BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)		RECEIVED
)		CLERK'S OFFICE
PETITION OF CROMWELL-PHOENIX, INC.)	PCB No. AS 03-05	
FOR AN ADJUSTED STANDARD FROM 35)	(Adjusted Standard)	AUG 22 2003
Ill. Adm. Code Subpart F, Section 218.204(c))		STATE OF ILLINOIS
(the "Paper Coating Rule"))		*Pollution Control Board*

NOTICE OF FILING

TO: Charles E. Matoesian
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Bradley P. Halloran
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, IL 60601

PLEASE TAKE NOTICE that on August 22, 2003, we filed with the Clerk of the Illinois Pollution Control Board, 100 West Randolph Street, James R. Thompson Center Suite 11-500, Chicago, Illinois, 60601-3218, an original and nine (9) copies of Cromwell-Phoenix, Inc.'s **POST-HEARING BRIEF**, a copy of which is attached hereto and hereby served upon you.

CROMWELL-PHOENIX, INC.

By _____
One of Its Attorneys

Eric E. Boyd
Lorena S. Neal
SEYFARTH SHAW
55 E. Monroe St., Suite 4200
Chicago, Illinois 60603
(312) 346-8000

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF CROMWELL-PHOENIX, INC.	)	PCB No. AS 03-05
FOR AN ADJUSTED STANDARD FROM 35	)	(Adjusted Standard)
Ill. Adm. Code Subpart F, Section 218.204(c)	)	
(the "Paper Coating Rule")	)	

CROMWELL-PHOENIX, INC.'S POST-HEARING BRIEF

CROMWELL-PHOENIX, Inc. ("Cromwell"), by and through its attorneys, and pursuant to 35 Ill. Adm. Code § 101.612 and the Hearing Officer's Order dated August 11, 2003, respectfully submits the following as its post-hearing brief.

During the course of the August 7, 2003 hearing on Cromwell's Petition for Adjusted Standard, the Hearing Officer, Mr. Bradley P. Halloran, determined that certain questions posed by Alisa Liu of the Illinois Pollution Control Board should be addressed by the parties in their post-hearing briefs. See Transcript p. 5, Lines 7-9. Although Mr. Boyd, the attorney for Cromwell, responded to some of Ms. Liu's questions, Mr. Boyd was not sworn as a witness. Cromwell now addresses the questions posed by Ms. Liu. The following responses are supported by the affidavits of the persons with personal knowledge to respond to the specific questions.

Ms. Liu: The Petitioner, on page 17, refers to some experiments that were conducted, reformulate CI coatings and installation of add-on controls. There's some detailed information concerning the evaluation of the add-on controls, but there is no data documenting the experiments that were conducted on the reformulated coatings. I was wondering if you could please provide some information on those experiments and the results of their testing? Transcript, p. 15.

Response: The reformulation tests were conducted under the direction of Chet A. Bidessi, Cromwell's Laboratory Director, from December 2001 through June 2002. A

discussion of the test results is included at paragraphs 5 - 9 in the Affidavit of Chet A. Bidessi, attached hereto as Exhibit 1.

Ms. Liu: In the petition on page four, Cromwell mentions that it may be the only manufacturer of CI packaging material in Illinois. Could you please comment on whether or not Cromwell is aware of other CI packaging manufacturers in other states that are subject to similar VOM emission control requirements? ... And if so, could you follow up with whether or not Cromwell is aware of how those other facilities comply with those applicable VOM limitations that they have in their states? Transcript, p. 16.

Response: Based on their knowledge of the industry, Cromwell representatives believe that other companies operate facilities that manufacture CI packaging materials in Indiana, Wisconsin and Canada. Cromwell representatives have not, however, researched what VOM emission control requirements, if any, apply to those CI packaging material production facilities, and are not aware if or how those other facilities comply with any applicable VOM limitations. See Paragraph 10 of the Affidavit of Chet A. Bidessi.

Ms. Liu: The petition does not include a street number for Cromwell's Alsip facility. It refers to Ridgeway Avenue. Could you please provide a more precise address, please? Transcript, p. 16.

Response: The Cromwell-Phoenix facility is located at 12701 South Ridgeway in Alsip, Illinois. See Paragraph 3 of the Affidavit of Chet A. Bidessi.

Ms. Liu: Also, on page four of the petition, it states that Cromwell started CI packaging operations in 2001. The building has been around since 1965, and we were wondering if that same Alsip facility was being used for manufacturing CI products prior to Cromwell taking over operations? And if so, is Cromwell or the Agency aware of any information of the compliance status of the facility if it was doing that kind of operation before 2001? Transcript, p. 17.

Response: The exact use of the building before 2001 is unknown. To the best knowledge of Cromwell representatives, however, the building was not used to manufacture CI packaging products before 2001. See Paragraph 3 of the Affidavit of Chet A. Bidessi.

Ms. Liu: In the petition on page six, it states that Cromwell had performed gravimetric tests to determine the weight loss in emissions from CI packaging production processes. It was stated that the gravimetric demonstrated the overall VOM emissions are less than five percent of

the weight of the CI solution applied, could you possibly provide the gravimetric test data, including the results, that demonstrates that five percent? Transcript, p. 17.

Response: As stated by Mr. Boyd at the hearing, the gravimetric test data demonstrating overall VOM emissions was provided to the IEPA in a Clean Air Act Permit Program ("CAAPP") permit application. The information is contained in Exhibit 220-5A and Exhibit 220-6 of the CAAPP Application. The information shows that the overall VOM emissions are less than five percent of the weight of the CI solution applied, ranging from a low of 0.43% to a high of 2.93%. See Paragraph 12 of the Affidavit of Mark A. Horne, attached hereto as Exhibit 2.

Ms. Liu: Could you also, along those lines, provide some information on the amount of different types of CI coatings used on an annual basis along with their VOM content? If there are some trade secrets involved, perhaps just the gallons per year along with associated VOM content. Transcript, p. 18.

Response: The CAAPP application also contained information on the CI coatings used and the VOM content of the coatings. The information on coating use is contained in Exhibit 220-5A of the CAAPP Application. The information provided was based on actual coating use information for 2001. See Paragraph 10 of the Affidavit of Mark A. Horne. The information on the VOM content of the coatings is contained in Exhibit 220-2 of the CAAPP Application. See Paragraph 7 of the Affidavit of Mark A. Horne.

Ms. Liu: In Cromwell's motion for an expedited review, the Petitioner indicates that there's going to be a proposed merger with this other company and that that will result in an increase in production of CI packaging, and the motion states the facility will still be a minor source. Given Cromwell's earlier pre-merger estimates of five to six tons of VOM per year from the CI process, could you please provide an estimate of the anticipated increase? Transcript, pp. 18-19.

Response: An exact estimate of the amount of VOM emissions post-merger is not possible at the present time due to uncertainties with respect to the merger. The Alsip Facility, however, plans to continue to be a minor (less than 25 tpy) source of VOM emissions. See Paragraph 11 of the Affidavit of Chet A. Bidessi.

Ms. Liu: On page two, Cromwell notes that, "Because it prints on the majority of its products before applying the corrosion inhibiting solutions, it's printing/coating operations are regulated by 35 Illinois Administrative Code, Subpart H, 218.401." In the section from which Cromwell seeks the adjusted standard, which is 218.204(c), there is a note that says that the paper coating VOM limit does not apply to sources regulated under 218.401, so I was wondering if you could clarify whether the requested relief from the adjusted standard pertains only to the CI packaging materials that you don't print on, or if you meant it to apply to all of your CI packaging materials whether you printed on them or not? Transcript, pp. 19-20.

Response: The requested relief pertains to the CI coating material application, not the printing done prior to the CI coating. The printing operation is governed by 35 Ill. Admin. Code § 218.401. The CI coating operation, however, is not subject to 35 Ill. Admin. Code § 218.401, but the coating requirements of 35 Ill. Admin. Code § 218.204. The Petition for Adjusted Standard only seeks relief from the requirements of 35 Ill. Admin. Code § 218.204, not the requirements of 35 Ill. Admin. Code § 218.401.

Ms. Liu: I was wondering if you could also explain the rationale for limiting the VOM content of the CI coatings to 8.3 pounds per gallon in your adjusted standard wording? Transcript, p. 22.

Response: The CI compound with the highest VOM content that Cromwell-Phoenix currently uses contains 8.28 lbs of VOM/gal (less water). The 8.3 lbs/gal limit was chosen in order to allow the Facility to continue to use this coating. Different types of metals require CI packaging products with different coating formulations. The limit of 8.3 lbs/gal rather than 8.28 lbs/gal was chosen because the standard at 35 Ill. Admin. Code § 218.204 is based on one decimal place, not two. See Paragraph 8 of the Affidavit of Mark A. Horne.

Ms. Liu: In the proposed language for the adjusted standard, it would require that Cromwell report all annual emissions to the Illinois Environmental Protection Agency, could you please clarify whether this requirement pertains to all emissions of VOM at the facility or all air emissions in general? It might be something that you might want to insert in the wording so that you're only gearing this adjusted standard to the VOM emissions rather than other emissions that your client might have that might be regulated. Transcript, p. 22.

Response: The regulations at 35 Ill. Admin. Code Part 254 require permitted facilities that emit air contaminants to submit annual emissions reports to the IEPA. Because Cromwell's

Alsip facility is a minor source of emissions, the annual reporting requirements of 35 Ill. Admin. Code Part 254, Subpart C apply. The proposed language for the Adjusted Standard was intended only to require the annual emissions reporting that is already required of the Alsip facility pursuant to 35 Ill. Admin. Code Part 254, Subpart C.

Ms. Liu: On page 14 of the petition, Cromwell states that if the requested relief is not granted, it will have to control 15.21 tons of VOM per year. I was wondering if you could explain how the potential VOM reduction of 15.21 tons per year was calculated? Transcript, pp. 24-25.

Response: The potential to emit VOM from the CI manufacturing process at the Alsip facility is 16.4 tpy, the potential to emit VOM from the flexographic printing inks is 0.2 tpy, and the potential to emit VOM from the Mixing Tanks is 0.3 tpy, for a total of 16.9 tpy. Page 8 of the RACT Analysis that was attached to the Petition and accepted at the hearing as Petitioner's Exhibit 1 explains that the economic cost analyses were based on 90% control of the potential VOM emissions for the CI Coating operations, the flexographic printing inks and the mixing tanks that were reflected on Exhibit 200-1 of the CAAPP application. The 15.21 tons reflects potential controlled VOM emissions, and was determined by taking 90% of 16.9 tons. See Paragraph 6 of the Affidavit of Mark A. Horne.

Ms. Liu: Also on that page 14, Cromwell states that its operation is a "relatively small contribution to the local air shed when compared to the hundreds of thousands of tons of VOM emitted each year in the Chicagoland non-attainment area." Could you please calculate the impact of those VOM emissions from the Alsip facility in terms of the overall emissions from the Chicago non-attainment area if the Board were to grant the relief? Transcript, pp. 25-26.

Response: Following the hearing in this matter, in order to respond to this question, Mark A. Horne reviewed the 1999 Illinois Periodic Emissions Inventory for the Chicago ozone non-attainment area (Chicago NAA) that was published in December 2001. Based on this inventory, point source VOM emissions in the Chicago NAA were 112.09 tons/day (TPD), area source VOM emissions were 185.60 TPD, on-road mobile VOM emissions were 241.77 TPD,

off-road mobile VOM emissions were 133.44 TPD, and VOM emissions from biogenic sources were 292.43 TPD. This equates to total annual VOM emissions in the Chicago area of 352,345.45 tons, of which 245,608.5 tons were emitted by anthropogenic sources. When this number is compared to the 5 to 6 tpy of actual VOM emissions or the 16.4 tpy potential VOM emissions from the CI Coating Operations at the Alsip Facility, it is clear that the VOM emissions from Cromwell's CI Coating Operations are appropriately described as relatively small. In addition, it should be noted that the Board's rules for Other Emission Units in the Chicago NAA that are not regulated by other VOM control requirements (35 Ill. Admin. Code Part 218, subpart TT) do not apply to sources with the potential to emit less than 25 tpy of VOM. See Paragraph 13 of the Affidavit of Mark A. Horne.

Respectfully submitted,

CROMWELL PHOENIX, INC.

By: _____
One of Its Attorneys

Eric E. Boyd
Seyfarth Shaw
55 East Monroe Street
Suite 4200
Chicago, Illinois 60603
(312) 346-8000

DATE: August 22, 2003

Post-Hearing Brief Exhibit 1

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF CROMWELL-PHOENIX, INC.	)	PCB No. AS 03-05
FOR AN ADJUSTED STANDARD FROM 35	)	(Adjusted Standard)
Ill. Adm. Code Subpart F, Section 218.204(c)	)	
(the "Paper Coating Rule")	)	

AFFIDAVIT OF CHET A. BIDESSI

I, Chet A. Bidessi, being first duly sworn under oath, depose and state as follows:

1. I am currently employed as the Laboratory Director for Cromwell-Phoenix, Inc. ("Cromwell"). I have worked in that capacity for approximately 4 years.

2. My training is as a Chemical Engineer. I received an MSc in Chemical Engineering from Lvov Polytechnic in the Ukraine in 1984, and an MASc in Chemical Engineering from the University of Toronto in 1991.

3. Cromwell is located at 12701 South Ridgeway in Alsip, Illinois. Cromwell began production of corrosion inhibiting ("CI") packaging materials at this facility in early 2001. Neither I nor to my knowledge any other Cromwell representatives know the exact use of the building before 2001. To the best of my knowledge, however, the building was not used to manufacture CI packaging products before 2001.

4. CI products contain a high amount of high molecular weight volatile organic materials (VOMs), such as propylene glycol, that act as both a corrosion inhibiting agent and a carrier for other CI compounds. These VOMs remain in the coated paper product and give certain properties to the finished product, such as a natural kraft paper look and feel.

5. As part of my duties as Laboratory Director, I was responsible for conducting tests to determine whether Cromwell could reduce the amount of VOM in Cromwell's CI coating formulations. The tests were conducted from December, 2001 through June, 2002.

6. To reduce the amount of VOM in Cromwell's formulations, three approaches were considered. First, we reduced the amount of VOM, which in turn meant increasing the amount of water to compensate for the solids dissolution. Second, we increased the amount of solids in the formulations by increasing the amount of current solids and/or adding new solid chemicals. Finally, we replaced the current VOM carrier with higher molecular weight materials. As described below, each approach was unsuccessful in that the reformulated coatings either made product quality unacceptable or would result in increased VOM emissions.

7. We found several problems with the first approach. First, increasing the water caused the coated paper to become wrinkled. Second, the reformulated solution took a longer period of time to dry, meaning that these formulations would require drying by heat. Such drying would result in increased VOM emissions. Finally, the reformulated solutions were oily, and the coated products had a very different appearance and feel than our current products.

8. We found several problems with increasing the amount of solids in the CI coatings as well. One problem was that the chemicals did not stay in the paper substrate after the paper was coated. Instead, a white powder bloomed to the surface of the coated paper. In addition, some chemicals were precipitated out of solution by the addition of the other chemicals during the mixing stage. Some solutions turned into a suspension and could not be used for coating the paper.

9. Finally, we also were not successful in replacing the existing VOM carrier with other materials. The paper coated with those formulations had an oily look and a stiffer feel. The solutions were difficult to mix, and more heat was needed for mixing. In addition, some chemicals did not dissolve completely. Finally, the coating weights were high and the coated products were difficult to dry.

10. Based on my knowledge of the CI packaging material industry, I believe that other companies operate facilities that manufacture CI packaging materials in Indiana, Wisconsin and Canada. Neither I nor to my knowledge any other Cromwell representatives, however, have researched what VOM emission control requirements, if any, apply to those CI packaging material production facilities, and are not aware if or how those other facilities comply with any applicable VOM limitations.

11. Cromwell has entered into merger negotiations with another company. If the merger occurs, an increase in production of CI packaging materials and increased actual VOM emissions may occur. An exact estimate of the amount of VOM emissions post-merger is not possible at the present time due to uncertainties with respect to the merger. The Alsip Facility, however, is not currently a major source of VOM emissions (*i.e.*, potential emissions greater than 25 tpy) and has no plans to become a major source of VOM emissions after the merger.

Chet A. Bidessi

Subscribed and Sworn to before me
this 21st Day of August, 2003.

Notary Public

"OFFICIAL SEAL"
LORETTA F. SCHULTZ
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 9/4/2005

Post-Hearing Brief Exhibit 2

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF CROMWELL-PHOENIX, INC.	)	PCB No. AS 03-05
FOR AN ADJUSTED STANDARD FROM 35	)	(Adjusted Standard)
Ill. Adm. Code Subpart F, Section 218.204(c)	)	
(the "Paper Coating Rule")	)	

AFFIDAVIT OF MARK A. HORNE

I, Mark A. Horne, being first duly sworn under oath, depose and state as follows:

1. I am a Registered Professional Engineer (State of Indiana) working with ERM, Inc.'s office in Holland, Michigan. I have been employed by ERM since 1998.

2. I have more than 20 years of experience in environmental compliance, including preparing permit applications for major new source review projects; performing Top-Down BACT analyses for printing, specialty chemical products packaging, and recreational vehicle industries in various states; completing Title V permit applications for many major sources throughout the Midwest; preparing model Title V and PSD permits for guidance to state permitting agencies; participating in regulation development; presenting oral and written testimony at regulatory hearings; performing multi-media environmental compliance audits for numerous manufacturing facilities throughout the Midwest, including inspections of TSDFs used by the facilities; and preparing and implementing compliance test plans to determine conformance with permit limitations and synthetic minor status. A true and correct copy of my resume is attached as Attachment A.

3. I have worked with Cromwell-Phoenix, Inc. since 2001. Based on information provided by the client, I prepared the March 29, 2002 Clean Air Act Permit Program ("CAAPP") permit application and the May 2003 Reasonably Available Control Technology (RACT) Analysis that was included as Exhibit A to the Petition for Adjusted Standard filed with the Board on May 29, 2003.

4. The March 29, 2002 CAAPP application included a summary of source wide potential and actual VOM emissions. The information was contained in Exhibit 200-1 of the CAAPP Application. A true and correct copy of Exhibit 200-1 is attached to this Affidavit as Attachment B.

5. Exhibit 200-1 shows that the potential VOM emissions from the Alsip Facility's CI Coating Operations are 16.4 tpy. Exhibit 200-1 also shows that the potential VOM emissions from the Alsip Facility's Flexographic Printing Inks are 0.2 tpy and that the potential VOM emissions from the Alsip Facility's two Mixing Tanks are 0.3 tpy.

6. The RACT Analysis (that was attached to the Petition and accepted at the hearing as Petitioner's Exhibit 1) explains that the economic cost analyses were based on 90% control of

the potential VOM emissions for the CI Coating Operations, the Flexographic Printing Inks and the Mixing Tanks that were reflected on Exhibit 200-1 of the CAAPP application. The sum of these three potential VOM emission sources (16.4 + 0.2 + 0.3) equals 16.9 tpy of potential VOM emissions. The 15.21 tons referenced in the RACT Analysis was determined by taking 90% of 16.9 tons.

7. The March 29, 2002 CAAPP application also included information on the as-applied VOM content of the CI coatings used at the Alsip Facility. The information was contained in Exhibit 220-2 of the CAAPP Application. Exhibit 220-2 also included information on the ingredients of each CI coating formulation and the specific quantities of each ingredient in the formulation. A true and correct copy of Exhibit 220-2 (with the information on the ingredients of each CI coating formulation and the specific quantities of each ingredient in the formulation deleted) is attached to this Affidavit as Attachment C.

8. Exhibit 220-2 shows that the CI coating with the highest as applied VOM content (less water) is the Formulae W&F at 8.28 lbs/gal. The 8.3 lbs/gal limit requested in the Adjusted Standard Petition was based on the Facility's need to continue to use the Formulae W&F coating for some CI packaging products. The limit of 8.3 lbs/gal rather than 8.28 lbs/gal was chosen because the standard at 35 Ill. Admin. Code § 218.204 is based on one decimal place, not two. Exhibit 220-2 shows that the as-applied CI coatings at the Alsip Facility range from a high of 8.28 lbs/gal VOM to a low of 3.59 lbs/gal VOM.

9. The March 29, 2002 CAAPP application also shows the amount of different types of CI coatings used on an annual basis along with their VOM content. The information was contained in Exhibit 220-5A of the CAAPP Application. A true and correct copy of Exhibit 220-5A is attached to this Affidavit as Attachment D.

10. Exhibit 220-5A was used to determine the potential VOM emissions from the CI Coating Operations at the Alsip Facility. The emissions information was based on the total weight of coatings applied during 2001 multiplied by an emission factor determined for the coatings. The potential VOM emissions were determined based on the worst case emission factor and based on operations for 8760 hours per year. Exhibit 220-5A shows that the potential VOM emissions from the CI Coating Operations at the Alsip Facility are 16.4 tpy.

11. I also assisted in the planning and coordination of gravimetric tests performed by Cromwell personnel to determine the weight loss in emissions from CI packaging production processes. The gravimetric weight loss test protocol and gravimetric weight loss data was provided to the IEPA as part of the March 29, 2002 CAAPP permit application, and was identified as Exhibit 220-6 of the CAAPP Application. A true and correct copy of Exhibit 220-6 is attached to this Affidavit as Attachment E.

12. Support for the statement in Cromwell's Petition for Adjusted Standard that the overall VOM emissions from Cromwell's CI packaging production process at the Alsip facility are less than five percent of the weight of the CI solution applied is found in Exhibit 220-5A and Exhibit 220-6. Exhibit 220-5A shows that the VOM emissions factor for the coating formulations ranged from a low of 0.43 lbs VOM emitted/100 lbs coating applied to a high of 2.93 lbs VOM emitted/100 lbs coating applied. These numbers equate to percentages of 0.43 to 2.93, which are

emitted/100 lbs coating applied. These numbers equate to percentages of 0.43 to 2.93, which are lower than the 5% indicated in the Petition. The manner in which the emissions factors were determined is described in Exhibit 220-6.

13. Following the hearing in this matter, in order to respond to a question raised by Ms. Alisa Liu at the hearing, I reviewed the 1999 Illinois Periodic Emissions Inventory for the Chicago ozone non-attainment area (Chicago NAA) that was published in December 2001. Based on this inventory, point source VOM emissions in the Chicago NAA were 112.09 tons/day (TPD), area source VOM emissions were 185.60 TPD, on-road mobile VOM emissions were 241.77 TPD, off-road mobile VOM emissions were 133.44 TPD, and VOM emissions from biogenic sources were 292.43 TPD. This equates to total annual VOM emissions in the Chicago area of 352,345.45 tons, of which 245,608.5 tons were emitted by anthropogenic sources. When this number is compared to the 5 to 6 tpy of actual VOM emissions or the 16.4 tpy potential VOM emissions from the CI Coating Operations at the Alsip Facility, it is clear that the VOM emissions from Cromwell's CI Coating Operations are appropriately described as relatively small. In addition, it should be noted that the Board's rules for Other Emission Units in the Chicago NAA that are not regulated by other VOM control requirements (35 Ill. Admin. Code Part 218, subpart TT) do not apply to sources with the potential to emit less than 25 tpy of VOM.

Mark A. Horne

Subscribed and Sworn to before me
this 21st Day of August, 2003.

Notary Public

JANICE L. WHEELER
Notary Public, Ottawa County, MI
My Commission Expires Nov. 03, 2003

ATTACHMENT A

Mark A. Horne, P.E.

More than 20 years of experience in environmental compliance, including preparation of permit applications for major new source review projects. Performed Top-Down BACT analyses for printing, specialty chemical products packaging, and recreational vehicle industries in various states. Completed Title V permit applications for many major sources throughout the Midwest. Prepared model Title V and PSD permits for guidance to state permitting agencies. Participated in regulation development. Presented oral and written testimony at regulatory hearings. Performed multi media environmental compliance audits for numerous manufacturing facilities throughout the Midwest, including inspections of TSDFs used by the facilities. Prepared and implemented compliance test plans to determine conformance with permit limitations and synthetic minor status.

Registration

- Registered Professional Engineer, State of Indiana

Fields of Competence

- Multi-Media Compliance Auditing
- Permit applications for major new source review projects
- Top-down BACT analyses
- Preparation and implementation of compliance test plans
- Regulatory Compliance
- Emissions Trading Programs (ERMS, NO_x)
- Control Technology Assessment
- Emission Inventories
- Hazardous Waste Management
- Community Right-to-Know Compliance

Education

- M.S., Environmental Engineering, Purdue University, 1984
- B.S., Environmental Engineering, Purdue University, 1980

Professional Affiliations

- Air & Waste Management Association, International and Lake Michigan States Section

Key Projects

Secured several construction and operating permits in expedited times frame for a new thermoplastic polyurethane and new wood furniture manufacturing facilities located in a severe ozone nonattainment area. Performed multi-media environmental audits of many printing, recreational vehicle and modular home manufacturing facilities to ensure compliance with CAA, CWA, RCRA, and EPCRA requirements, as well as corporate environmental standards. Conducted audits of TSDFs used by many of these manufacturing plants to ensure they met RCRA and corporate environmental requirements.

Performed emissions inventories, provided guidance on required compliance measures and completed Title V Operating Permit applications for many heatset and coldset web offset lithographic printing plants. Developed and submitted model permits to the state regulatory agency concurrent with many of these applications.

Completed PSD and Title V permit applications for a major chemical products packaging facility, including a complete Top-Down BACT analysis.

Established the groundwork for the corporate implementation of the Title V operating permit application program for a major international printing company.

Presented oral and written testimony at regulatory hearings in response to proposed rulemakings for the Chicago Federal Implementation Plan and enhanced RACT requirements for heatset, coldset, web and sheetfed offset lithography.

Provided technical support for successful legal proceedings vs. USEPA to resolve a PSD permitting issue for a major expansion, and to establish reasonable compliance time periods for monthly rotogravure carbon adsorption solvent recovery system control efficiency demonstrations.

Coordinated and conducted compliance test programs for various industrial clients including petroleum refineries, steel mills, pathological and hazardous waste incinerators, and power plants. Specified air pollution control hardware and designed capture systems.

Completed the emissions inventory, Title V Operating Permit application and compliance plan for a synthetic natural gas manufacturing facility of a major utility. New Source Review and PSD issues were addressed. Conducted compliance test programs on utility and industrial process boilers firing coal, fuel oil and natural gas. The coal fired units included both chain grate and tangentially fired pulverized coal fuel feed systems.

Completed a synthetic minor permit application and emissions inventory for a Portland cement distribution terminal.

Developed a complete trial burn plan for a major cement manufacturer for the use of hazardous waste supplemental fuel in the production of their cement.

Prepared operating permit applications, annual emission reports and resolved RCRA waste disposal issues for a wood furniture manufacturing plant. Prepared materials usage analysis and assisted in establishing the facility as a synthetic minor HAP source.

ATTACHMENT B

EXHIBIT 200-1
SUMMARY OF SOURCE WIDE POTENTIAL AND ACTUAL VOM EMISSIONS

Process or Operation	Potential VOM Emissions (tons/year @ 8760 hrs)	Actual CY2001 VOM Emissions (tons)
CI Coating Operations	16.4	4.24
Versil Pak Wax Coating Operation	5.9	0.9
Flexographic Printing Inks	0.2	0.06
Mixing Tanks (2)	0.3	0.1
Process Boiler	<0.1	<0.1
Total	<22.9 tpy VOM	<5.4 tpy VOM

ATTACHMENT C

Formula A			
	Weight (lbs)	VOC (lbs)	Gallons
		0.0	0.0
	166	166.0	19.9
	2860	2860.0	330.4
	220	0.0	26.4
		0.0	0.0
		0.0	0.0
		0.0	0.0
	337	0.0	24.5
	323	323.0	43.5
	220	0.0	26.4
	274	274.0	36.5
		0.0	0.0
Totals	4400	3623.0	507.5

As-Applied VOC (% by Weight)	82.34
As Applied VOC (lb/gal)	7.14
As Applied VOC (lb/gal less H_2O)	7.53
VOM by vol of coating (less H_2O)	89.43
VOM by volume of volatile fraction	94.22

Formulae W&F			
	Weight (lbs)	VOC (lbs)	Gallons
		0.0	0.0
	282	282.0	33.8
	2734	2734.0	315.8
	222	0.0	26.6
		0.0	0.0
		0.0	0.0
		0.0	0.0
		0.0	0.0
		0.0	0.0
		0.0	0.0
	800	800.0	106.6
	402	402.0	53.0
Totals	4440	4218.0	535.7

As-Applied VOC (% by Weight)	95.00
As Applied VOC (lb/gal)	7.87
As Applied VOC (lb/gal less H_2O)	8.28
VOM by vol of coating (less H_2O)	100.00
VOM by volume of volatile fraction	95.03

Formula LVFG			
	Weight (lbs)	VOC (lbs)	Gallons
	732	0.0	32.36
		0.0	0.00
	1120	1120.0	129.38
	2426	0.0	290.89
		0.0	0.00
	732	0.0	89.45
	17	0.0	1.96
		0.0	0.00
		0.0	0.00
	490	0.0	58.75
		0.0	0.00
		0.0	0.00
Totals	5517	1120.0	602.78

As-Applied VOC (% by Weight)	20.30
As Applied VOC (lb/gal)	1.86
As Applied VOC (lb/gal less H_2O)	3.59
VOM by vol of coating (less H_2O)	41.48
VOM by volume of volatile fraction	30.78

Formula MPI			
	Weight (lbs)	VOC (lbs)	Gallons
	64	0.0	2.8
		0.0	0.0
	3647	3647.0	421.3
	720	0.0	86.3
	126	0.0	17.0
		0.0	0.0
		0.0	0.0
		0.0	0.0
		0.0	0.0
	250	0.0	30.0
		0.0	0.0
		0.0	0.0
Totals	4807	3647.0	557.4

As-Applied VOC (% by Weight)	75.87
As Applied VOC (lb/gal)	6.54
As Applied VOC (lb/gal less H_2O)	7.74
VOM by vol of coating (less H_2O)	89.42
VOM by volume of volatile fraction	82.99

ATTACHMENT D

Exhibit 220-5A
VOC Emissions Determination

Ricky's Machine (Swiss)

		Roll Weight		Weight of Coating			Coating Evolved (%
Trial	Formula	Start	Finish	Applied	Remaining	Evolved	by weight)
1	W	2435	2807	375	372	3	0.80
2	W	2394	2794	409	400	9	2.20
3	W	2086	2377	303	291	12	3.96
4	W	1708	2066	368	358	10	2.72
5	W	2656	3463	840	807	33	3.93
6	LVFG	1905	2065	294	160	134	45.58
7	MPI	2687.5	3412.5	729	725	4	0.55
8	LVFG	1794.0	2060.0	299	266	33	11.04
9	LVFG	2015.0	2312.0	318	297	21	6.60

Walter's Machine (Blue Line)

		Roll Weight		Weight of Coating			Coating Evolved (%
Trial	Formula	Start	Finish	Applied	Remaining	Evolved	by weight)
1	A	1611	1926	324	315	9	2.78
2	A	2580	3029	466	449	17	3.65
3	A	1375	1632	266	257	9	3.38
4	W	1709	1970	268	261	7	2.61
5	W	1672	1916	246	244	2	0.81

Average Coating Weight Loss and CI Coating VOM Content Summary

Formula	Avg Weight Loss (% by wt)	Formulation VOC Content (% by wt)	Truesdail M24 VOC Content (% by wt)	Galbraith M24 VOC Content (% by wt)	Average VOC Content (% by wt)
A	3.27	82.34	86.96	87.67	85.66
W/F	2.43	95.00	92.33	90.19	92.51
LVFG*	14.33	20.30	23.93	6.34	16.86
MPI	0.55	75.87	55.57	52.74	61.39

VOM Emissions Summary

Total Wt (lbs) of Coating Applied During CY 2001	Proportional lbs Ink Solids Applied* During CY 2001	VOM Emission Factor (lbs VOM Emitted/100 lbs Coating Applied)	Actual VOM Emissions (lbs)	Actual VOM Emissions (tons)	Formula
154,000	232	2.93	4512	2.26	A
128,760	194	2.39	3078	1.54	W/F
27,605	42	2.44	674	0.34	LVFG
48,070	72	0.43	206	0.10	MPI
Totals 358,435	541		8470	4.24	

Total Flexographic Ink Applied (lbs) = 1386 Flexographic Ink Solids (wt%) = 39

*Notes: LVFG is normally applied at 5 lbs/ream (>85% of the time) and infrequently applied at 15 lbs/ream ("steel wrap" <15%). Trials 8 and 9 represent the 5 lbs/ream application rate, whereas Trial 6 represents the 15 lbs/ream rate. The average weight loss for LVFG represents the weighted average of these test values. Also, as shown above, the weight of ink solids applied is included as an additional factor in the determination of VOM emissions.

Worst Case Emission Factor:	2.93	lbs VOM Emitted per 100 lbs CI Coating Applied
Total CI Coating Applied in CY 2001:	358,435	lbs
Number of Operating Hours in CY 2001:	2800	Hours
Potential Operating Hours per Year	8760	hours
Potential VOM Emissions (tons/yr) =	16.4	tons

ATTACHMENT E

Exhibit 220-6
Gravimetric Weight Loss Test Protocol and Gravimetric Weight Loss Data

TEST PROTOCOL FOR DETERMINING EMISSIONS

1. Gravimetric Weight Loss Determinations for Coating Lines

-Weigh the master roll of kraft paper which will be impregnated with the corrosion inhibiting (CI) solution. Record this weight as Roll Weight before CI treating.

-Weigh the paper core(s) on the wind-up shaft. Record this weight; to be subtracted from the finished roll(s).

- Set up the web using the master kraft paper roll. Any scrap from this step is kept and weighed as Scrap before CI treating. Record this weight; to be subtracted from the Weight of master roll.

-Weigh the container of corrosion inhibiting solution. Fill the clean and dry coating pan to the required mark, for the gravure and applicator rollers. Record this weight as Solution before treating.

-Start process and impregnate the kraft paper with the corrosion inhibiting (CI) solution. Most times a master kraft paper roll will give two rolls of CI treated paper. All cores used are weighed. Any scrap generated during this process is weighed; this scrap weight is added to the weight of the CI finished roll(s). All CI solution used is weighed and these weights comprise the Weight of CI solution before treating.

-At end of the run, weigh the finished impregnated CI treated roll(s). Record this weight as Roll Weight after CI treating, this is the "as produced roll weight". Any scrap after the impregnating process is added to this weight.

-At the end of the run, weigh the remaining uncoated master kraft paper roll; if all the paper was used up, weigh the core. Record this weight, to be subtracted from the Weight of the master kraft roll before CI treating.

-At the end of the run, empty all remaining CI solution from the pan into the original CI solution container and weigh. Record this weight as CI Solution after treating.

TEST PROTOCOL FOR DETERMINING EMISSIONS

Gravimetric Weight Loss Calculations for the Coating Lines:

Any loss in weight is regarded as an air emission.

Weight of kraft paper used in treating process:
(Weight of master kraft roll) - ((Weight of core (+ any paper remaining at the end of the CI treating process) + Weight of Scrap before CI treating))

Weight of CI treated Paper:
((Weight of finished treated roll(s)) + (Weight of CI treated scrap)) - ((Weight of core(s))

Weight of CI solution remaining in the treated Paper:
Weight of CI treated paper - Weight of kraft paper used in treating process

Weight of CI solution used in the impregnating process:
(Weight of CI Solution before treating + Weight of CI Solution added) - Weight of CI Solution after treating

Percent Loss of Solution (% emissions by weight):

100% x [(Weight of CI solution used in impregnating process) - (Weight of CI solution remaining in the treated Paper) / (Weight of CI solution used in impregnating process)]

The above emissions calculation is then further refined by accounting for residual weight loss that occurs during the storage and the finishing operations, as described below in Steps 2, 3, 4 and 5.

VOM Emissions

The final gravimetric loss is multiplied by the % weight VOM that is in the liquid fraction of the as-applied CI solution. This is a worst case determination that assumes that the evaporation of VOM is proportional to its composition in the solution. In fact, the water fraction will preferentially volatilize due to its higher vapor pressure.

2. Weight Loss of CI Treated master rolls with Time

-After the CI treated master rolls are produced at the coating lines, the weight of these rolls are recorded and dated. This weight is the as-produced roll weight.

Every week these rolls are weighed and the new weights and corresponding dates are recorded. If rolls will be used in a short time period (i.e. less than a one week increment), then the roll weight is taken before the roll is used.

The Weight Loss observed during the storage period is deducted from the "Weight of CI Solution remaining in the treated paper" in Step 1.

3. Weight Loss at Rewinding Stations:

At this station, the as produced master rolls are rewound into smaller length rolls and in some cases, smaller widths as well.

-After the CI treated master rolls are produced at the coating lines, the weight of these rolls are recorded and dated. This weight is the as produced roll weight.

-All cores to be used on the rewind shaft are weighed and recorded as core weight after rewind.

-Set up Web of the treated paper. Any scrap during this step is recorded and is subtracted from the weight of the as produced roll.

-Start rewind process. Any scrap/trimmings from this step are recorded and added to the weight of the finished smaller rolls.

-At the end of the rewinding process, weigh all smaller rolls made.

Weight Loss Calculations for the Rewinding Station:

Weight Loss during Rewinding = [((As produced master roll) - (Scrap weight + Core weight)) - ((Smaller roll weight) - (Scrap/trimmings weight + core(s) weight after rewind))

The Weight Loss observed during the rewind process is deducted from the "Weight of CI Solution remaining in the treated paper" in Step 1.

4. Weight Loss for the Sheeting Process

This is the process whereby the CI treated Master rolls from the coating lines are cut into large size sheets.

-After the CI treated master rolls are produced at the coating lines, the weight of these rolls are recorded and dated. This weight is the as produced roll weight.

-Set up Web of the treated paper. Any scrap during this step is recorded and subtracted from the weight of the as produced roll.

-Weigh the pallet onto which the cut sheets will be stacked.

-Begin sheeting process. Stack sheets onto weighed pallet. Any scrap during this process is weighed and recorded as Scrap during sheeting. This Scrap weight is added to the weight of cut sheets.

-At the end of the sheeting process, weigh stack of cut sheets on pallet. Subtract pallet weight to get weight of cut sheets.

Weight Loss Calculations for the Sheeting Process:

Weight Loss during Sheeting = [(As produced roll weight - Scrap from set-up) - (Weight of cut sheets + Weight of Scrap during sheeting process)

The Weight Loss observed during the sheeting process is deducted from the "Weight of CI Solution remaining in the treated paper" in Step 1.

5. Weight Loss for the Guillotine Cutting Process

This is the process in which the large cut sheets from the Sheeting process are trimmed into precise smaller sheets.

-Weight of large cut sheets from the Sheeting process is recorded.

-Sheets are trimmed to precise size. All trimmings are kept and weighed as scrap trimming.

-Weigh the precise cut sheets.

Calculations for the Guillotine Cutting Process:

Weight Loss during the Guillotine Cutting Process = (Weight of large cut sheets) - (Weight of precise cut sheets + Weight of scrap trimmings)

The Weight Loss observed during the Guillotine cutting process is deducted from the "Weight of CI Solution remaining in the treated paper" in Step 1.

NOTE:

1. All weights for the paper rolls, cut sheets and containers of Corrosion Inhibiting solutions were done on a Rice Lake Weighing Systems scale, model number: 4x4HP-5K, with an electronic read out, CAS model CI-2001A. This scale has a capacity of 1000 and accuracy of ± 1 lb.

All weights for the cores and scrap papers were done on an Ohaus scale, model number I5S. This scale has a capacity of 100 and accuracy of ± 0.01 lb.

Both scales are calibrated quarterly each year by the Abacus Scale Company of Chicago, IL. The most recent calibration was performed on Jan.10, 2002.

2. These initial determinations were processed in a step wise fashion. The results obtained are valid for the specific operational step. Currently, we are measuring emissions in a progressive manner to follow through from the initial step of printing coating to the final step of either precise cutting or rewinding. Results of this effort will be reported at a later date.

Emission's Test at Ricky's Machine (Swiss Press 84")

Trial # 1 — 1/5/02

84" Wide White Woven W. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at start: 2446# - 11# (core weight) = 2435#
As Produced Roll Weight: 2819# - (11# (core weight) + 1# (scrap)) = 2807#

CI Solution in Paper: 2807# - 2435# = 372#

CI Solution used : 500# -125# = 375#

CI Solution lost in process: 375 - 372 = 3#
% Loss of CI Solution: (3/375) x 100 = 0.80%

Trial # 2 — 1/5/02

84" Wide White Woven W. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 2405# - 11# (core weight) = 2394#
As Produced Roll Weight: 2808# - (11# (core weight) + 3# (scrap)) = 2794#

CI Solution in Paper: 2794# - 2394# = 400#

CI Solution used : 492# - 83# = 409#

CI Solution lost in process: 409 - 400 = 9#
% Loss of CI Solution: (9/409) x 100 = 2.20%

Trial # 3 — 1/5/02

72" Wide White Woven W. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 2096# - 10# (core weight) = 2086#
As Produced Roll Weight: 2389# - (10# (core weight) + 2# (scrap)) = 2377#

CI Solution in Paper: 2377# - 2086# = 291#

CI Solution used : 500# -197# = 303#

CI Solution lost in process: 303 - 291 = 12#
% Loss of CI Solution: (12/303) x 100 = 3.96%

Emission's Test at Ricky's Machine (Swiss Press 84") contd

Trial # 4 1/5/02

72" Wide Scrim Wrap W. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 1730# - (10# (core weight) + 12# (scrap)) = 1708#
As Produced Roll Weight: 2078# - (10# (core weight) + 2# (scrap)) = 2066#

CI Solution in Paper: 2066# - 1708# = 358#

CI Solution used : 498# -130# = 368#

CI Solution lost in process: 368 - 358 = 10#
% Loss of CI Solution: (10/368) x 100 = 2.71%

Trial # 5 1/8/02

72½" Wide Ferro-Pak 40W. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 2675# - (10# (core weight) + 9# (scrap)) = 2656#
As Produced Roll Weight: ((1707#(roll 1) + 1783# (roll 2)) - ((10# (core weight roll 1) + 10# (core weight roll2) + 3# (scrap roll 1) + 4# (scrap roll 2)) = 3463#

CI Solution in Paper: 3463# - 2656# = 807#

CI Solution used :(493# - 72# (drum 1)) + (507# - 88# (drum 2)) = 840#

CI Solution lost in process: 840 - 807 = 33#
% Loss of CI Solution: (33/840) x 100 = 3.92%

Emission's Test at Ricky's Machine (Swiss Press 84") contd.

Trial # 6 1/16/02

73" Wide Ferro-Pak 40FG. The CI formulation used here, has 44% water.

Kraft Master Roll Weight at Start: 1937# - (8# (core weight) + 24# (scrap)) = 1905#
As Produced Roll Weight: ((1253#(roll 1) + 828# (roll 2)) - ((8# (core weight roll 1) + 8# (core weight roll2)) = 2065#

CI Solution in Paper: 2065# - 1905# = 160#

CI Solution used :(581# - 287#) = 294#

CI Solution lost in process: 294 - 160 = 134#
% Loss of CI Solution: (134/294) x 100 = 45.57%

Trial # 7 1/18/02

73" Wide Ferro-Pak 40MPI. The CI formulation used here, has 15% water.

Kraft Master Roll Weight at Start: 2699# - (10# (core weight) + 1.5# (scrap)) = 2687.5#
As Produced Roll Weight: ((1745#(roll 1) + 1688# (roll 2)) - ((10# (core weight roll 1) + 10# (core weight roll2) + 2.5# (scrap roll 1)) = 3412.5#

CI Solution in Paper: 3412.5# - 2687# = 725.5#

CI Solution used :(512# - 0# (drum 1)) + (497# - 280# (drum 2)) = 729#

CI Solution lost in process: 729 - 725.5 = 3.5#
% Loss of CI Solution: (3.5/729) x 100 = 0.48%

Emission's Tests at Walter's Machine (Blue Line 72")

Trial # 1 12/12/01

43" Wide Ferro-Pak 35A. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 1617# - (6# (core weight)) = 1611#
As Produced Roll Weight: ((1071#(roll 1) + 865# (roll 2)+ 2# (coated scrap roll 2)) - ((6# (core weight roll 1) + 6# (core weight roll2))) = 1926#

CI Solution in Paper: 1926# - 1611# = 315#

CI Solution used :(408# - 84#) = 324#

CI Solution lost in process: 324 - 315 = 9#
% Loss of CI Solution: (9/324) x 100 = 2.78%

Trial # 2 12/12/01

72½" Wide Ferro-Pak 35A. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 2707# - (11# (core weight) + 116# (paper scrap) = 2580#
As Produced Roll Weight: ((1628#(roll 1) + 1416# (roll 2) + 6# (scrap roll1)) - ((11# (core weight roll 1) + 10# (core weight roll2))) = 3029#

CI Solution in Paper: 3029# - 2580# = 449#

CI Solution used :(513# - 47#) = 466#

CI Solution lost in process: 466 - 449 = 17#
% Loss of CI Solution: (17/466) x 100 = 3.65%

Trial # 3 12/13/01

36½" Wide Ferro-Pak 35A. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 1386# - (6# (core weight) + 5# (paper scrap) = 1375#
As Produced Roll Weight: ((856#(roll 1) + 781# (roll 2) + 5# (paper scrap)) - ((5# (core weight roll 1) + 5# (core weight roll2))) = 1632#

CI Solution in Paper: 1632# - 1375# = 257#

CI Solution used :(474# - 208#) = 266#

CI Solution lost in process: 266 - 257 = 9#
% Loss of CI Solution: (9/266) x 100 = 3.38%

Emission's Tests at Walter's Machine (Blue Line 72") contd

Trial # 4 12/17/01

46" Wide Ferro-Pak 35W[B]. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 1718# - (9# (core weight) = 1709#
As Produced Roll Weight: ((993#(roll 1) + 987# (roll 2) + 2# (coated scrap roll 1)) - ((6# (core weight roll 1) + 6# (core weight roll2)) = 1970#

CI Solution in Paper: 1970# - 1709# = 261#

CI Solution used :(499# - 231#) = 268#

CI Solution lost in process: 268 - 261 = 7#
% Loss of CI Solution: (7/268) x 100 = 2.6%

Trial # 5 12/17/01

46" Wide Ferro-Pak 35W[B]. The CI formulation used here, has 5% water.

Kraft Master Roll Weight at Start: 1678# - (6# (core weight)) = 1672#
As Produced Roll Weight: ((991#(roll 1) + 934# (roll 2)+ 3# (coated scrap roll 2)) - ((6# (core weight roll 1) + 6# (core weight roll2))) = 1916#

CI Solution in Paper: 1916# - 1672# = 244#

CI Solution used :(194# - 52#) = 246#

CI Solution lost in process: 246 - 244 = 2#
% Loss of CI Solution: (2/246) x 100 = 0.81%

Emission's Test at Ricky's Machine (Swiss Press 84")

Trial # 8: Weight Loss During Impregnating Process 3/13/02

85" Wide 40FG; one side treated. The CI formulation used here, has 44% water.

Kraft Master Roll + Core Weight at start: 3050#
Kraft Master Roll remaining + Core Weight at start: 1212#
Scrap Paper during webbing process: 44#

Weight of Kraft Paper used for production run: 3050 - (1212 + 44) = 1794#

Weight of CI coated Master Roll: 2069#
As Produced CI coated Paper Weight: (2069# + 2# (coated scrap) - 11# (core weight) = 2060#

CI Solution in Paper: 2060# - 1794# = 266#

CI Solution in drum at start of run : 580#
CI Solution in drum at end of run : 281#
CI Solution used for run: 299#

CI Solution lost in process: 299 - 266 = 33#
% Loss of CI Solution during impregnation process: (33/299) x 100 = 11.04%

Stage 2: Weight Loss of CI Master Roll standing on Floor

Weight as produced (3/13/02:	2069#
Weight of Roll (3/15/02) :	2069#
Weight of Roll (3/18/02) :	2069#
Weight of Roll (3/21/02) :	2069#
Weight of Roll (3/22/02) :	2069#

% Loss during standing for 9 days: 0

Stage 3: Weight Loss during Trimming and Rewinding 3/22/02

(Six inches was trimmed off the edges of the CI Master Roll.)

Weight of CI Master Roll at start: 2069#
Weight of Core at start: 11#
Weight of CI Paper at start: 2058#

Weight of Trimmed Roll + Core at end: 1904#
Weight of Core at end: 11#
Weight of Trimmed CI Paper at end: 1893#
Weight of scrap trimmings at end: 165#
Weight of CI Paper at end: 1893 + 165 = 2058#

% Loss during Trimming and Rewinding: 0

% Loss during the manufacture of the 40FG product

Loss during impregnation + Loss during standing + Loss during trimming/rewinding:

33 + 0 + 0 = 33#

% Loss during the entire manufacturing process:
(33/299) x 100 = 11.04%

Trial # 9 3/18/02

74" Wide 40FG; one side treated. The CI formulation used here, has 44% water.

Stage 1: Weight Loss During Impregnating Process 3/18/02

Kraft Master Roll + Core Weight at start: 2036#
Core Weight at start: 10#
Scrap Paper during webbing process at start: 11#

Weight of Kraft Paper used for production run: 2036 - (10 + 11) = 2015#

Weight of CI coated Master Roll#1: 1756#
Weight of CI coated Master Roll#2: 568#

As Produced CI coated Paper Weight: (1756# + 568# + 8# (coated scrap) - ((10# (core weight roll #1) + 10# (core weight roll #2)) = 2312#

CI Solution in CI coated Paper: 2312# - 2015# = 297#

CI Solution in drum at start of run : 592#
CI Solution in drum at end of run : 274#
CI Solution used for run: 318#

CI Solution lost in process: 318 - 297 = 21#
% Loss of CI Solution: (21/318) x 100 = 6.60%

Stage 2: Weight Loss of CI Master Roll standing on Floor

Roll #1:
Weight as produced (3/18/02): 1756#
Weight of Roll (3/20/02) : 1756#

% Loss during standing for 2 days: 0

Roll #2:
Weight as produced (3/18/02): 568#
Weight of Roll (3/20/02) : 568#

% Loss during standing for 2 days: 0

Stage 3: Weight Loss during Trimming and Rewinding 3/20/02

Roll#1
(1 inch was trimmed off the edges of this CI Master Roll.)

Weight of CI Master Roll at start: 1756#
Weight of CI Master Roll remaining + Core at start: 12#
Weight of CI Paper used: 1744#

Weight of Trimmed Roll + Core at end: 1730#
Weight of Core at end: 10#
Weight of Trimmed CI Paper at end: 1720#

Weight of scrap trimmings at end: 24#
Weight of CI Paper at end: 1720 + 24 = 1744#

% Loss during Trimming and Rewinding: 0

Roll #2
(1 inch was trimmed off the edges of this CI Master Roll.)

Weight of CI Master Roll at start: 568#
Weight of CI Master Roll remaining + Core at start: 12#
Weight of CI Paper used: 556#

Weight of Trimmed Roll + Core at end: 556#
Weight of Core at end: 10#
Weight of Trimmed CI Paper at end: 546#

Weight of scrap trimmings at end: 10#
Weight of CI Paper at end: 546 + 10 = 546#

% Loss during Trimming and Rewinding: 0

% Loss during the manufacture of the 40FG product

Loss during impregnation + Loss during standing + Loss during trimming/rewinding:

21 + 0 + 0 = 21#
% Loss during the entire manufacturing process:
(21/318) x 100 = 6.60%

Emission Tests at Manual Coater

Printing and impregnating Liner boards with Corrosion Inhibiting Formulations

1. Ferro-Pak A Formulation; 4 Skids of Liner Boards were treated with the Ferro-Pak A formulation.

Weight of Ferro-Pak A formulation (CI Solution) at start of run: 153#

Skid #1:

Weight of Liner board + Skid:	568#
Weight of Skid:	59#
Weight of Skid + coated Liner Board:	579#
Weight of CI Solution Used:	11#

Skid #2:

Weight of Liner board + Skid:	533#
Weight of Skid:	38#
Weight of Skid + coated Liner Board:	547#
Weight of CI Solution Used:	14#

Skid #3:

Weight of Liner board + Skid:	544#
Weight of Skid:	30#
Weight of Skid + coated Liner Board:	556#
Weight of CI Solution Used:	12#

Skid #4:

Weight of Liner board + Skid:	555#
Weight of Skid:	48#
Weight of Skid + coated Liner Board:	570#
Weight of CI Solution Used:	15#

Total Weight of CI Solution Used: (11+ 14+ 12+ 15) = 52#

Weight of CI Solution remaining at end of run: 100#

Loss of CI solution: 153# - (100# + 52#) = 1# or 0.65%

Emission Tests at Manual Coater (contd.)

2. Ferro-Pak W formulation was used to treat 1 skid of Liner Board

Weight of Ferro-Pak W formulation (CI solution) at start of run: 136#

Skid #1:

Weight of Liner board + Skid:	814#
Weight of Skid:	31#
Weight of Skid + treated Liner Board:	872#
Weight of CI Solution Used:	58#

Weight of CI Solution remaining at end of run: 77#

Loss of CI solution: 136# - (77# + 58#) = 1# or 0.74%

Emission Tests at Rewinder #1

Printed, impregnated as produced CI Master rolls are re-rolled into smaller roll sizes (most times trimmed to specific widths).

Trial 1.

Weight of CI Master roll : 835#

Weight of rewound Rolls: 798#
Weight of Trimmings + Core: 38#
Total Weight after rewinding: (798 + 38#) = 836#

Process Loss (% Emission):

(Weight of CI Master roll) - (Weight of rewound Rolls + Weight of Trimmings+ Core) / (Weight of CI Master roll)

(835#) - (798# + 38#) / 835# = -0.0011# or -0.12%

Trial 2.

Weight of CI Master roll : 851#

Weight of rewound Rolls: 812#
Weight of Trimmings + Core: 40#
Total Weight after rewinding: (812 + 40#) = 852#

Process Loss (% Emission):

(Weight of CI Master roll) - (Weight of rewound Rolls + Weight of Trimmings+ Core) / (Weight of CI Master roll)

(851#) - (812# + 40#) / 851# = -0.0011# or -0.12%

Emission Tests at Rewinder #1 (contd.)

Trial 3.

Weight of CI Master roll : 850#

Weight of rewound Rolls: 809#
Weight of Trimmings + Core: 45#
Total Weight after rewinding: (809 + 45#) = 854#

Process Loss (% Emission):

(Weight of CI Master roll) - (Weight of rewound Rolls + Weight of Trimmings+ Core) / (Weight of CI Master roll)

(850#) - (809# + 45#) / 850# = -0.0047# or -0.47%

Trial 4.

Weight of CI Master roll : 869#

Weight of rewound Rolls: 837#
Weight of Trimmings + Core: 32#
Total Weight after rewinding: (837 + 32#) = 869#

Process Loss (% Emission):

(Weight of CI Master roll) - (Weight of rewound Rolls + Weight of Trimmings+ Core) / (Weight of CI Master roll)

(869#) - (837# + 32#) / 869# = 0# or 0%

Emission Test at Sheeter #3

35F CI Treated as produced master roll being sheeted to 34" x 37"; Width of roll: 37" wide

Weight of CI master Roll 1: 767#
Weight of CI master Roll 2: 726#
Total Weight of CI master rolls: 1493#

Weight of CI Paper remaining on master Roll 1: 480#
Weight of CI Paper remaining on master Roll 2: 523#
Total Weight of CI Paper remaining on master rolls: 1003#

Weight of Scraps: 3#

Total Weight of CI paper used from master rolls: (1493- 3) - (1003)= 487#

Weight of Truck: 196#
Weight of Truck + Sheeted CI Paper: 686#
Weight of Sheeted CI Paper: 686 - 196 = 490#

Loss in Weight (% emission):

(487-490) / 487 = - 0.006 or - 0.62%

Emission Tests at Guillotine Cutter

Paper Sheets from Sheeter machines being cut to precise sizes and placed in boxes.

Trial 1.
Weight of CI Paper sheets received from Sheeter machine:

Weight of CI Paper + Skid	= 1888#
Weight of Skid	= 23#
Weight of CI Paper received	= 1865#

Weight of CI Paper cut to precise sheets:

Skid 1:

Weight of CI Paper cut + boxes:	= 1097#
Weight of boxes:	= 66#
Weight of CI Paper cut:	= 1031#

Skid 2:

Weight of CI Paper cut + boxes:	= 658#
Weight of boxes:	= 48#
Weight of CI Paper cut:	= 610#

Total Weight of CI Paper cut: (Weight of CI Paper cut, Skid1 + Weight of CI Paper cut, Skid 2) = 1031 + 610 = 1641#

Weight of Trimmings (during the cutting process):

Weight of Dumpster + Paper Trim	= 943#
Weight of Dumpster empty:	= 719#
Weight of Paper Trim:	= 224#

Process Loss (% Emission):

((Weight of CI Paper received)) - ((Weight of CI Paper cut, Skid1 + Weight of CI Paper cut, Skid 2) + (Weight of Paper Trim)) / ((Weight of CI Paper received))

(1865#) - ((1641#) + (224#)) / 1865# = 0# or 0%

Emission Tests at Guillotine Cutter (contd.)

Trial 2 on Second Cutter:

Weight of CI Paper from Sheeter machine: = 1804#

Skid 1:

Weight of CI Paper cut + boxes:	= 461#
Weight of boxes:	= 59#
Weight of CI Paper cut:	= 402#

Skid 2:

Weight of CI Paper cut + boxes:	= 461#
Weight of boxes:	= 43#
Weight of CI Paper cut:	= 418#

Skid 3:

Weight of CI Paper cut + boxes:	= 447#
Weight of boxes:	= 44#
Weight of CI Paper cut:	= 403#

Skid 4:

Weight of CI Paper cut + boxes:	= 450#
Weight of boxes:	= 44#
Weight of CI Paper cut:	= 406#

Total Weight of cut CI Paper: (402+418+403+406) = 1629#

Weight of Trimming (during the cutting process): = 175#.

Process Loss (% Emission):

((Weight of CI Paper from Sheeter machine)) - ((Total Weight of cut CI Paper) + (Weight of Trimming)) / (Weight of CI Paper from Sheeter machine)

(1804#) - ((1629 + 175#)) / (1804#) = 0# or 0%

Weight Loss in Time of CI As Produced Master Rolls

Roll 1, 35MPI, 39" wide.
As Produced Master Roll Weight: 851#
Weight after 6 days: 851#
Loss of Weight (% emission): 0

Roll 2, 35MPI, 39" wide.
As Produced Master Roll Weight: 836#
Weight after 6 days: 835#
Loss of Weight (% emission): 1# or 0.12%

Roll 3, 50 A, 50.5" wide.
As Produced Master Roll Weight: 1115#
Weight after 5 days: 1113#
Loss of Weight (% emission): 2# or 0.18%

Roll 4, 50 A, 50.5" wide.
As Produced Master Roll Weight: 1138#
Weight after 5 days: 1136#
Loss of Weight (% emission): 2# or 0.18%

Roll 5, 50 A, 50.5" wide.
As Produced Master Roll Weight: 1137#
Weight after 5 days: 1136#
Loss of Weight (% emission): 1# or 0.01%

Roll 6, 50 A, 50.5" wide.
As Produced Master Roll Weight: 1144#
Weight after 5 days: 1144#
Loss of Weight (% emission): 0#

Weight Loss in Time of CI As Produced Master Rolls

Roll 7, 35MPI, 39" wide.
As Produced Master Roll Weight: 850#
Weight after 7 days: 850#
Loss of Weight (% emission): 0#

Roll 8, 35MPI, 39" wide.
As Produced Master Roll Weight: 869#
Weight after 3 days: 869#
Loss of Weight (% emission): 0#

Roll 9, 35MPI, 39" wide.
As Produced Master Roll Weight: 852#
Weight after 3 days: 851#
Loss of Weight (% emission): 1# or 0.12%

Roll 10, 35A, 36.5" wide.
As Produced Master Roll Weight: 728#
Weight after 1 days: 727#
Loss of Weight (% emission): 1# or 0.14%

Roll 11, 35A, 36.5" wide.
As Produced Master Roll Weight: 767#
Weight after 1 days: 767#
Loss of Weight (% emission): 0#

*Numbering error: there was no Roll 12

Roll 13, 35A, 41" wide.
As Produced Master Roll Weight: 1002#
Weight after 7 days: 1002#
Loss of Weight (% emission): 0#

Weight Loss in Time of CI As Produced Master Rolls

Roll 14, 30A, 37" wide.
As Produced Master Roll Weight: 1062#

Weight after 14 days:	1062#
Loss of Weight (% emission):	0#

Roll 15, 30A, 37" wide.
As Produced Master Roll Weight: 775#

Weight after 14 days:	775#
Loss of Weight (% emission):	0#

Roll 16, 35F, 37" wide.
As Produced Master Roll Weight: 741#

Weight after 21 days:	741#
Loss of Weight (% emission):	0#

Roll 17, 35F, 37" wide.
As Produced Master Roll Weight: 833#

Weight after 21 days:	832#
Loss of Weight (% emission):	1# or 0.12%

Roll 18, 35A, 49" wide.
As Produced Master Roll Weight: 1002#

Weight after 14 days:	1002#
Loss of Weight (% emission):	0#

Roll 19, 40PCA, 39" wide.
As Produced Master Roll Weight: 987#

Weight after 14 days:	987#
Loss of Weight (% emission):	0#

Weight Loss in Time of CI As Produced Master Rolls

Roll 20, 40PCA, 39" wide.
As Produced Master Roll Weight: 874#

Weight after 21 days:	875#
Loss of Weight (% emission):	- 1# or - 0.11%

Roll 21, 35MPI, 39" wide.
As Produced Master Roll Weight: 525#

Weight after 21 days:	525#
Loss of Weight (% emission):	0#

PROOF OF SERVICE

I, the undersigned, on oath [or affirmation] state that I have served on the date of August 22, 2003, the attached **Post-Hearing Brief**, by fax and U.S. Mail to Charles E. Matoesian and by U.S. Mail upon the following persons:

Charles E. Matoesian
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Bradley P. Halloran
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
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Chicago, IL 60601

Joy Bunton

SUBSCRIBED TO AND SWORN BEFORE ME
THIS 22ND DAY OF AUGUST, 2003

NOTARY PUBLIC

OFFICIAL SEAL
JANET M. POLACEK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3-27-2004