**

RUN No. 2
DATE: 10/31/02

BAROMETRIC PRESS _____
METER BOX ID 10
METER DELTA Ha 2.050
PROBE ID _____
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. ~250
STACK ID (IN): 42
PORT LENGTH 6

WEATHER: cloudy
TYPE TEST: HCl method 26A
TESTERS: _____
12 PTS. @ 5 MIN/PT = 60 MIN
Y meter = 0.998 Filter No. = _____
COMMENTS:

PRE-TES
Ts = _____
Tm = _____
F.D.A. = _____

ORSAT:
CO2 _____
O2 _____
CO _____

TIME START	1550	START VOLUME	321.080
TIME END	1656	END VOLUME	359.105

Factors: _____

F=1570(aXc)/b
a = (Dn^2XFDA)^2
b= (1.6+FDA)Ts
c= Tm X DHa

LEAK CHECK: PRE.TEST 0.014 CFM@15". POS 0.009 " Hg.
PITOT LEAK CHECK = OK AT 3"
VOL.WATER COLLECT = 68 ML STAT.PRESS= -0.14
WT. MOIS. SILICA GE = GR

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	
1-1	0	321.080	0.27	1.64	140	94	93	243	61	<5	
2	5	24.27	0.28	1.70	141	95	92	256	55	<6	
3	10	28.91	0.24	1.45	143	103	96	258	56	<6	
4	15	31.16	0.22	1.34	145	103	96	260	56	<6	
5	20	34.18	0.18	1.09	144	105	97	262	56	<5	
6	25	37.14	0.16	0.97	144	105	97	259	56	<5	
2-1	30	339.69	0.29	1.76	141	105	97	262	55	<6	
2	35	43.12	0.30	1.82	142	105	97	260	56	<6	
3	40	47.32	0.22	1.34	144	108	99	258	56	<6	
4	45	50.51	0.20	1.22	145	108	98	260	57	<6	
5	50	53.54	0.16	0.97	144	108	98	261	56	<5	
6	55	56.52	0.14	0.85	144	108	97	259	56	<5	
	60	359.105	---	---	---	---	---	---	---	---	

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: Georgia-Pacific, Palatka
SOURCE: Bleach Plant
WEATHER: cloudy
TYPE TEST: HCl method 26A
TESTERS: GH, RD
__12_ PTS. @ _5___ MIN/PT = _60__ MIN
Y meter = 0.998
COMMENTS:

RUN No. 3
DATE: 10/31/02

BAROMETRIC PRESS _____
METER BOX ID 10
METER DELTA Ha 2.050
PROBE ID _____
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. ~250
STACK ID (IN): 43
PORT LENGTH 6"

PRE-TES
Ts = _____
Tm = _____
F.D.A. = _____
Filter No. = _____

ORSAT:
CO2 _____
O2 _____
CO _____

TIME START	~~730~~ 1710 hrs	START VOLUME	359.405
TIME END	1816	END VOLUME	396.405

Factors: _____

F=1570(aXc)/b
a = (Dn^2XFDA)^2
b= (1.6+FDA)Ts
c= Tm X DHa

LEAK CHECK:
PRE.TEST 0.008 CFM@15". POS 0.006/7 " Hg.

PITOT LEAK CHECK = OK AT 3"

VOL.WATER COLLECT = 70 ML
WT. MOIS. SILICA GE = GR

STAT.PRESS= -0.16

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	
1-1	0	359.405	0.30	1.70	138	97	95	243	59	<6	
2	5	62.62	0.26	1.58	140	100	96	257	54	<6	
3	10	66.36	0.22	1.34	142	98	95	260	54	<6	
4	15	69.28	0.20	1.21	140	100	93	257	54	<6	
5	20	72.31	0.16	0.97	139	101	93	259	54	<6	
6	25	77.50	0.14	0.85	142	102	94	260	54	<6	
2-1	30	77.92	0.30	1.82	142	102	94	258	54	<6	
2	35	81.40	0.26	1.58	141	102	94	259	55	<6	
3	40	84.84	0.24	1.46	140	102	94	262	55	<6	
4	45	88.22	0.20	1.21	140	102	94	263	55	<6	
5	50	91.11	0.16	0.97	139	103	95	264	56	<6	
6	55	93.91	0.14	0.85	140	102	95	263	55	<6	
	60	396.405	---	---	---	---	---	---	---	---	

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 12:01	1982.2		1994 CO Cal						
10/29/02 12:02	1929.0								
10/29/02 12:03	982.2								
10/29/02 12:04	995.6		991 CO Cal						
10/29/02 12:05	995.1		991 CO Cal						
10/29/02 12:06	621.1								
10/29/02 12:07	580.7								
10/29/02 12:08	588.0		594.4 CO Cal						
10/29/02 12:09	588.0		594.4 CO Cal						
10/29/02 12:10	588.0		594.4 CO Cal						
10/29/02 12:11	572.3								
10/29/02 12:12	279.5								
10/29/02 12:13	299.1		301.9 CO Cal						
10/29/02 12:14	299.1		301.9 CO Cal						
10/29/02 12:15	299.1		301.9 CO Cal						
10/29/02 12:16	299.1		301.9 CO Cal						
10/29/02 12:17	299.1		301.9 CO Cal						
10/29/02 12:18	234.7								
10/29/02 12:19	10.2								
10/29/02 12:20	4.0		0 CO Cal						
10/29/02 12:21	4.6								
10/29/02 12:22	454.3								
10/29/02 12:23	917.7								
10/29/02 12:24	994.3								
10/29/02 12:25	969.3	1		4.80	996.85	991.00	963.5	12068	54.35
10/29/02 12:26	984.3	1		4.80	996.85	991.00	978.5	12676	57.97
10/29/02 12:27	1002.7	1		4.80	996.85	991.00	996.8	12676	59.06
10/29/02 12:28	987.7	1		4.80	996.85	991.00	981.8	12676	58.17
10/29/02 12:29	981.0	1		4.80	996.85	991.00	975.2	12676	57.78
10/29/02 12:30	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 12:31	1009.3	1		4.80	996.85	991.00	1003.5	12676	59.45
10/29/02 12:32	987.7	1		4.80	996.85	991.00	981.8	12676	58.17
10/29/02 12:33	997.7	1		4.80	996.85	991.00	991.8	12676	58.76
10/29/02 12:34	1004.3	1		4.80	996.85	991.00	998.5	12676	59.16
10/29/02 12:35	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 12:36	992.7	1		4.80	996.85	991.00	986.8	12676	58.47
10/29/02 12:37	976.0	1		4.80	996.85	991.00	970.2	12676	57.48
10/29/02 12:38	961.0	1		4.80	996.85	991.00	955.2	12676	56.59
10/29/02 12:39	954.3	1		4.80	996.85	991.00	948.5	12676	56.20
10/29/02 12:40	972.7	1		4.80	996.85	991.00	966.8	12676	57.28
10/29/02 12:41	959.3	1		4.80	996.85	991.00	953.5	12676	56.50
10/29/02 12:42	949.3	1		4.80	996.85	991.00	943.5	12676	55.90
10/29/02 12:43	977.7	1		4.80	996.85	991.00	971.8	12676	57.58
10/29/02 12:44	971.0	1		4.80	996.85	991.00	965.2	12676	57.19
10/29/02 12:45	974.3	1		4.80	996.85	991.00	968.5	12676	57.38
10/29/02 12:46	981.0	1		4.80	996.85	991.00	975.2	12676	57.78
10/29/02 12:47	956.0	1		4.80	996.85	991.00	950.2	12676	56.30
10/29/02 12:48	966.0	1		4.80	996.85	991.00	960.2	12676	56.89
10/29/02 12:49	957.7	1		4.80	996.85	991.00	951.9	12676	56.40

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 12:50	926.0	1		4.80	996.85	991.00	920.2	12676	54.52
10/29/02 12:51	937.7	1		4.80	996.85	991.00	931.9	12676	55.21
10/29/02 12:52	906.0	1		4.80	996.85	991.00	900.2	12676	53.34
10/29/02 12:53	934.3	1		4.80	996.85	991.00	928.5	12676	55.02
10/29/02 12:54	926.0	1		4.80	996.85	991.00	920.2	12676	54.52
10/29/02 12:55	887.7	1		4.80	996.85	991.00	881.9	12676	52.25
10/29/02 12:56	912.7	1		4.80	996.85	991.00	906.9	12676	53.73
10/29/02 12:57	921.0	1		4.80	996.85	991.00	915.2	12676	54.23
10/29/02 12:58	929.3	1		4.80	996.85	991.00	923.6	12676	54.72
10/29/02 12:59	962.7	1		4.80	996.85	991.00	956.9	12676	56.69
10/29/02 13:00	956.0	1		4.80	996.85	991.00	950.2	12676	56.30
10/29/02 13:01	979.3	1		4.80	996.85	991.00	973.5	12676	57.68
10/29/02 13:02	979.3	1		4.80	996.85	991.00	973.5	12676	57.68
10/29/02 13:03	1002.7	1		4.80	996.85	991.00	996.8	12676	59.06
10/29/02 13:04	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:05	1011.0	1		4.80	996.85	991.00	1005.1	12676	59.55
10/29/02 13:06	1012.7	1		4.80	996.85	991.00	1006.8	12676	59.65
10/29/02 13:07	1014.3	1		4.80	996.85	991.00	1008.5	12676	59.75
10/29/02 13:08	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 13:09	1014.3	1		4.80	996.85	991.00	1008.5	12676	59.75
10/29/02 13:10	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:11	1007.7	1		4.80	996.85	991.00	1001.8	12676	59.36
10/29/02 13:12	1036.0	1		4.80	996.85	991.00	1030.1	12676	61.03
10/29/02 13:13	1024.3	1		4.80	996.85	991.00	1018.5	12676	60.34
10/29/02 13:14	1001.0	1		4.80	996.85	991.00	995.1	12676	58.96
10/29/02 13:15	1017.7	1		4.80	996.85	991.00	1011.8	12676	59.95
10/29/02 13:16	1032.7	1		4.80	996.85	991.00	1026.8	12676	60.84
10/29/02 13:17	1027.7	1		4.80	996.85	991.00	1021.8	12676	60.54
10/29/02 13:18	1011.0	1		4.80	996.85	991.00	1005.1	12676	59.55
10/29/02 13:19	1024.3	1		4.80	996.85	991.00	1018.5	12676	60.34
10/29/02 13:20	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:21	1036.0	1		4.80	996.85	991.00	1030.1	12676	61.03
10/29/02 13:22	1051.0	1		4.80	996.85	991.00	1045.1	12676	61.92
10/29/02 13:23	1034.3	1		4.80	996.85	991.00	1028.4	12676	60.93
10/29/02 13:24	1034.3	1		4.80	996.85	991.00	1028.4	12676	60.93
10/29/02 13:25	1037.7			***Run 1 Average***			***979.0***		***57.96***
10/29/02 13:26	771.0								
10/29/02 13:27	54.0								
10/29/02 13:28	13.8								
10/29/02 13:29	13.8								
10/29/02 13:30	5.6		0 CO Cal						
10/29/02 13:31	723.3								
10/29/02 13:32	1990.0								
10/29/02 13:33	1993.1		1994 CO Cal						
10/29/02 13:34	1993.1		1994 CO Cal						
10/29/02 13:35	1993.1		1994 CO Cal						
10/29/02 13:36	1521.4								
10/29/02 13:37	978.7								
10/29/02 13:38	998.3		991 CO Cal						

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 13:39	645.1								
10/29/02 13:40	587.4		594.4 CO Cal						
10/29/02 13:41	464.9								
10/29/02 13:42	282.6								
10/29/02 13:43	300.1		301.9 CO Cal						
10/29/02 13:44	204.3								
10/29/02 13:45	212.6								
10/29/02 13:46	1138.3								
10/29/02 13:47	1186.7								
10/29/02 13:48	1184.7								
10/29/02 13:49	1186.7								
10/29/02 13:50	1190.9								
10/29/02 13:51	1201.2								
10/29/02 13:52	1212.5								
10/29/02 13:53	1192.9								
10/29/02 13:54	1207.3								
10/29/02 13:55	1193.9								
10/29/02 13:56	1187.8								
10/29/02 13:57	1191.9								
10/29/02 13:58	1190.9								
10/29/02 13:59	1208.4								
10/29/02 14:00	1241.3								
10/29/02 14:01	1223.8								
10/29/02 14:02	1219.7								
10/29/02 14:03	1213.5								
10/29/02 14:04	1212.5								
10/29/02 14:05	1235.1								
10/29/02 14:06	1251.6								
10/29/02 14:07	1234.1								
10/29/02 14:08	1223.8								
10/29/02 14:09	1224.8								
10/29/02 14:10	1227.9								
10/29/02 14:11	1269.1								
10/29/02 14:12	1271.2								
10/29/02 14:13	1253.7								
10/29/02 14:14	1269.1								
10/29/02 14:15	1250.6								
10/29/02 14:16	1227.9								
10/29/02 14:17	1246.5								
10/29/02 14:18	1245.4								
10/29/02 14:19	1193.9								
10/29/02 14:20	1220.7								
10/29/02 14:21	1215.6								
10/29/02 14:22	1155.8								
10/29/02 14:23	1162.0								
10/29/02 14:24	1153.8								
10/29/02 14:25	1111.6								
10/29/02 14:26	1081.7								
10/29/02 14:27	1051.8								

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 14:28	1024.0								
10/29/02 14:29	1026.1								
10/29/02 14:30	1002.4								
10/29/02 14:31	1007.6								
10/29/02 14:32	978.7								
10/29/02 14:33	961.2	2		4.05	997.8	991	954.5	12068	53.84
10/29/02 14:34	960.2	2		4.05	997.8	991	953.5	12068	53.78
10/29/02 14:35	933.4	2		4.05	997.8	991	926.8	12068	52.28
10/29/02 14:36	940.6	2		4.05	997.8	991	934.0	12068	52.68
10/29/02 14:37	930.3	2		4.05	997.8	991	923.7	12068	52.10
10/29/02 14:38	905.6	2		4.05	997.8	991	899.1	12068	50.71
10/29/02 14:39	923.1	2		4.05	997.8	991	916.5	12068	51.70
10/29/02 14:40	895.3	2		4.05	997.8	991	888.8	12068	50.13
10/29/02 14:41	897.4	2		4.05	997.8	991	890.8	12068	50.25
10/29/02 14:42	901.5	2		4.05	997.8	991	894.9	12068	50.48
10/29/02 14:43	890.2	2		4.05	997.8	991	883.7	12068	49.84
10/29/02 14:44	897.4	2		4.05	997.8	991	890.8	12068	50.25
10/29/02 14:45	880.9	2		4.05	997.8	991	874.4	12068	49.32
10/29/02 14:46	887.1	2		4.05	997.8	991	880.6	12068	49.67
10/29/02 14:47	853.1	2		4.05	997.8	991	846.7	12068	47.76
10/29/02 14:48	857.2	2		4.05	997.8	991	850.8	12068	47.99
10/29/02 14:49	862.4	2		4.05	997.8	991	855.9	12068	48.28
10/29/02 14:50	840.7	2		4.05	997.8	991	834.4	12068	47.06
10/29/02 14:51	856.2	2		4.05	997.8	991	849.8	12068	47.93
10/29/02 14:52	834.5	2		4.05	997.8	991	828.2	12068	46.72
10/29/02 14:53	811.9	2		4.05	997.8	991	805.6	12068	45.44
10/29/02 14:54	821.2	2		4.05	997.8	991	814.8	12068	45.96
10/29/02 14:55	807.8	2		4.05	997.8	991	801.5	12068	45.21
10/29/02 14:56	802.6	2		4.05	997.8	991	796.4	12068	44.92
10/29/02 14:57	789.2	2		4.05	997.8	991	783.0	12068	44.17
10/29/02 14:58	765.6	2		4.05	997.8	991	759.4	12068	42.84
10/29/02 14:59	768.6	2		4.05	997.8	991	762.5	12068	43.01
10/29/02 15:00	756.3	2		4.05	997.8	991	750.2	12068	42.31
10/29/02 15:01	778.9	2		4.05	997.8	991	772.7	12068	43.59
10/29/02 15:02	772.8	2		4.05	997.8	991	766.6	12068	43.24
10/29/02 15:03	763.5	2		4.05	997.8	991	757.3	12068	42.72
10/29/02 15:04	749.1	2		4.05	997.8	991	743.0	12068	41.91
10/29/02 15:05	728.5	2		4.05	997.8	991	722.4	12068	40.75
10/29/02 15:06	730.5	2		4.05	997.8	991	724.5	12068	40.87
10/29/02 15:07	732.6	2		4.05	997.8	991	726.5	12068	40.98
10/29/02 15:08	722.3	2		4.05	997.8	991	716.3	12068	40.40
10/29/02 15:09	736.7	2		4.05	997.8	991	730.6	12068	41.21
10/29/02 15:10	731.6	2		4.05	997.8	991	725.5	12068	40.92
10/29/02 15:11	742.9	2		4.05	997.8	991	736.8	12068	41.56
10/29/02 15:12	727.4	2		4.05	997.8	991	721.4	12068	40.69
10/29/02 15:13	735.7	2		4.05	997.8	991	729.6	12068	41.16
10/29/02 15:14	742.9	2		4.05	997.8	991	736.8	12068	41.56
10/29/02 15:15	735.7	2		4.05	997.8	991	729.6	12068	41.16
10/29/02 15:16	737.7	2		4.05	997.8	991	731.7	12068	41.27

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Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 15:17	730.5	2		4.05	997.8	991	724.5	12068	40.87
10/29/02 15:18	715.1	2		4.05	997.8	991	709.1	12068	40.00
10/29/02 15:19	731.6	2		4.05	997.8	991	725.5	12068	40.92
10/29/02 15:20	739.8	2		4.05	997.8	991	733.7	12068	41.39
10/29/02 15:21	732.6	2		4.05	997.8	991	726.5	12068	40.98
10/29/02 15:22	730.5	2		4.05	997.8	991	724.5	12068	40.87
10/29/02 15:23	720.2	2		4.05	997.8	991	714.2	12068	40.29
10/29/02 15:24	708.9	2		4.05	997.8	991	702.9	12068	39.65
10/29/02 15:25	723.3	2		4.05	997.8	991	717.3	12068	40.46
10/29/02 15:26	732.6	2		4.05	997.8	991	726.5	12068	40.98
10/29/02 15:27	713.0	2		4.05	997.8	991	707.0	12068	39.88
10/29/02 15:28	706.9	2		4.05	997.8	991	700.9	12068	39.53
10/29/02 15:29	714.1	2		4.05	997.8	991	708.0	12068	39.94
10/29/02 15:30	704.8	2		4.05	997.8	991	698.8	12068	39.42
10/29/02 15:31	740.8	2		4.05	997.8	991	734.7	12068	41.44
10/29/02 15:32	749.1	2		4.05	997.8	991	743.0	12068	41.91
10/29/02 15:33	737.7			*Run 2 Average*			***788.7***		***44.49***
10/29/02 15:34	739.8								
10/29/02 15:35	731.6								
10/29/02 15:36	720.2								
10/29/02 15:37	726.4								
10/29/02 15:38	723.3								
10/29/02 15:39	500.9								
10/29/02 15:40	6.6								
10/29/02 15:41	2.5		0 CO Cal						
10/29/02 15:42	2.5		0 CO Cal						
10/29/02 15:43	2.5		0 CO Cal						
10/29/02 15:44	8.7								
10/29/02 15:45	758.3								
10/29/02 15:46	996.2		991 CO Cal						
10/29/02 15:47	998.3		991 CO Cal						
10/29/02 15:48	850.0								
10/29/02 15:49	731.6								
10/29/02 15:50	716.1								
10/29/02 15:51	716.1								

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Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_0	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 7:13	684.2								
10/31/02 7:14	691.4								
10/31/02 7:15	698.6								
10/31/02 7:16	687.3								
10/31/02 7:17	679.0								
10/31/02 7:18	229.0								
10/31/02 7:19	15.9								
10/31/02 7:20	8.7		0 cal						
10/31/02 7:21	8.7								
10/31/02 7:22	111.6								
10/31/02 7:23	896.3								
10/31/02 7:24	1019.9								
10/31/02 7:25	1022.0		991 cal						
10/31/02 7:26	1022.0		991 cal						
10/31/02 7:27	1022.0		991 cal						
10/31/02 7:28	1022.0		991 cal						
10/31/02 7:29	1022.0		991 cal						
10/31/02 7:30	1730.5								
10/31/02 7:31	1993.1		1994 cal						
10/31/02 7:32	1993.1		1994 cal						
10/31/02 7:33	1993.1		1994 cal						
10/31/02 7:34	1993.1		1994 cal						
10/31/02 7:35	1993.1		1994 cal						
10/31/02 7:36	1971.4								
10/31/02 7:37	1009.6								
10/31/02 7:38	610.1								
10/31/02 7:39	602.8		594 cal						
10/31/02 7:40	602.8								
10/31/02 7:41	599.8								
10/31/02 7:42	657.4								
10/31/02 7:43	558.6								
10/31/02 7:44	322.7								
10/31/02 7:45	309.4		301 cal						
10/31/02 7:46	309.4								
10/31/02 7:47	315.5								
10/31/02 7:48	583.3						#DIV/0!		#DIV/0!
10/31/02 7:49	679.0								
10/31/02 7:50	680.1								
10/31/02 7:51	688.3								
10/31/02 7:52	679.0								
10/31/02 7:53	673.9								
10/31/02 7:54	676.0								
10/31/02 7:55	661.5								
10/31/02 7:56	670.8								
10/31/02 7:57	682.1								
10/31/02 7:58	687.3								
10/31/02 7:59	683.2								
10/31/02 8:00	666.7								
10/31/02 8:01	683.2								

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Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 8:02	678.0								
10/31/02 8:03	673.9								
10/31/02 8:04	681.1								
10/31/02 8:05	692.4								
10/31/02 8:06	672.9								
10/31/02 8:07	692.4								
10/31/02 8:08	698.6								
10/31/02 8:09	680.1								
10/31/02 8:10	687.3								
10/31/02 8:11	685.2								
10/31/02 8:12	680.1								
10/31/02 8:13	689.3								
10/31/02 8:14	691.4								
10/31/02 8:15	682.1								
10/31/02 8:16	690.4								
10/31/02 8:17	688.3								
10/31/02 8:18	690.4								
10/31/02 8:19	688.3								
10/31/02 8:20	674.9								
10/31/02 8:21	682.1								
10/31/02 8:22	697.6								
10/31/02 8:23	682.1								
10/31/02 8:24	682.1								
10/31/02 8:25	693.5								
10/31/02 8:26	687.3								
10/31/02 8:27	692.4								
10/31/02 8:28	680.1								
10/31/02 8:29	689.3								
10/31/02 8:30	694.5								
10/31/02 8:31	681.1								
10/31/02 8:32	687.3								
10/31/02 8:33	687.3								
10/31/02 8:34	667.7								
10/31/02 8:35	664.6								
10/31/02 8:36	667.7								
10/31/02 8:37	655.4								
10/31/02 8:38	670.8								
10/31/02 8:39	667.7								
10/31/02 8:40	674.9								
10/31/02 8:41	691.4								
10/31/02 8:42	693.5								
10/31/02 8:43	704.8								
10/31/02 8:44	717.2								
10/31/02 8:45	717.2								
10/31/02 8:46	728.5								
10/31/02 8:47	721.3								
10/31/02 8:48	720.2								
10/31/02 8:49	719.2								
10/31/02 8:50	719.2								

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October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 8:51	714.1								
10/31/02 8:52	708.9								
10/31/02 8:53	699.6								
10/31/02 8:54	702.7								
10/31/02 8:55	688.3								
10/31/02 8:56	698.6								
10/31/02 8:57	700.7								
10/31/02 8:58	695.5								
10/31/02 8:59	705.8								
10/31/02 9:00	707.9								
10/31/02 9:01	701.7								
10/31/02 9:02	711.0								
10/31/02 9:03	709.9								
10/31/02 9:04	705.8								
10/31/02 9:05	721.3								
10/31/02 9:06	681.1								
10/31/02 9:07	678.0								
10/31/02 9:08	681.1								
10/31/02 9:09	679.0								
10/31/02 9:10	679.0								
10/31/02 9:11	680.1								
10/31/02 9:12	673.9								
10/31/02 9:13	680.1								
10/31/02 9:14	674.9								
10/31/02 9:15	673.9								
10/31/02 9:16	676.0								
10/31/02 9:17	663.6								
10/31/02 9:18	667.7								
10/31/02 9:19	664.6								
10/31/02 9:20	648.2								
10/31/02 9:21	642.0								
10/31/02 9:22	633.7								
10/31/02 9:23	618.3								
10/31/02 9:24	616.2								
10/31/02 9:25	609.0								
10/31/02 9:26	597.7								
10/31/02 9:27	566.8								
10/31/02 9:28	553.4								
10/31/02 9:29	78.7								
10/31/02 9:30	6.6								
10/31/02 9:31	16.9								
10/31/02 9:32	263.0								
10/31/02 9:33	614.2								
10/31/02 9:34	685.2								
10/31/02 9:35	680.1								
10/31/02 9:36	689.3								
10/31/02 9:37	685.2								
10/31/02 9:38	673.9								
10/31/02 9:39	699.6								

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October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 9:40	700.7								
10/31/02 9:41	686.3								
10/31/02 9:42	686.3								
10/31/02 9:43	690.4								
10/31/02 9:44	673.9								
10/31/02 9:45	679.0								
10/31/02 9:46	691.4								
10/31/02 9:47	680.1								
10/31/02 9:48	696.6								
10/31/02 9:49	689.3								
10/31/02 9:50	680.1								
10/31/02 9:51	679.0								
10/31/02 9:52	676.0								
10/31/02 9:53	671.8								
10/31/02 9:54	681.1								
10/31/02 9:55	670.8								
10/31/02 9:56	678.0								
10/31/02 9:57	668.8								
10/31/02 9:58	661.5								
10/31/02 9:59	661.5								
10/31/02 10:00	660.5								
10/31/02 10:01	654.3								
10/31/02 10:02	666.7								
10/31/02 10:03	664.6								
10/31/02 10:04	658.5								
10/31/02 10:05	674.9								
10/31/02 10:06	671.8								
10/31/02 10:07	666.7								
10/31/02 10:08	677.0								
10/31/02 10:09	685.2								
10/31/02 10:10	673.9								
10/31/02 10:11	671.8								
10/31/02 10:12	659.5								
10/31/02 10:13	662.6								
10/31/02 10:14	666.7								
10/31/02 10:15	650.2								
10/31/02 10:16	656.4								
10/31/02 10:17	660.5								
10/31/02 10:18	649.2								
10/31/02 10:19	658.5								
10/31/02 10:20	661.5								
10/31/02 10:21	654.3								
10/31/02 10:22	663.6								
10/31/02 10:23	662.6								
10/31/02 10:24	659.5								
10/31/02 10:25	678.0								
10/31/02 10:26	672.9								
10/31/02 10:27	667.7								
10/31/02 10:28	671.8								

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October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_0	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 10:29	670.8								
10/31/02 10:30	676.0								
10/31/02 10:31	680.1								
10/31/02 10:32	670.8								
10/31/02 10:33	660.5								
10/31/02 10:34	664.6								
10/31/02 10:35	658.5								
10/31/02 10:36	664.6								
10/31/02 10:37	662.6								
10/31/02 10:38	658.5								
10/31/02 10:39	672.9								
10/31/02 10:40	662.6								
10/31/02 10:41	653.3								
10/31/02 10:42	666.7								
10/31/02 10:43	664.6								
10/31/02 10:44	678.0								
10/31/02 10:45	678.0								
10/31/02 10:46	671.8								
10/31/02 10:47	680.1								
10/31/02 10:48	684.2								
10/31/02 10:49	672.9								
10/31/02 10:50	681.1								
10/31/02 10:51	677.0								
10/31/02 10:52	666.7								
10/31/02 10:53	667.7								
10/31/02 10:54	661.5								
10/31/02 10:55	656.4								
10/31/02 10:56	655.4								
10/31/02 10:57	652.3								
10/31/02 10:58	662.6								
10/31/02 10:59	649.2								
10/31/02 11:00	657.4								
10/31/02 11:01	661.5								
10/31/02 11:02	661.5								
10/31/02 11:03	678.0								
10/31/02 11:04	666.7								
10/31/02 11:05	654.3								
10/31/02 11:06	673.9								
10/31/02 11:07	672.9								
10/31/02 11:08	669.8								
10/31/02 11:09	676.0								
10/31/02 11:10	666.7								
10/31/02 11:11	680.1								
10/31/02 11:12	674.9								
10/31/02 11:13	666.7								
10/31/02 11:14	679.0								
10/31/02 11:15	680.1								
10/31/02 11:16	672.9								
10/31/02 11:17	682.1								

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Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 11:18	673.9								
10/31/02 11:19	687.3								
10/31/02 11:20	691.4								
10/31/02 11:21	679.0								
10/31/02 11:22	690.4								
10/31/02 11:23	686.3								
10/31/02 11:24	681.1								
10/31/02 11:25	691.4								
10/31/02 11:26	693.5								
10/31/02 11:27	699.6								
10/31/02 11:28	704.8								
10/31/02 11:29	700.7								
10/31/02 11:30	695.5								
10/31/02 11:31	700.7								
10/31/02 11:32	694.5								
10/31/02 11:33	697.6								
10/31/02 11:34	697.6								
10/31/02 11:35	701.7								
10/31/02 11:36	699.6								
10/31/02 11:37	687.3								
10/31/02 11:38	680.1								
10/31/02 11:39	688.3								
10/31/02 11:40	686.3								
10/31/02 11:41	689.3								
10/31/02 11:42	700.7								
10/31/02 11:43	695.5								
10/31/02 11:44	699.6								
10/31/02 11:45	695.5								
10/31/02 11:46	703.8								
10/31/02 11:47	701.7								
10/31/02 11:48	706.9								
10/31/02 11:49	700.7								
10/31/02 11:50	705.8								
10/31/02 11:51	697.6								
10/31/02 11:52	701.7								
10/31/02 11:53	704.8								
10/31/02 11:54	698.6								
10/31/02 11:55	695.5								
10/31/02 11:56	704.8								
10/31/02 11:57	693.5								
10/31/02 11:58	694.5								
10/31/02 11:59	698.6								
10/31/02 12:00	686.3								
10/31/02 12:01	694.5								
10/31/02 12:02	699.6								
10/31/02 12:03	689.3								
10/31/02 12:04	703.8								
10/31/02 12:05	699.6								
10/31/02 12:06	699.6								

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Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 12:07	704.8								
10/31/02 12:08	711.0								
10/31/02 12:09	697.6								
10/31/02 12:10	706.9								
10/31/02 12:11	715.1								
10/31/02 12:12	709.9								
10/31/02 12:13	693.5								
10/31/02 12:14	708.9								
10/31/02 12:15	712.0								
10/31/02 12:16	702.7								
10/31/02 12:17	708.9								
10/31/02 12:18	701.7								
10/31/02 12:19	760.4								
10/31/02 12:20	988.0								
10/31/02 12:21	1000.3		Interim Cal 991						
10/31/02 12:22	1000.3								
10/31/02 12:23	789.2								
10/31/02 12:24	56.0								
10/31/02 12:25	4.5		Interim Cal 0						
10/31/02 12:26	3.5								
10/31/02 12:27	103.4								
10/31/02 12:28	628.6								
10/31/02 12:29	717.2								
10/31/02 12:30	702.7								
10/31/02 12:31	705.8								
10/31/02 12:32	708.9								
10/31/02 12:33	708.9								
10/31/02 12:34	696.6								
10/31/02 12:35	702.7								
10/31/02 12:36	700.7								
10/31/02 12:37	699.6								
10/31/02 12:38	695.5								
10/31/02 12:39	702.7								
10/31/02 12:40	706.9								
10/31/02 12:41	703.8								
10/31/02 12:42	699.6								
10/31/02 12:43	700.7								
10/31/02 12:44	692.4								
10/31/02 12:45	701.7								
10/31/02 12:46	714.1								
10/31/02 12:47	706.9								
10/31/02 12:48	730.5								
10/31/02 12:49	719.2								
10/31/02 12:50	719.2								
10/31/02 12:51	735.7								
10/31/02 12:52	729.5								
10/31/02 12:53	723.3								
10/31/02 12:54	738.8								
10/31/02 12:55	753.2								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 12:56	764.5								
10/31/02 12:57	791.3								
10/31/02 12:58	805.7								
10/31/02 12:59	824.2								
10/31/02 13:00	852.1								
10/31/02 13:01	875.7								
10/31/02 13:02	887.1								
10/31/02 13:03	900.5								
10/31/02 13:04	941.6								
10/31/02 13:05	969.4								
10/31/02 13:06	981.8								
10/31/02 13:07	1003.4								
10/31/02 13:08	1006.5								
10/31/02 13:09	1008.6								
10/31/02 13:10	1039.5								
10/31/02 13:11	1036.4								
10/31/02 13:12	1032.3								
10/31/02 13:13	1035.4								
10/31/02 13:14	1015.8								
10/31/02 13:15	1006.5								
10/31/02 13:16	1027.1								
10/31/02 13:17	1038.4								
10/31/02 13:18	1039.5								
10/31/02 13:19	1047.7								
10/31/02 13:20	1064.2								
10/31/02 13:21	1057.0								
10/31/02 13:22	1073.5								
10/31/02 13:23	1094.1								
10/31/02 13:24	1092.0								
10/31/02 13:25	1104.4								
10/31/02 13:26	1106.4								
10/31/02 13:27	1111.56								
10/31/02 13:28	1142.453								
10/31/02 13:29	1165.109		***Begin Run 1***						
10/31/02 13:30	1159.96	1		6.25	1008	991	1141.3	13401	71.49
10/31/02 13:31	1182.615	1		6.25	1008	991	1163.7	13401	72.89
10/31/02 13:32	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:33	1188.794	1		6.25	1008	991	1169.9	13401	73.28
10/31/02 13:34	1167.168	1		6.25	1008	991	1148.5	13401	71.94
10/31/02 13:35	1166.139	1		6.25	1008	991	1147.4	13401	71.87
10/31/02 13:36	1157.9	1		6.25	1008	991	1139.3	13401	71.36
10/31/02 13:37	1151.722	1		6.25	1008	991	1133.2	13401	70.98
10/31/02 13:38	1162.02	1		6.25	1008	991	1143.4	13401	71.62
10/31/02 13:39	1171.288	1		6.25	1008	991	1152.5	13401	72.19
10/31/02 13:40	1135.245	1		6.25	1008	991	1116.9	13401	69.96
10/31/02 13:41	1149.662	1		6.25	1008	991	1131.1	13401	70.85
10/31/02 13:42	1164.079	1		6.25	1008	991	1145.4	13401	71.75
10/31/02 13:43	1155.841	1		6.25	1008	991	1137.3	13401	71.24
10/31/02 13:44	1170.258	1		6.25	1008	991	1151.5	13401	72.13

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 13:45	1171.288	1		6.25	1008	991	1152.5	13401	72.19
10/31/02 13:46	1153.781	1		6.25	1008	991	1135.2	13401	71.11
10/31/02 13:47	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 13:48	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:49	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:50	1215.569	1		6.25	1008	991	1196.3	13401	74.94
10/31/02 13:51	1181.585	1		6.25	1008	991	1162.7	13401	72.83
10/31/02 13:52	1190.854	1		6.25	1008	991	1171.9	13401	73.40
10/31/02 13:53	1165.109	1		6.25	1008	991	1146.4	13401	71.81
10/31/02 13:54	1147.602	1		6.25	1008	991	1129.1	13401	70.72
10/31/02 13:55	1141.424	1		6.25	1008	991	1123.0	13401	70.34
10/31/02 13:56	1135.245	1		6.25	1008	991	1116.9	13401	69.96
10/31/02 13:57	1142.453	1		6.25	1008	991	1124.0	13401	70.41
10/31/02 13:58	1144.513	1		6.25	1008	991	1126.0	13401	70.53
10/31/02 13:59	1130.096	1		6.25	1008	991	1111.8	13401	69.64
10/31/02 14:00	1141.424	1		6.25	1008	991	1123.0	13401	70.34
10/31/02 14:01	1115.679	1		6.25	1008	991	1097.5	13401	68.75
10/31/02 14:02	1139.364	1		6.25	1008	991	1121.0	13401	70.21
10/31/02 14:03	1142.453	1		6.25	1008	991	1124.0	13401	70.41
10/31/02 14:04	1132.156	1		6.25	1008	991	1113.8	13401	69.77
10/31/02 14:05	1147.602	1		6.25	1008	991	1129.1	13401	70.72
10/31/02 14:06	1182.615	1		6.25	1008	991	1163.7	13401	72.89
10/31/02 14:07	1173.347	1		6.25	1008	991	1154.6	13401	72.32
10/31/02 14:08	1190.854	1		6.25	1008	991	1171.9	13401	73.40
10/31/02 14:09	1227.926	1		6.25	1008	991	1208.6	13401	75.70
10/31/02 14:10	1205.271	1		6.25	1008	991	1186.2	13401	74.30
10/31/02 14:11	1191.883	1		6.25	1008	991	1172.9	13401	73.47
10/31/02 14:12	1225.866	1		6.25	1008	991	1206.5	13401	75.57
10/31/02 14:13	1212.479	1		6.25	1008	991	1193.3	13401	74.74
10/31/02 14:14	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:15	1221.747	1		6.25	1008	991	1202.5	13401	75.32
10/31/02 14:16	1196.003	1		6.25	1008	991	1177.0	13401	73.72
10/31/02 14:17	1157.9	1		6.25	1008	991	1139.3	13401	71.36
10/31/02 14:18	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:19	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:20	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 14:21	1200.122	1		6.25	1008	991	1181.1	13401	73.98
10/31/02 14:22	1172.317	1		6.25	1008	991	1153.6	13401	72.26
10/31/02 14:23	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 14:24	1200.122	1		6.25	1008	991	1181.1	13401	73.98
10/31/02 14:25	1184.675	1		6.25	1008	991	1165.8	13401	73.02
10/31/02 14:26	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 14:27	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:28	1185.705	1		6.25	1008	991	1166.8	13401	73.09
10/31/02 14:29	1218.658	1		6.25	1008	991	1199.4	13401	75.13
10/31/02 14:30	1220.718			*Run 1 Average*			*1155.1*		*72.35*
10/31/02 14:31	1206.3								
10/31/02 14:32	1236.164								
10/31/02 14:33	1118.768								

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October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 14:34	159.004								
10/31/02 14:35	6.5951								
10/31/02 14:36	3.5057		Zero CO Cal						
10/31/02 14:37	3.5057		Zero CO Cal						
10/31/02 14:38	8.6546								
10/31/02 14:39	656.3926								
10/31/02 14:40	989.0148								
10/31/02 14:41	995.1935		991 CO Cal						
10/31/02 14:42	995.1935		991 CO Cal						
10/31/02 14:43	1068.309								
10/31/02 14:44	1213.509								
10/31/02 14:45	1194.973								
10/31/02 14:46	1191.883								
10/31/02 14:47	1166.139								
10/31/02 14:48	1138.334								
10/31/02 14:49	1182.615								
10/31/02 14:50	1179.526								
10/31/02 14:51	1163.049								
10/31/02 14:52	1172.317								
10/31/02 14:53	1160.99								
10/31/02 14:54	1174.377								
10/31/02 14:55	1160.99								
10/31/02 14:56	1171.288								
10/31/02 14:57	1190.854								
10/31/02 14:58	1191.883								
10/31/02 14:59	1176.437								
10/31/02 15:00	1190.854								
10/31/02 15:01	1192.913								
10/31/02 15:02	1191.883								
10/31/02 15:03	1215.569								
10/31/02 15:04	1186.734								
10/31/02 15:05	1169.228								
10/31/02 15:06	1178.496								
10/31/02 15:07	1181.585								
10/31/02 15:08	1187.764								
10/31/02 15:09	1217.628								
10/31/02 15:10	1228.956								
10/31/02 15:11	1193.943								
10/31/02 15:12	1201.151								
10/31/02 15:13	1210.42								
10/31/02 15:14	1228.956								
10/31/02 15:15	1200.122								
10/31/02 15:16	1233.075								
10/31/02 15:17	1228.956								
10/31/02 15:18	1199.092								
10/31/02 15:19	1219.688								
10/31/02 15:20	1237.194								
10/31/02 15:21	1208.36								
10/31/02 15:22	1221.747								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 15:23	1214.539								
10/31/02 15:24	1203.211								
10/31/02 15:25	1205.271								
10/31/02 15:26	1229.986								
10/31/02 15:27	1212.479								
10/31/02 15:28	1200.122								
10/31/02 15:29	1242.343								
10/31/02 15:30	1227.926								
10/31/02 15:31	1227.926								
10/31/02 15:32	1243.373								
10/31/02 15:33	1216.598								
10/31/02 15:34	1221.747								
10/31/02 15:35	1202.181								
10/31/02 15:36	1218.658								
10/31/02 15:37	1213.509								
10/31/02 15:38	1211.449								
10/31/02 15:39	1221.747								
10/31/02 15:40	1209.39								
10/31/02 15:41	1217.628								
10/31/02 15:42	1234.105								
10/31/02 15:43	1216.598								
10/31/02 15:44	1205.271								
10/31/02 15:45	1209.39								
10/31/02 15:46	1194.973		***Begin Run 2***						
10/31/02 15:47	1190.854	2		4	995.5	991	1186.3	13171	73.03
10/31/02 15:48	1209.39	2		4	995.5	991	1204.8	13171	74.17
10/31/02 15:49	1221.747	2		4	995.5	991	1217.1	13171	74.93
10/31/02 15:50	1209.39	2		4	995.5	991	1204.8	13171	74.17
10/31/02 15:51	1240.284	2		4	995.5	991	1235.7	13171	76.07
10/31/02 15:52	1235.135	2		4	995.5	991	1230.5	13171	75.75
10/31/02 15:53	1231.015	2		4	995.5	991	1226.4	13171	75.50
10/31/02 15:54	1245.432	2		4	995.5	991	1240.8	13171	76.39
10/31/02 15:55	1211.449	2		4	995.5	991	1206.8	13171	74.30
10/31/02 15:56	1201.151	2		4	995.5	991	1196.5	13171	73.66
10/31/02 15:57	1229.986	2		4	995.5	991	1225.4	13171	75.44
10/31/02 15:58	1215.569	2		4	995.5	991	1211.0	13171	74.55
10/31/02 15:59	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:00	1223.807	2		4	995.5	991	1219.2	13171	75.06
10/31/02 16:01	1196.003	2		4	995.5	991	1191.4	13171	73.35
10/31/02 16:02	1197.032	2		4	995.5	991	1192.4	13171	73.41
10/31/02 16:03	1182.615	2		4	995.5	991	1178.0	13171	72.52
10/31/02 16:04	1170.258	2		4	995.5	991	1165.7	13171	71.76
10/31/02 16:05	1185.705	2		4	995.5	991	1181.1	13171	72.71
10/31/02 16:06	1177.466	2		4	995.5	991	1172.9	13171	72.21
10/31/02 16:07	1186.734	2		4	995.5	991	1182.1	13171	72.78
10/31/02 16:08	1192.913	2		4	995.5	991	1188.3	13171	73.16
10/31/02 16:09	1198.062	2		4	995.5	991	1193.5	13171	73.47
10/31/02 16:10	1226.896	2		4	995.5	991	1222.3	13171	75.25
10/31/02 16:11	1211.449	2		4	995.5	991	1206.8	13171	74.30

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 16:12	1214.539	2		4	995.5	991	1209.9	13171	74.49
10/31/02 16:13	1219.688	2		4	995.5	991	1215.1	13171	74.80
10/31/02 16:14	1215.569	2		4	995.5	991	1211.0	13171	74.55
10/31/02 16:15	1200.122	2		4	995.5	991	1195.5	13171	73.60
10/31/02 16:16	1198.062	2		4	995.5	991	1193.5	13171	73.47
10/31/02 16:17	1194.973	2		4	995.5	991	1190.4	13171	73.28
10/31/02 16:18	1206.3	2		4	995.5	991	1201.7	13171	73.98
10/31/02 16:19	1210.42	2		4	995.5	991	1205.8	13171	74.23
10/31/02 16:20	1221.747	2		4	995.5	991	1217.1	13171	74.93
10/31/02 16:21	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:22	1208.36	2		4	995.5	991	1203.8	13171	74.11
10/31/02 16:23	1199.092	2		4	995.5	991	1194.5	13171	73.54
10/31/02 16:24	1219.688	2		4	995.5	991	1215.1	13171	74.80
10/31/02 16:25	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:26	1207.33	2		4	995.5	991	1202.7	13171	74.04
10/31/02 16:27	1217.628	2		4	995.5	991	1213.0	13171	74.68
10/31/02 16:28	1211.449	2		4	995.5	991	1206.8	13171	74.30
10/31/02 16:29	1224.837	2		4	995.5	991	1220.2	13171	75.12
10/31/02 16:30	1244.403	2		4	995.5	991	1239.8	13171	76.32
10/31/02 16:31	1240.284	2		4	995.5	991	1235.7	13171	76.07
10/31/02 16:32	1235.135	2		4	995.5	991	1230.5	13171	75.75
10/31/02 16:33	1241.313	2		4	995.5	991	1236.7	13171	76.13
10/31/02 16:34	1231.015	2		4	995.5	991	1226.4	13171	75.50
10/31/02 16:35	1238.224	2		4	995.5	991	1233.6	13171	75.94
10/31/02 16:36	1251.611	2		4	995.5	991	1247.0	13171	76.77
10/31/02 16:37	1236.164	2		4	995.5	991	1231.5	13171	75.82
10/31/02 16:38	1234.105	2		4	995.5	991	1229.5	13171	75.69
10/31/02 16:39	1234.105	2		4	995.5	991	1229.5	13171	75.69
10/31/02 16:40	1232.045	2		4	995.5	991	1227.4	13171	75.56
10/31/02 16:41	1222.777	2		4	995.5	991	1218.2	13171	74.99
10/31/02 16:42	1225.866	2		4	995.5	991	1221.2	13171	75.18
10/31/02 16:43	1233.075	2		4	995.5	991	1228.5	13171	75.63
10/31/02 16:44	1225.866	2		4	995.5	991	1221.2	13171	75.18
10/31/02 16:45	1233.075	2		4	995.5	991	1228.5	13171	75.63
10/31/02 16:46	1241.313	2		4	995.5	991	1236.7	13171	76.13
10/31/02 16:47	1240.284			***Run 2 Average***			***1212.2***		***74.6***
10/31/02 16:48	1232.045								
10/31/02 16:49	1254.701								
10/31/02 16:50	1280.445								
10/31/02 16:51	1276.326								
10/31/02 16:52	1218.658								
10/31/02 16:53	982.836								
10/31/02 16:54	996.2233		991 CO Cal						
10/31/02 16:55	996.2233								
10/31/02 16:56	862.3506								
10/31/02 16:57	81.7697								
10/31/02 16:58	4.5355								
10/31/02 16:59	4.5355		0 CO Cal						
10/31/02 17:00	4.5355								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_0	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 17:01	4.5355								
10/31/02 17:02	4.5355								
10/31/02 17:03	713.031								
10/31/02 17:04	1258.82								
10/31/02 17:05	1270.147								
10/31/02 17:06	1279.416								
10/31/02 17:07	1303.101								
10/31/02 17:08	1293.833								
10/31/02 17:09	1296.922		*Begin Run 3*						
10/31/02 17:10	1322.667	3		4.5	996.5	991	1316.8	12999	80.01
10/31/02 17:11	1314.428	3		4.5	996.5	991	1308.6	12999	79.51
10/31/02 17:12	1292.803	3		4.5	996.5	991	1287.0	12999	78.20
10/31/02 17:13	1296.922	3		4.5	996.5	991	1291.1	12999	78.45
10/31/02 17:14	1282.505	3		4.5	996.5	991	1276.7	12999	77.57
10/31/02 17:15	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:16	1223.807	3		4.5	996.5	991	1218.1	12999	74.01
10/31/02 17:17	1246.462	3		4.5	996.5	991	1240.7	12999	75.38
10/31/02 17:18	1213.509	3		4.5	996.5	991	1207.8	12999	73.38
10/31/02 17:19	1224.837	3		4.5	996.5	991	1219.1	12999	74.07
10/31/02 17:20	1255.73	3		4.5	996.5	991	1250.0	12999	75.95
10/31/02 17:21	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:22	1245.432	3		4.5	996.5	991	1239.7	12999	75.32
10/31/02 17:23	1259.849	3		4.5	996.5	991	1254.1	12999	76.20
10/31/02 17:24	1260.879	3		4.5	996.5	991	1255.1	12999	76.26
10/31/02 17:25	1267.058	3		4.5	996.5	991	1261.3	12999	76.63
10/31/02 17:26	1287.654	3		4.5	996.5	991	1281.9	12999	77.88
10/31/02 17:27	1280.445	3		4.5	996.5	991	1274.7	12999	77.45
10/31/02 17:28	1263.969	3		4.5	996.5	991	1258.2	12999	76.45
10/31/02 17:29	1277.356	3		4.5	996.5	991	1271.6	12999	77.26
10/31/02 17:30	1294.862	3		4.5	996.5	991	1289.1	12999	78.32
10/31/02 17:31	1281.475	3		4.5	996.5	991	1275.7	12999	77.51
10/31/02 17:32	1269.118	3		4.5	996.5	991	1263.3	12999	76.76
10/31/02 17:33	1268.088	3		4.5	996.5	991	1262.3	12999	76.70
10/31/02 17:34	1252.641	3		4.5	996.5	991	1246.9	12999	75.76
10/31/02 17:35	1231.015	3		4.5	996.5	991	1225.3	12999	74.45
10/31/02 17:36	1248.522	3		4.5	996.5	991	1242.8	12999	75.51
10/31/02 17:37	1234.105	3		4.5	996.5	991	1228.4	12999	74.63
10/31/02 17:38	1242.343	3		4.5	996.5	991	1236.6	12999	75.13
10/31/02 17:39	1253.671	3		4.5	996.5	991	1247.9	12999	75.82
10/31/02 17:40	1234.105	3		4.5	996.5	991	1228.4	12999	74.63
10/31/02 17:41	1227.926	3		4.5	996.5	991	1222.2	12999	74.26
10/31/02 17:42	1250.581	3		4.5	996.5	991	1244.8	12999	75.63
10/31/02 17:43	1240.284	3		4.5	996.5	991	1234.5	12999	75.01
10/31/02 17:44	1247.492	3		4.5	996.5	991	1241.7	12999	75.45
10/31/02 17:45	1254.701	3		4.5	996.5	991	1248.9	12999	75.88
10/31/02 17:46	1238.224	3		4.5	996.5	991	1232.5	12999	74.88
10/31/02 17:47	1240.284	3		4.5	996.5	991	1234.5	12999	75.01
10/31/02 17:48	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:49	1249.552	3		4.5	996.5	991	1243.8	12999	75.57

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 17:50	1278.386	3		4.5	996.5	991	1272.6	12999	77.32
10/31/02 17:51	1292.803	3		4.5	996.5	991	1287.0	12999	78.20
10/31/02 17:52	1252.641	3		4.5	996.5	991	1246.9	12999	75.76
10/31/02 17:53	1244.403	3		4.5	996.5	991	1238.7	12999	75.26
10/31/02 17:54	1267.058	3		4.5	996.5	991	1261.3	12999	76.63
10/31/02 17:55	1237.194	3		4.5	996.5	991	1231.5	12999	74.82
10/31/02 17:56	1227.926	3		4.5	996.5	991	1222.2	12999	74.26
10/31/02 17:57	1244.403	3		4.5	996.5	991	1238.7	12999	75.26
10/31/02 17:58	1236.164	3		4.5	996.5	991	1230.4	12999	74.76
10/31/02 17:59	1232.045	3		4.5	996.5	991	1226.3	12999	74.51
10/31/02 18:00	1203.211	3		4.5	996.5	991	1197.5	12999	72.76
10/31/02 18:01	1145.543	3		4.5	996.5	991	1139.9	12999	69.26
10/31/02 18:02	1080.666	3		4.5	996.5	991	1075.1	12999	65.32
10/31/02 18:03	1049.772	3		4.5	996.5	991	1044.2	12999	63.45
10/31/02 18:04	1069.338	3		4.5	996.5	991	1063.8	12999	64.63
10/31/02 18:05	1129.066	3		4.5	996.5	991	1123.4	12999	68.26
10/31/02 18:06	1173.347	3		4.5	996.5	991	1167.7	12999	70.95
10/31/02 18:07	1174.377	3		4.5	996.5	991	1168.7	12999	71.01
10/31/02 18:08	1167.168	3		4.5	996.5	991	1161.5	12999	70.57
10/31/02 18:09	1150.692	3		4.5	996.5	991	1145.0	12999	69.57
10/31/02 18:10	1134.215			*Run 3 Average*			*1231.0*		*74.8*
10/31/02 18:11	1163.049								
10/31/02 18:12	350.5449								
10/31/02 18:13	17.9228								
10/31/02 18:14	4.5355		0 CO Cal						
10/31/02 18:15	4.5355								
10/31/02 18:16	149.7359								
10/31/02 18:17	894.274								
10/31/02 18:18	997.2531		991 CO Cal						
10/31/02 18:19	998.2829								
10/31/02 18:20	968.4189								

APPENDIX – C

Laboratory Analysis

TECHNICAL SERVICES, INC.
ENVIRONMENTAL CONSULTANTS

For Ambient Air Services, Inc.
106 AMBIENT AIR WAY
STARKE, FL 32091
Contact: Joe Cooksey

Report Date 11-Nov-02
Date Received 11/01/2002 @ 16:15
Purchase Order #:

CERTIFICATE OF ANALYSIS

LAB	MATRIX	SAMPLE DATE	SAMPLE TIME	SAMPLED BY
SAMPLE DESCRIPTION				
02110037	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 1				
02110038	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 2				
02110039	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 3				
02110040	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 1				
02110041	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 2				
02110042	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 3				
02110043		UNKNOWN	UNKNOWN	
GP/PALATKA, BLEACH PLANT, FIELD BLANK				

Respectfully submitted,
Technical Services, Inc.

Ambient Air Services, Inc.

Lab No.	Parameter	Result		Code	Method	Detection Limit
02110037	Chloride in base	214.2	ug/ml Cl-	A	Method 26A	0.02
02110038	Chloride in base	134.3	ug/ml Cl-		Method 26A	0.02
02110039	Chloride in base	151.1	TOTAL UG		Method 26A	0.02
02110040	Chloride in base	438.9	TOTAL UG		Method 26A	0.02
02110041	Chloride in base	320.0	TOTAL UG		Method 26A	0.02
02110042	Chloride in base	354.6	TOTAL UG		Method 26A	0.02
02110043	Chloride in base	104.3	TOTAL UG	A	Method 26A	0.02

Ambient Air Services, Inc.

Lab No.	Parameter	Date of Analysis	Analysis Time	Analyst	Prep Date
02110037	Chloride in base	11/11/2002		CRB	
02110038	Chloride in base	11/11/2002		CRB	
02110039	Chloride in base	11/11/2002		CRB	
02110040	Chloride in base	11/11/2002		CRB	
02110041	Chloride in base	11/11/2002		CRB	
02110042	Chloride in base	11/11/2002		CRB	
02110043	Chloride in base	11/11/2002		CRB	

APPENDIX – D

Equipment Calibration Data
- Carbon Monoxide Analyzer Calibration
- Annual Meter Calibration
- Post Test Meter Calibration
- Pitot Tube Calibration
- Thermocouple Calibration

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test

October 29, 2002
Equipment List

Carbon Monoxide Instrument: **Manufacturer -** Thermo Environmental Instruments **Model -** 48 CHL
Serial Number - 63892-341
CO Range - zero to 2000 ppm

Calibration Gas Standards		Concentration	Manufacturer	Cylinder Number	Expiration Date	PSI
Zero	Zero	0.00	Air Products	Nitrogen	N/A	1200
Low	CO	991.00	Air Liquide	CC121974	Jul-04	800
	CO	1994.00	Air Liquide	CC70989	Jul-04	900
Mid	CO	594.40	Praxair	SA12251	Jan-04	1200
High	CO	301.90	Air Liquide	CC121974	Jul-04	1100

Description of Sampling System :
6', 1/4" SS probe to valve to H_2O condenser to 200 feet 3/8 Teflon sample line to SS pump to instruments
all calibration gases injected direct to probe valve location
Sampling probe located nominally mid of 42" stack

Test Participants :
CO Testing - Joe Cooksey, Ambient Air Services, Inc.
Joe Taylor - Georgia-Pacific Representitive

Other Comments :

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002
Calibration Sheet

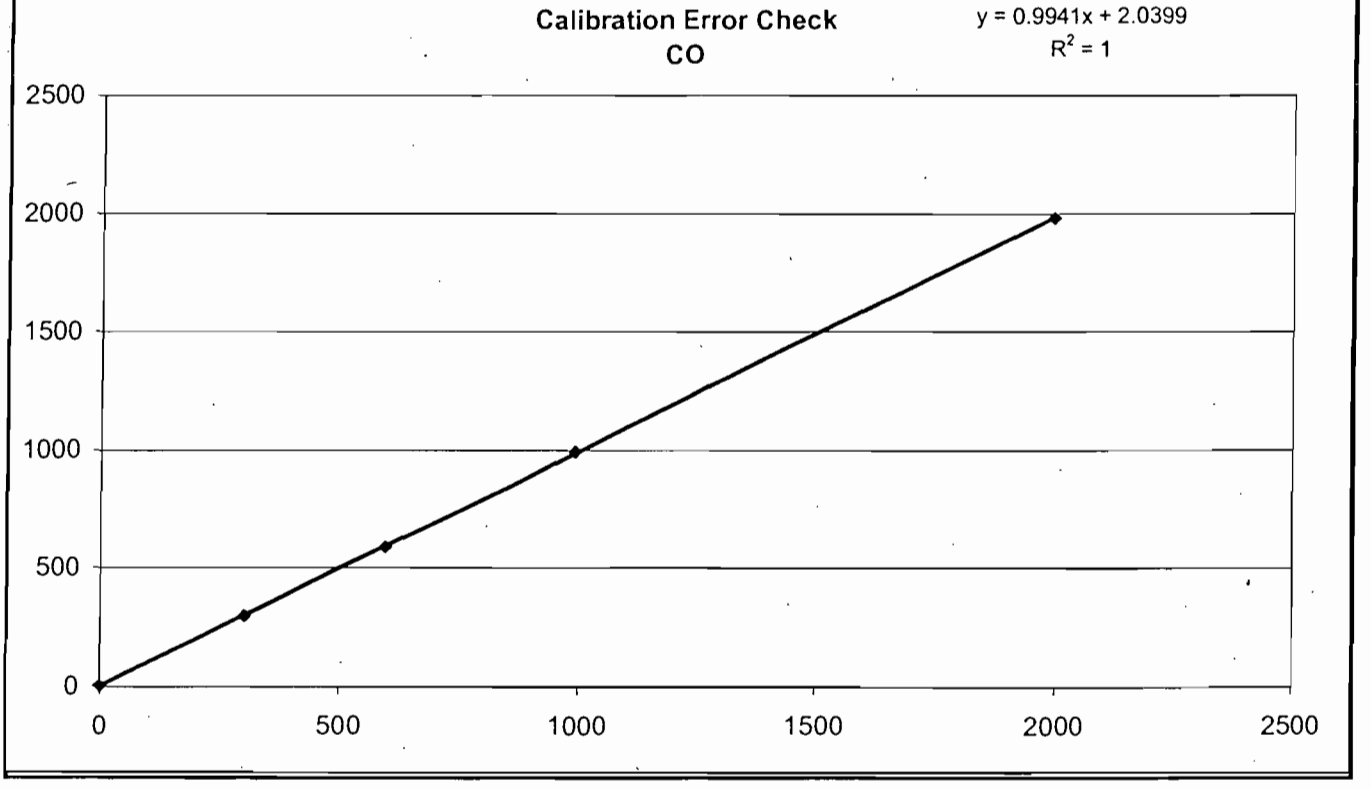
Initial Calibration

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	12:00	4
CO	991	12:00	995.4
CO	1994	12:00	1982.2
CO	594.4	12:00	588
CO	301.9	12:00	299.1

% Error of Range Table

Inject (ppm)		Time	% Error of Range
Gas	Conc.		CO
Zero	0	12:00	0.20%
CO	991	12:00	0.22%
CO	1994	12:00	-0.59%
CO	594.4	12:00	-0.32%
CO	301.9	12:00	-0.14%



Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002

Calibration Sheet

Calibration - Post Run 1

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	13:30	5.6
CO	991	13:30	998.3

Drift Analysis From Initial Calibrations to the End of Run 1

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	13:30	0.08%
CO	991	13:30	0.14%

Drift Variables for Run 1

Variable	CO	
Co	4.80	
Cm	996.85	
Cma	991.00	

Calibration - Post Run 2

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0		2.5
CO	991		997.3

Drift Analysis From Initial Calibrations to the End of Run 2

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	0:00	-0.08%
CO	991	0:00	0.09%

Drift Variables for Run 2

Variable	CO	
Co	4.05	
Cm	997.80	
Cma	991	

Calibration - Post Run 3

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0		
CO	991		

Drift Analysis From Initial Calibrations to the End of Run 3

Inject (ppm)	Time	Drift Analysis (%)

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002

Calibration Sheet

Gas	Conc.		CO
Zero	0	0:00	-0.20%
CO	991	0:00	-49.77%

Drift Variables for Run 3

Variable	CO	
Co	1.25	
Cm	498.65	
Cma	991	

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test

October 31, 2002
Equipment List

Carbon Monoxide Instrument: **Manufacturer -** Thermo Environmental Instruments **Model -** 48 CHL
Serial Number - 63892-341
CO Range - zero to 2000 ppm

Calibration Gas Standards		Concentration	Manufacturer	Cylinder Number	Expiration Date	PSI
Zero	Zero	0.00	Air Products	Nitrogen	N/A	1200
Low	CO	991.00	Air Liquide	CC121974	Jul-04	800
	CO	1994.00	Air Liquide	CC70989	Jul-04	900
Mid	CO	594.40	Praxair	SA12251	Jan-04	1200
High	CO	301.90	Air Liquide	CC121974	Jul-04	1100

Description of Sampling System :

6', 1/4" SS probe to valve to H_2O condenser to 200 feet 3/8 Teflon sample line to SS pump to instruments
all calibration gases injected direct to probe valve location
Sampling probe located nominally mid of 42" stack

Test Participants :

CO Testing - Randy Weston, Ambient Air Services, Inc.
Joe Taylor, Georgia Pacific Palatka Environmental contact

Other Comments :

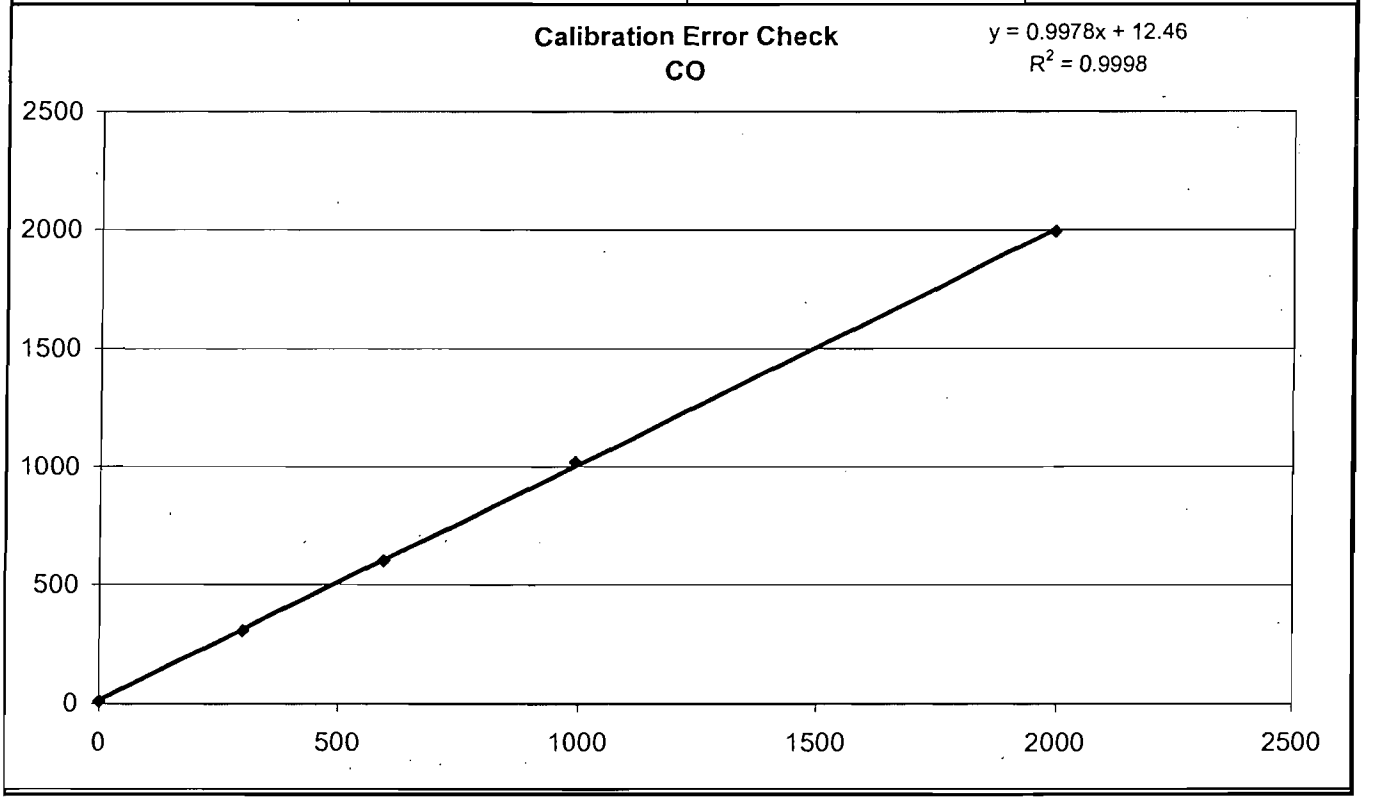
Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002
Calibration Sheet

Initial Calibration
Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	12:00	9
CO	991	12:00	1021
CO	1994	12:00	1994
CO	594.4	12:00	602
CO	301.9	12:00	309

% Error of Range Table

Inject (ppm)		Time	% Error of Range
Gas	Conc.		CO
Zero	0	12:00	0.45%
CO	991	12:00	1.50%
CO	1994	12:00	0.00%
CO	594.4	12:00	0.38%
CO	301.9	12:00	0.36%



Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002

Calibration Sheet

Calibration - Post Run 1

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	14:36	3.5
CO	991	14:42	995

Drift Analysis From Initial Calibrations to the End of Run 1

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	14:36	-0.28%
CO	991	14:42	-1.30%

Drift Variables for Run 1

Variable	CO	
Co	6.25	
Cm	1008.00	
Cma	991.00	

Calibration - Post Run 2

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	16:59	4.5
CO	991	16:54	996

Drift Analysis From Initial Calibrations to the End of Run 2

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	16:59	-0.23%
CO	991	16:54	-1.25%

Drift Variables for Run 2

Variable	CO	
Co	4	
Cm	995.50	
Cma	991	

Calibration - Post Run 3

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	18:14	4.5
CO	991	18:18	997

Drift Analysis From Initial Calibrations to the End of Run 3

Inject (ppm)	Time	Drift Analysis (%)

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002

Calibration Sheet

Gas	Conc.		CO
Zero	0	18:14	-0.23%
CO	991	18:18	-1.20%

Drift Variables for Run 3

Variable	CO	
Co	4.5	
Cm	996.50	
Cma	991	

Ambient Air Services, Inc. - Method 5 Dry Gas Meter Annual Calibration

USING CALIBRATED CRITICAL ORIFICES

5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	Box 10
DGM Model Number	6947372
DGM Serial Number	

Calibration Conditions			
Date	Time	5-Sep-02	10:00
Barometric Pressure		29.8	in Hg
Theoretical Critical Vacuum[1]		14.1	in Hg
Calibration Technician		JOE ELLIOTT	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*°R^{1/2})/(in.Hg*min)$.

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
14.1	2.8	55.603	67.154	92	92	63	0.6213	89	89	21
6.0	4.6	67.154	75.011	98	98	73	0.8486	83	80	19
11.7	1.4	75.011	82.876	99	98	55	0.4793	81	79	22
13.4	0.8	82.876	88.974	98	99	48	0.3740	79	77	24
18.4	0.4	88.974	95.110	99	99	40	0.2511	77	77	24

Results								
Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
11.080	0.786	11.142	0.790	1.006	0.007	0.790	2.438	0.388
7.489	1.248	6.520	1.087	0.871	-0.128	1.087	2.114	0.063
7.431	0.635	7.191	0.615	0.968	-0.031	0.615	1.978	-0.072
5.753	0.429	6.439	0.481	1.119	0.121	0.481	1.890	-0.160
5.778	0.314	5.941	0.323	1.028	0.030	0.323	1.832	-0.219
				0.998	Y Average		2.050	ΔH@ Average

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

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature Joe Elliott Date 5 Sept 02

Quality Assurance Data Review:

Signature Dan Hartlein Date 5 Sept 02

Ambient Air Services, Inc. - Method 5 Post Test Dry Gas Meter Calibration

USING CALIBRATED CRITICAL ORIFICES

3-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	Box 10
Pre Test Y Value	0.989
DGM Serial Number	###############

Calibration Conditions			
Date	Time	1-Nov-02	13:12
Barometric Pressure		29.9	in Hg
Theoretical Critical Vacuum[1]		14.1	in Hg
Calibration Technician		JE	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3 * ^oR^{1/2})/(in.Hg * min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
7.5	2.3	401.578	407.667	72	75	63	0.6213	71	72	21
62.9	2.3	407.667	459.392	75	76	63	0.6213	73	74	21
14.5	2.3	459.392	471.442	79	79	63	0.6213	74	75	21

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
6.056	0.808	6.043	0.806	0.998	0.009	0.806	1.995	0.003
51.255	0.815	50.589	0.804	0.987	-0.002	0.804	1.995	0.003
11.863	0.818	11.651	0.804	0.982	-0.007	0.804	1.985	-0.006
				0.989	Y Average		1.992	ΔH@ Average

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

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature Joe Elliott Date 11-01-02

Quality Assurance Data Review:

Signature Dan Stoltzfus Date 11-01-02

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PITOT TUBE CALIBRATION MEASUREMENTS

DATE CALIBRATED 11/02/02 PITOT TUBE 6B

Pitot tube assembly level? ✓ (Yes) No

Pitot tube openings damaged? ____ Yes (explain below) ✓ (No)

α_1 = 10 ° (<10°), α_2 = 0.5 ° (<10°), β_1 = 0.0 ° (<5°),

β_2 = 0.0 ° (<5°)

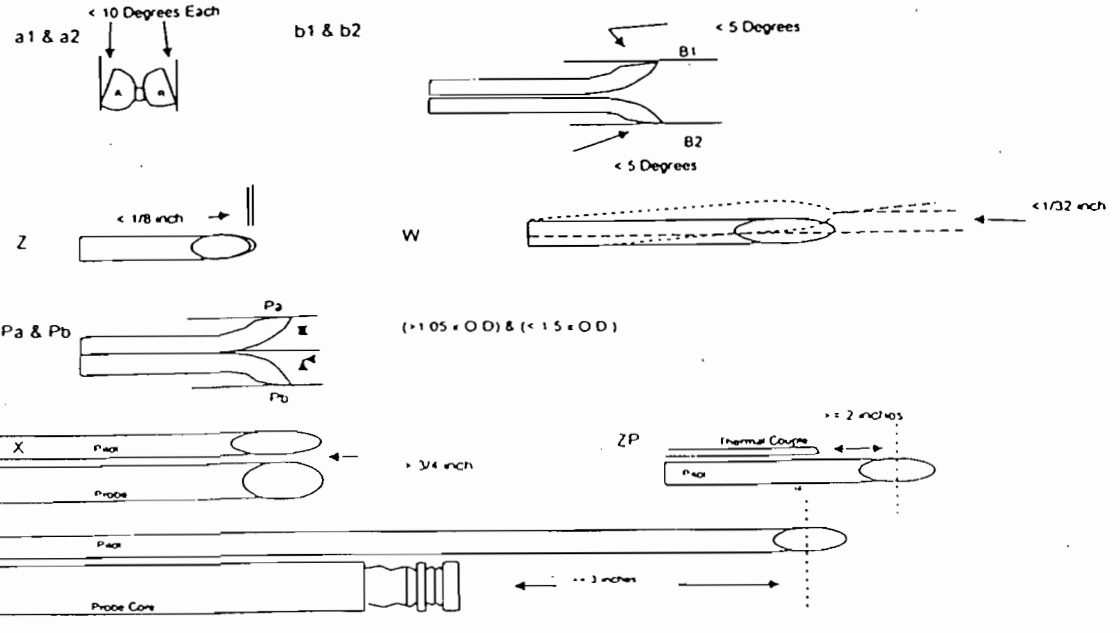
γ = 1.5 °, θ = .5 °, A = 1.202 in. = (Pa + Pb)

z = A sin γ = 0.031 in.; <0.32 / <1/8 in.

w = A sin θ = 0.010 in.; <0.08 / <1/32 in.

P_a .600 in. P_b .602 in. D_t = .375

Calibration required? ____ Yes ✓ (No)



THERMOCOUPLE CALIBRATION FORM

e 11/02/02 Time 08:30 Standard Thermometer Type MERCURY IN GLASS
bient Temperature 79 Source GP PALATKA Manufacturer PRINCO
ometric Pressure 30.05 Source Serial Number 0932
hnician's Signature Pyrometer Manufacturer ATKINS Model 396 K
Serial Number AASI #4 Meter Box # 10

TEMPERATURE SOURCE (A)													
REFERENCE THERMOMETER	Actual Reading	AMBIENT AIR			BOILING H_2O			ICE BATH					
	Corrected Temperature	79°			212°			32°					
CALIBRATED THERMOCOUPLE													
Serial Number	Location	Indicated Temp.	Difference (B)	Percent Diff. (C)	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.
6 B	Stack	79	0		212	0		32	0				
30 x 10	Filter	78	-1		211	-1		32	0				
BOX 4	Impinger	80	+1		212	0		31	-1				
30 x 10	Meter In	79	0		212	0		32	0				
30 x 10	Meter Out	79	0		213	+1		33	+1				

mments:

ration Tolerances Stack = 1.5% of value, Filter Box = ±5.4°F, Impinger = ±2°F, Meter = ±5.4°F (40CFR Pt 60, App. A Method 5, and QA Handbook Section 3.4, Method 5, page 13, Rev. 0)

Type of calibration system used (B) Reference - Indicated = Difference

$$\left[\frac{(\text{ref. temp. °F} + 460) - (\text{indicated temp. °F} + 460)}{(\text{reference temp. °F} + 460)}\right] \times 100$$

APPENDIX – E

Sample Chain of Custody

Technical Services, Inc.
2901 Danese St., Jacksonville, FL 32206
(904) 353-5761 / fax (904) 358-2908

02110037-1
thru
02110043-1

CHAIN of CUSTODY RECORD

CLIENT NAME & ADDRESS (REPORT TO BE SENT TO:)
Ambient Air Services, Inc.

REMARKS:
Na2S2O3 added in Sampling @ TSI

PROJ. NO.

PROJECT NAME/ ADDRESS:
GP/Pottka
Bleach Plant

SAMPLERS: (SIGNATURE)

Sample Location ID	SAMPLE DATE	TIME	COMP	GRAB	TOTAL NO. of Containers	BOTTLE MAKEUP: 0.1 N Na2S2O4 ½ gl. Poly	BOTTLE MAKEUP: Amber Glass 0.1 N Na2S2O4	BOTTLE MAKEUP: ½ Gal. Poly w/ Nitric	PARAMETERS
Run 1 Imp. Catch	10/31/02				1	✓			Cl- / BASE
2	"				1	✓			
3	"				1	✓			
Run 1 Imp Catch	10/29/02				1		✓		
2	"				1		✓		
3	"				1		✓		
FIELD Blank					1			1	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
		H. C. Gray	1430 - 11/1/02
RELINQUISHED BY: H. C. Gray	DATE/TIME 1615 - 11/1/02	RECEIVED BY:	DATE/TIME
		RECEIVED FOR LABORATORY BY: Debra A. Dalton	DATE/TIME 11/1/02 1615

Best Available Copy

02110037-1
thru
02110043-1

Technical Services, Inc.
2901 Danese St., Jacksonville, FL 32206
(904) 353-5761 / fax (904) 358-2908

CHAIN of CUSTODY RECORD

CLIENT NAME & ADDRESS (REPORT TO BE SENT TO:) Ambient Air Services, Inc.

REMARKS

PROJ. NO.

PROJECT NAME/ ADDRESS: GP/Pratt Bleach Plant

SAMPLERS: (SIGNATURE)

Sample Location ID	SAMPLE DATE	TIME	COMP	GRAB	TOTAL NO. of Containers	BOTTLE MAKEUP: 0.1 N NaOH 40 ml. poly	BOTTLE MAKEUP: Amber Glass 1/2 gal N NaOH	PARAMETERS
Run 1 Imp Catch	10/31/02				1	✓		Cl- / BASE
2	"				1	✓		
3	"				1	✓		
Run 1 Imp Catch	10/29/02				1		✓	
2	"				1		✓	
3	"				1		✓	
FIELD Blank					1			

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Ronnie Spellings	0900 10-30-02	D.W. Fairfield	10/30/02 09:00
D.W. Fairfield	11/1/02 1430	H. C. Gray	1430 - 11/1/02
H. C. Gray	1615 - 11/1/02		
		RECEIVED FOR LABORATORY BY: Debra S. Dalton	DATE/TIME 11/1/02 1615

APPENDIX - F

Calibration Gas Certificates

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015
Tel. (610) 691-2474
Fax (610) 758-8384

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR SOUTHEAST **P.O NUMBER** 333045-00

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE 503.2PPM GMIS VS	1680B	CLM-009396	490.4 PPM

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. COMPONENT CARBON MONOXIDE 503.2PPM GMIS ANALYZER MAKE-MODEL-S/N Siemens Ultramat 5E S/N B8-900

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED LAST CALIBRATION DATE 12/31/00

FIRST ANALYSIS DATE 12/27/00 SECOND ANALYSIS DATE 01/03/01

Z	0	R	503	C	301	CONC.	301.3	Z	0	R	504	C	302	CONC.	[illegible]
R	502	Z	0	C	302	CONC.	302.3	R	504	Z	0	C	302	CONC.	301.5
Z	0	C	302	R	503	CONC.	302.5	Z	0	C	303	R	504	CONC.	302.5
U/M	ppm			MEAN TEST ASSAY			302.0	U/M	ppm			MEAN TEST ASSAY			301.9

VALUES NOT VALID BELOW 150 PSIG
UNCERTAINTIY OF CARBON MONOXIDE: ±1.9PPM

THIS CYLINDER NO. CC114912
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA-600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 01/03/01
EXPIRATION DATE 01/03/04 TERM

CERTIFIED CONCENTRATION

CARBON MONOXIDE	301.9PPM
AIR	BALANCE

ANALYZED BY JOHN PRIBISH

CERTIFIED BY KEVIN BRADY

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015
Tel. (610) 691-2474
Fax (610) 758-8384

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR SOUTHEAST **P.O NUMBER** 333045-00

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE 503.2PPM GMIS VS	1680B	CLM-009396	490.4 PPM

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. COMPONENT CARBON MONOXIDE 503.2PPM GMIS ANALYZER MAKE-MODEL-S/N Siemens Ultramat 5E S/N B8-900

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED LAST CALIBRATION DATE 12/31/00

FIRST ANALYSIS DATE 12/27/00				SECOND ANALYSIS DATE 01/03/01			
Z 0	R 503	C 595	CONC. 595.6	Z 0	R 504	C 595	CONC. 594.1
R 502	Z 0	C 595	CONC. 595.6	R 504	Z 0	C 595	CONC. 594.1
Z 0	C 594	R 503	CONC. 594.6	Z 0	C 595	R 504	CONC. 594.1
U/M ppm		MEAN TEST ASSAY	595.3	U/M ppm		MEAN TEST ASSAY	594.1

VALUES NOT VALID BELOW 150 PSIG
UNCERTAINTIY OF CARBON MONOXIDE: ±4.2PPM

THIS CYLINDER NO. SA12251
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA 600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 01/03/01
EXPIRATION DATE 01/03/04 TERM

CERTIFIED CONCENTRATION

CARBON MONOXIDE	594.7PPM
AIR	BALANCE

ANALYZED BY JOHN PRIBISH

CERTIFIED BY KEVIN [illegible]

AIR LIQUIDE™

CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

Cyl. Number:	Cyl. Pressure:*	Document Number:
CC121974	1667psig	9032348
Assay Date:	**Expiration Date:**	**Item Number:**
07/23/01	07/22/04	
Customer:	**P.O. Number:**	**Notes:**
Technical Services	070601	

*Mixture is valid only to 150 psig

COMPONENT Name	REQUESTED Concentration	ASSAY Concentration
Carbon Monoxide	1000 ppm	991 ±15 ppm
Nitrogen	Balance	Balance

EPA Protocol, Section No. 2.2 Procedure: G-1

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/123

REFERENCE STANDARD EMPLOYED FOR ANALYSIS

Std name	Std #	Conc.	Units	Std. Error	Comp.	Balance	Cyl. No.	Exp. Date	Sample No.
GMIS91	GMIS91	1500.0	ppm	21.0	CO	N2	CC113811	06/22/03	N.A.

Component 1: Carbon Monoxide Gas Analyzer Employed		Component 2: None Gas Analyzer Employed	Component 3: Gas Analyzer Employed
Manufacturer:	KVB/Analect	Manufacturer:	Manufacturer:
Model Number:	EN3024	Model Number:	Model Number:
Serial Number:	3024	Serial Number:	Serial Number:
Analytical Principle:	FTIR	Analytical Principle:	Analytical Principle:
MPC Calibrated:	07/05/01	MPC Calibrated:	MPC Calibrated:

07/16/01	Trial 1	Trial 2	Trial 3	Units		07/23/01	Trial 1	Trial 2	Trial 3	Units
Zero	-0.11	-0.33	-0.28			Zero	-0.02	0.05	0.16	
Reference 1	1614.16	1639.01	1648.95		Component 1	Reference 1	1673.01	1678.36	1674.41	
Reference 2						Reference 2				
Candidate	1061.20	1082.36	1088.32		Carbon Monoxide	Candidate	1113.28	1105.85	1105.95	
Result	974.23	993.65	999.12	ppm		Result	996.79	990.14	990.23	ppm
		Mean Result:	989.00	ppm				Mean Result:	992.39	ppm

Analyst:

Air Liquide America Corporation
11426 Fairmont Parkway, La Porte, Texas 77571-6000
Phone: (281) 474-8400 Fax (281) 474-8419

AIR LIQUIDE™

CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

Cyl. Number:	Cyl. Pressure:*	Document Number:
CC70989	1667psig	9032348
Assay Date:	**Expiration Date:**	**Item Number:**
07/23/01	07/22/04	
Customer:	**P.O. Number:**	**Notes:**
Technical Services	070601	

*Mixture is valid only to 150 psig

COMPONENT Name	REQUESTED Concentration	ASSAY Concentration
Carbon Monoxide	2000 ppm	1994 ±30 ppm
Nitrogen	Balance	Balance

EPA Protocol, Section No. 2.2
Procedure: G1

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/123

REFERENCE STANDARD EMPLOYED FOR ANALYSIS

Std name	Std #	Conc.	Units	Std. Error	Comp.	Balance	Cyl. No.	Exp. Date	Sample No.
GMIS91	GMIS91	1500.0	ppm	21.0	CO	N2	CC113811	06/22/03	N.A.

Component 1: Carbon Monoxide Gas Analyzer Employed		Component 2: None Gas Analyzer Employed	Component 3: Gas Analyzer Employed
Manufacturer:	KVB/Analect	Manufacturer:	Manufacturer:
Model Number:	EN3024	Model Number:	Model Number:
Serial Number:	3024	Serial Number:	Serial Number:
Analytical Principle:	FTIR	Analytical Principle:	Analytical Principle:
MPC Calibrated:	07/05/01	MPC Calibrated:	MPC Calibrated:

07/16/01	Trial 1	Trial 2	Trial 3	Units
Zero	-0.11	-0.33	-0.28	
Reference 1	1614.16	1639.01	1648.95	
Reference 2				
Candidate	2132.25	2176.69	2193.10	
Result	1957.28	1998.07	2013.12	ppm
		Mean Result:	1989.49	ppm

Component 1
Carbon Monoxide

07/23/01	Trial 1	Trial 2	Trial 3	Units
Zero	-0.02	0.05	0.16	
Reference 1	1673.01	1678.36	1674.41	
Reference 2				
Candidate	2226.87	2236.96	2235.43	
Result	1993.92	2002.95	2001.58	ppm
		Mean Result:	1999.49	ppm

Analyst:

Air Liquide America Corporation
11426 Fairmont Parkway, La Porte, Texas 77571-6000
Phone: (281) 474-8400 Fax: (281) 474-8419

Airgas

Airgas Specialty Gases
12722 South Wentworth Avenue
Chicago, IL 60628
773.785.3000 Fax: 773.785.1928
www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Certification performed in accordance with "EPA Traceability Protocol (Sept.1997)" using assay procedures listed.

Cylinder No:	SG9140092BAL	Order No:	008973-00
Certification Date:	09/9/2002	Expiration Date:	09/9/2005
Cylinder Pressure:	2000	Part No:	E02NI95E15A0077

*Do not use cylinder below 150 psig.

Component	*Certified Concentration*	*Unit of Measure*	*Accuracy*	*Procedure*	*Analytical Principle*
Carbon Dioxide	5.049	%	1%	G-1	NDIR
Nitrogen	Balance				

Nox ppm
(Reference Value Only)

Reference Standard Information

Type	*Component*	*Concentration*	*Unit*	*Cylinder Number*
Ntrm	Carbon Dioxide	4.204	%	SG9169571BAL

Analytical Data

Component 1: Carbon Dioxide

1st Analysis Date: 09/9/2002

Zero	0.000	Cand	5.046	Ref	4.202
Zero	0.000	Cand	5.045	Ref	4.200
Zero	0.000	Cand	5.046	Ref	4.201

2nd Analysis Date:

Zero		Cand		Ref	
Zero		Cand		Ref	
Zero		Cand		Ref	

Analyzed by: _____ Approved by: _____

APPENDIX – G

Process Data

PRODUCTION DATA FOR OCTOBER 29 AND 31, 2002 CO TESTING

DATE	10/29/02		10/31/02			
RUN	1	2	1	2	3	
TIME	1225-1324	1433-1532	1330-1429	1547-1646	1710-1809	

Notes: ADTBPH is air-dried tons of bleached pulp per hour
Kappa is the pre-washer kappa
%ClO2 is the %ClO2 applied in that stage

		Do Stage				Eop Stage		D1 Stage		
Run	ADTBPH	%SW	%HW	Kappa	%ClO2	%SW	%HW	%SW	%HW	%ClO2
1 (29th)	49.8	100	0	22.0	2.0	100	0	100	0	0.5
2 (29th)	30.1	100	0	22.4	2.0	100	0	100	0	0.6
1 (31st)	50.0	100	0	22.8	2.2	100	0	100	0	0.7
2 (31st)	50.2	100	0	23.3	2.2	100	0	100	0	0.7
3 (31st)	50.1	100	0	23.3	2.2	100	0	100	0	0.7

THE KAPPA AND %ClO2 APPLIED ARE CONFIDENTIAL BUSINESS INFORMATION.

PRODUCTION AND SCRUBBER DATA FOR OCTOBER 29 AND 31, 2002 CHLORINATED HAP (METHOD 26A) TESTS

DATE	10/29/02			10/31/02		
RUN	1	2	3	1	2	3
TIME	1218-1323	1433-1538	1700-1802	1332-1443	1550-1656	1710-1816

Notes: ADTBPH is air-dried tons of bleached pulp per hour
Kappa is the pre-washer kappa
$\%ClO_2$ is the $\%ClO_2$ applied in that stage

		Do Stage				Eop Stage		D1 Stage		
Run	ADTBPH	%SW	%HW	Kappa	$\%ClO_2$	%SW	%HW	%SW	%HW	$\%ClO_2$
1 (29th)	49.8	100.0	0.0	21.9	2.0	100.0	0.0	100.0	0.0	0.5
2 (29th)	30.1	100.0	0.0	22.4	2.0	100.0	0.0	100.0	0.0	0.7
3 (29th)	30.0	100.0	0.0	22.9	1.6	100.0	0.0	100.0	0.0	0.7
1 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5
2 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5
3 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5

THE KAPPA AND $\%ClO_2$ APPLIED ARE CONFIDENTIAL BUSINESS INFORMATION.

Run	Flow, gpm	pH	Fan Load, %	Fan Amps	Fan Differential, in. H_2O
1 (29th)	1262	9.2	84	15.0	20.8
2 (29th)	1207	8.9	84	15.1	20.8
3 (29th)	1153	9.0	85	15.2	21.1
1 (31st)	1252	9.3	85	15.4	21.3
2 (31st)	1258	9.3	85	15.4	21.3
3 (31st)	1263	9.2	86	15.4	21.4

Cl2 Testing Raw Scrubber Data

Run 1 10/29/02 1218-1323

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1218-1233	1263	9.2	85	15.2	20.9
1233-1248	1263	9.1	84	15.1	20.9
1248-1303	1263	9.1	84	15.1	20.8
1303-1318	1262	9.0	83	15.0	20.8
Average	1262	9.1	84	15.1	20.9

Cl2 Testing Raw Scrubber Data

Run 2 10/29/02 1433-1538

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1433-1448	1239	8.9	83	15.0	20.8
1448-1503	1228	8.9	83	15.0	20.8
1503-1518	1217	8.9	83	15.0	20.8
1518-1533	1207	8.9	84	15.1	20.9
Average	1223	8.9	84	15.0	20.8

Cl2 Testing Raw Scrubber Data

Run 3 10/29/02 1700-1802

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1700-1715	1163	9.0	84	15.2	21.1
1715-1730	1159	9.0	84	15.2	21.1
1730-1745	1156	9.0	85	15.2	21.1
1745-1800	1153	9.0	85	15.2	21.1
Average	1158	9.0	84	15.2	21.1

Cl2 Testing Raw Scrubber Data

Run 1 10/31/02 1332-1443

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1332-1347	1252	9.3	86	15.4	21.4
1347-1402	1252	9.3	85	15.4	21.3
1402-1417	1252	9.3	85	15.4	21.3
1417-1432	1254	9.3	86	15.4	21.3
1432-1447	1254	9.3	86	15.4	21.3
Average	1253	9.3	85	15.4	21.3

Cl2 Testing Raw Scrubber Data

Run 2 10/31/02 1550-1656

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1550-1605	1258	9.3	85	15.4	21.3
1605-1620	1258	9.3	85	15.4	21.4
1620-1635	1259	9.3	85	15.4	21.4
1635-1650	1259	9.3	86	15.4	21.4
Average	1259	9.3	85	15.4	21.4

Cl2 Testing Raw Scrubber Data

Run 3 10/31/02 1710-1816

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1710-1725	1261	9.3	86	15.5	21.4
1725-1740	1261	9.3	86	15.4	21.4
1740-1755	1262	9.3	86	15.5	21.5
1755-1810	1263	9.2	86	15.4	21.5
Average	1262	9.3	86	15.4	21.4

APPENDIX – H

Project Participants

Joe Cooksey of AASI	Report Review
Randy L Weston of AASI	Project Manager Report Preparation Field Testing
George Hawkins of AASI	Field Testing
Roger Dilinger of AASI	Field Testing
Joe Taylor of GP	Testing Support