

April 10, 2024

Bob Burdick
Mercury Plastics
3807 SE Hidden Way
Vancouver, WA 98661

RE: Preliminary Air Discharge Permit for Installation of New Bag Sealing Machine

Dear Mr. Burdick:

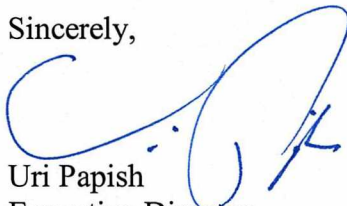
A preliminary determination to issue Air Discharge Permit (ADP) 24-3640 has been completed for ADP application CL-3263 pursuant to Section 400-110(4) of the General Regulations for Air Pollution Sources of the Southwest Clean Air Agency (SWCAA). Public notice for ADP application CL-3263 was published in the permit section of SWCAA's website on March 13, 2024. A thirty (30) day public comment period will be provided prior to a final determination.

Electronic copies of ADP 24-3640 and the associated Technical Support Document are available for public review in the "Permits Open for Public Comment" section under the "Air Permits" link on SWCAA's website (<http://www.swcleanair.gov>). Original copies are enclosed for your files. If you have any comments on this preliminary determination, please notify SWCAA within the specified comment period. If no comments are received, your final Air Discharge Permit will be issued at the conclusion of the comment period.

ADP 24-3640 may be appealed directly to the Pollution Control Hearings Board (PCHB) within thirty (30) days of receipt as provided in Revised Code of Washington (RCW) 43.21B.

If you have any questions or comments, or desire additional information, please contact me or Vannessa McClelland at (360) 574-3058, extension 129.

Sincerely,



Uri Papish
Executive Director

UP: vnm

Enclosures: Technical Support Document and Air Discharge Permit 24-3640





**AIR DISCHARGE PERMIT
24-3640**

DRAFT Issued: April 10, 2024

Mercury Plastics
3807 SE Hidden Way
Vancouver, WA 98661

SWCAA ID – 2088

REVIEWED BY: _____
Clinton Lamoreaux, Chief Engineer

APPROVED BY: _____
Uri Papish, Executive Director

TABLE OF CONTENTS

1. Equipment/Activity Identification 1

2. Permit Requirements..... 1

 Emission Limits 2

 Operating Limits and Requirements 3

 Monitoring and Recordkeeping Requirements 5

 Emission Monitoring and Testing Requirements 6

 Reporting Requirements 7

3. General Provisions 8

1. Equipment/Activity Identification

ID No.	Equipment/Activity	Control Equipment/Measure
1	Fischer & Krecke Flexographic Printing Press #305	Regenerative thermal oxidizer
2	Fischer & Krecke Flexographic Printing Press #306	Regenerative thermal oxidizer
3	Regenerative Thermal Oxidizer	Low-NO _x burners, supplemental fuel injection, Low sulfur fuel (natural gas)
4	Four Space Heaters	Low sulfur fuel (natural gas)
5	Ten Bag Sealing Machines	Air handler filter

2. Permit Requirements

The following tables detail the specific requirements of this Air Discharge Permit (ADP). In addition to the requirements listed below, equipment at this facility may be subject to other federal, state, and local regulations. The requirement number is identified in the left-hand column. The text of the requirement is contained in the middle column. The emission unit, equipment, or activity to which the requirement applies is listed in the right-hand column.

ADP 24-3640 supersedes ADP 18-3278 in its entirety.

Emission Limits

Req. No.	Emission Limits	Equipment/ Activity ID No.															
1.	<p>Emissions from the regenerative thermal oxidizer and printing operations (excluding printer dryers) must not exceed the following:</p> <table border="0"> <thead> <tr> <th><u>Pollutant</u></th> <th><u>Annual Emission Limit (12-month rolling total)</u></th> <th><u>Short Term Limit (1-hour average)</u></th> </tr> </thead> <tbody> <tr> <td>NO_x</td> <td>11.29 tpy</td> <td>2.58 lb/hr (Destruct Mode)</td> </tr> <tr> <td>CO</td> <td>22.92 tpy</td> <td>5.23 lb/hr (Destruct Mode)</td> </tr> <tr> <td>VOCs as C₃H₈</td> <td>80.0 tpy</td> <td>None</td> </tr> <tr> <td>PM₁₀/PM_{2.5}</td> <td>0.05 tpy</td> <td>None</td> </tr> </tbody> </table> <p>VOC emission calculations must be based on a material balance methodology and the most recent capture and destruction efficiency determined during a source test of the regenerative thermal oxidizer. The material balance must include ink and solvent purchases (or solvent deliveries in the event that purchased solvent is stored off-site by a third party) and beginning inventory, returns, ending inventory, and solvent and ink waste shipped off-site. Other emissions must be calculated consistent with Section 6 of the Technical Support Document (TSD) for this ADP</p> <p>The long-term VOC emission limit must be calculated as a 12-month rolling sums.</p>	<u>Pollutant</u>	<u>Annual Emission Limit (12-month rolling total)</u>	<u>Short Term Limit (1-hour average)</u>	NO _x	11.29 tpy	2.58 lb/hr (Destruct Mode)	CO	22.92 tpy	5.23 lb/hr (Destruct Mode)	VOCs as C ₃ H ₈	80.0 tpy	None	PM ₁₀ /PM _{2.5}	0.05 tpy	None	1 – 3
<u>Pollutant</u>	<u>Annual Emission Limit (12-month rolling total)</u>	<u>Short Term Limit (1-hour average)</u>															
NO _x	11.29 tpy	2.58 lb/hr (Destruct Mode)															
CO	22.92 tpy	5.23 lb/hr (Destruct Mode)															
VOCs as C ₃ H ₈	80.0 tpy	None															
PM ₁₀ /PM _{2.5}	0.05 tpy	None															
2.	<p>Emissions from printer dryer and space heater natural gas combustion must not exceed the following:</p> <table border="0"> <thead> <tr> <th><u>Pollutant</u></th> <th><u>Annual Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td>NO_x</td> <td>2.79 tpy</td> </tr> <tr> <td>CO</td> <td>2.34 tpy</td> </tr> <tr> <td>PM₁₀/PM_{2.5}</td> <td>0.21 tpy</td> </tr> </tbody> </table> <p>Annual emissions must be calculated using the emission factors consistent with Section 6 of the TSD for this ADP unless unit specific source test data is collected.</p>	<u>Pollutant</u>	<u>Annual Emission Limit</u>	NO _x	2.79 tpy	CO	2.34 tpy	PM ₁₀ /PM _{2.5}	0.21 tpy	1 – 2, 4							
<u>Pollutant</u>	<u>Annual Emission Limit</u>																
NO _x	2.79 tpy																
CO	2.34 tpy																
PM ₁₀ /PM _{2.5}	0.21 tpy																
3.	<p>Emissions from the bag machines (sealers) must not exceed the following:</p> <table border="0"> <thead> <tr> <th><u>Pollutant</u></th> <th><u>Annual Emission Limit</u></th> </tr> </thead> <tbody> <tr> <td>VOC</td> <td>4.54 tpy</td> </tr> <tr> <td>PM_{2.5}</td> <td>0.35 tpy</td> </tr> </tbody> </table> <p>Annual emissions must be calculated using the emission factors consistent with Section 6 of the TSD for this ADP unless unit specific source test data is collected.</p>	<u>Pollutant</u>	<u>Annual Emission Limit</u>	VOC	4.54 tpy	PM _{2.5}	0.35 tpy	5									
<u>Pollutant</u>	<u>Annual Emission Limit</u>																
VOC	4.54 tpy																
PM _{2.5}	0.35 tpy																

Req. No.	Emission Limits	Equipment/ Activity ID No.
4.	<p>Facility-wide emissions of toxic air pollutants (TAPs) as defined in WAC 173-460 must not exceed their respective small quantity emission rates (SQER) except for n-propanol (CAS # 71-23-8). Facility-wide emissions of n-propanol must not exceed 71.5 tons per year (12-month rolling total). Emissions of TAPs must not collectively cause the VOC emission limit in this ADP to be exceeded.</p> <p>Annual emissions must be calculated using a material balance to determine the quantity of VOCs (including volatile TAPs emitted from the printing operations and the capture and control efficiency of the regenerative thermal oxidation system measured during the most recent source emissions test.</p>	Facility-wide
5.	Visible emissions from equipment at the facility must not exceed zero percent (0%) opacity for more than three (3) minutes in any one-hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400).	1 - 5

Operating Limits and Requirements

Req. No.	Operating Limits and Requirements	Equipment/ Activity ID No.
6.	Reasonable precautions must be taken at all times to prevent and minimize fugitive emissions from plant operations.	Facility-wide
7.	Operations that cause or contribute to a nuisance odor must use recognized good practice and procedures to reduce these odors to a reasonable minimum.	Facility-wide
8.	Emission units and activities identified in this ADP must be maintained and operated in total and continuous conformity with the conditions identified in this ADP. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this ADP, including directing the facility to cease operations until corrective action can be completed.	1 – 5
10.	Each pollution control device must be operated whenever the processing equipment served by that air pollution control device is in operation. Control devices must be operated and maintained in accordance with the manufacturer's specifications. Furthermore, air pollution control devices must be operated in a manner that minimizes emissions.	1 – 3, 5
11.	Exhaust from the regenerative thermal oxidizer must be discharged vertically above the roof level of the building in which that particular emission unit is housed and at a point higher than surrounding buildings and/or terrain. Any device that obstructs or prevents vertical discharge is prohibited.	3
12.	<p>The regenerative thermal oxidizer must be operated whenever:</p> <p>(a) Organic solvent-based inks are being used.</p> <p>(b) Water based inks containing greater than or equal to 1.0 pound per gallon in the volatile fraction of the ink, less water are being used, and the solids content of the ink is less than 60% solids, less water.</p>	1 – 3

Req. No.	Operating Limits and Requirements	Equipment/ Activity ID No.								
13.	The regenerative thermal oxidizer must be used to control volatile organic compound emissions from all printing presses.	1 – 3								
14.	The regenerative thermal oxidizer system must provide a minimum capture efficiency of 75% of VOCs released from printing presses at the facility. Compliance must be determined using the material balance and source testing methodology in Appendix A. The system settings affecting capture rate (e.g., fan speed, inlet pressure) must be maintained at the minimum levels during which compliance was demonstrated during the most recent source emissions test.	1 – 3								
15.	<p>The regenerative thermal oxidizer must be operated in accordance with the following limitations:</p> <table border="0"> <thead> <tr> <th><u>Parameter</u></th> <th><u>Operating Requirement</u></th> </tr> </thead> <tbody> <tr> <td>VOC Destruction Efficiency</td> <td>98% reduction (mass basis, 1-hour average) or 20 ppmvd as propane (C₃H₈) at outlet, whichever is least stringent</td> </tr> <tr> <td>Temperature (minimum)</td> <td>1,500 degrees Fahrenheit (1-hour average)</td> </tr> <tr> <td>Temperature (maximum)</td> <td>1,800 degrees Fahrenheit (1-hour average)</td> </tr> </tbody> </table> <p>The minimum or maximum operating temperatures are required during VOC Destruct Mode. The temperatures listed above may be modified upon demonstrating to SWCAA's satisfaction (e.g., via source emissions testing) that the proposed modification will provide for equivalent or superior control of volatile organic compounds, toxic air pollutants, and/or odorous emissions. If the permittee demonstrates to SWCAA's satisfaction that an alternative operating parameter results in equivalent or superior emission control, the minimum operating parameters used in the demonstration may replace the operating parameters listed above.</p>	<u>Parameter</u>	<u>Operating Requirement</u>	VOC Destruction Efficiency	98% reduction (mass basis, 1-hour average) or 20 ppmvd as propane (C ₃ H ₈) at outlet, whichever is least stringent	Temperature (minimum)	1,500 degrees Fahrenheit (1-hour average)	Temperature (maximum)	1,800 degrees Fahrenheit (1-hour average)	1 – 3
<u>Parameter</u>	<u>Operating Requirement</u>									
VOC Destruction Efficiency	98% reduction (mass basis, 1-hour average) or 20 ppmvd as propane (C ₃ H ₈) at outlet, whichever is least stringent									
Temperature (minimum)	1,500 degrees Fahrenheit (1-hour average)									
Temperature (maximum)	1,800 degrees Fahrenheit (1-hour average)									
16.	The regenerative thermal oxidizer's burner must be visually inspected annually to assure the burner is in good operating order. Things to note would be cracks, corrosion, soot, or other signs of damage that could result in incomplete combustion.	3								
17.	The use of printing inks containing lead or hexavalent chromium is prohibited.	1 – 3								
18.	Containers of ink and solvent must be covered except as necessary to add or remove material from the container. If solvent or ink is being continuously pumped from a container, the opening for the suction line must be as small as possible without interfering with the material transfer rate. Used rags and wipes containing VOCs must be stored in closed containers. Disposal of rags and wipes must be in a manner that minimizes fugitive emissions of VOCs.	Facility-wide								
19.	Control devices must be operated and maintained in accordance with the manufacturer's specifications. Furthermore, control devices must be operated in a manner that minimizes emissions.	1 - 5								

Req. No.	Operating Limits and Requirements	Equipment/ Activity ID No.
20.	The corona treaters on the two presses must remain nonoperational. If the facility wishes to reinstall the corona treaters a permit application must be submitted.	1 – 2
21.	The filter on the sealing machines/bag convertor building exhaust must be replaced or cleaned once per week during periods of operation. Filter changes are not needed during weeks where no operation has occurred within that week. These weeks of non-operation must be noted in the operations log.	5

Monitoring and Recordkeeping Requirements

Req. No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity ID No.
22.	Except for data logged by a computerized data acquisition system, each record required by this ADP must include the date and the name of the person making the record entry, at minimum. If a control device or process is not operating, a record must be made to that effect.	Facility-wide
23.	All records required by this ADP must be kept for a minimum period of no less than five (5) years and must be maintained in a form readily available for inspection by SWCAA representatives.	Facility-wide
24.	Excess emissions and upset conditions must be recorded for each occurrence.	Facility-wide

Req. No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity ID No.
25.	<p>The following information must be collected, recorded at the intervals specified below, and readily available on-site for inspection:</p> <ul style="list-style-type: none"> (a) An inventory balance of all inks and solvents must be recorded monthly. The inventory must be based on ink and solvent purchases (or solvent deliveries in the event that purchased solvent is stored off-site by a third party), beginning inventory, returns, ending inventory, and solvent and ink waste shipped off-site; (b) The center bed temperature of the regenerative thermal oxidizer must be monitored continuously and recorded at least once for every 15 minutes of Destruct Mode operation. A single average center bed temperature value must be generated for each clock hour of Destruct Mode operation; (c) For each ink and solvent utilized on-site, data must be maintained on-site detailing the toxic air pollutant content of the material, the volatile organic content of the material, the water content of the material, the solids content of the material, and the density of the material as necessary to calculate annual emissions and demonstrate compliance with the terms and conditions of this ADP; (d) The total amount of natural gas consumed must be recorded at least once for each calendar year. If possible, the natural gas usage should be determined for each piece of equipment: press dryers, regenerative thermal oxidizer and space heaters; (e) Hours of operation for combined bag sealing machines for each calendar month; (f) Filter replacement/cleaning for the sealing machines/bag convertor building exhaust recorded each week; (g) Results from the visual inspection of the regenerative thermal oxidizer's burner must be recorded for each occurrence; and (h) Maintenance activities that may affect emissions to the ambient air must be logged for each occurrence. 	1 – 5

Emission Monitoring and Testing Requirements

Req. No.	Emission Monitoring and Testing Requirements	Equipment/ Activity ID No.
26.	<p>Emissions testing of the regenerative thermal oxidizer system must be conducted initially and at least once every 60 calendar months in accordance with Appendix A of this ADP. Emission testing must be conducted by the end of March. Emission testing may be conducted within the three calendar months preceding March. Emission testing conducted earlier requires prior approval by SWCAA. Testing before or after the due date does not modify or reset the test schedule.</p>	1 – 3

Reporting Requirements

Req. No.	Reporting Requirements	Equipment/ Activity ID No.
27.	Upset conditions must be reported to SWCAA as soon as possible after discovery by phone call or phone message, email, or fax. It is the Permittee's responsibility to verify that the upset conditions information was received.	Facility-wide
28.	Excess emissions must be reported to SWCAA as follows: (a) As soon as possible, but no later than twelve (12) hours after discovery for emissions that represent a potential threat to human health or safety; (b) As soon as possible, but no later than forty-eight (48) hours after discovery for emissions which the Permittee wishes to claim as unavoidable pursuant to SWCAA 400-107(1); and (c) No later than thirty (30) calendar days after the end of the month of discovery for all other excess emissions.	Facility-wide
29.	Deviations from permit conditions must be reported as soon as possible but no later than 30 days after the end of the month during which the deviation is discovered.	Facility-wide
30.	All air quality related complaints received by the Permittee must be reported to SWCAA within three (3) calendar days of receipt. Complaint reports must include the date and time of the complaint, the name and contact information (if available) for the complainant, the nature of the complaint, and any actions taken by the Permittee to address the complaint.	Facility-wide
31.	SWCAA must be notified at least seven days in advance of the use of any new material in excess of five (5) gallons which will result in emissions of toxic or hazardous air pollutants. The written notice must include the following: (a) A description of the proposed change(s) in materials with a SDS for each new material, (b) The date the change(s) is (are) to be made, (c) The change(s) in emissions of VOCs, HAPs and TAPs occurring as a result of the change, and (d) A summary of any applicable requirement(s) that would apply as a result of the change(s). If the proposed emission rate of a new TAP exceeds the SQER and/or the VOC limit established in this ADP or otherwise circumvents an applicable requirement including those established by this Permit, New Source Review is required prior to making the proposed change.	Facility-wide

Req. No.	Reporting Requirements	Equipment/ Activity ID No.
32.	<p>The following emissions inventory related records must be reported to SWCAA as indicated below:</p> <ul style="list-style-type: none"> (a) An inventory balance of all inks and solvents must be reported to SWCAA for each calendar quarter by the end of the month following the end of the calendar quarter. The inventory must be based on purchases, beginning and ending inventory, and waste or other material shipped off-site; (b) The total amount of natural gas consumed must be reported to SWCAA by March 15th for the previous calendar year. If possible, the natural gas usage should be determined for each piece of equipment: press dryers, Regenerative Thermal Oxidizer, and space heaters; (c) The number of hours all bag sealers were operated must be reported to SWCAA by March 15th for the previous calendar year; (d) The total hours of each mode (Destruction or Start-up/Idle) the regenerative thermal oxidizer operated in must be reported to SWCAA for each calendar quarter by the end of the month following the end of the calendar quarter; (e) Air emissions of VOCs and TAPs must be reported to SWCAA for each calendar quarter by the end of the month following the end of the calendar quarter. Each report must include a summary of total emissions of VOCs and TAPs, summarized in a 12-month rolling total, that have been emitted during the 12-month period ending the last day of the calendar quarter; and (f) Air emissions of criteria air pollutants, VOCs, TAPs, and HAPs must be reported to SWCAA annually by March 15th for the previous calendar year. 	Facility-wide
33.	The results of all emission testing required by this ADP must be reported to SWCAA in writing within forty-five (45) calendar days of test completion.	3

3. General Provisions

Req. No.	General Provisions
A.	For the purpose of ensuring compliance with this ADP, duly authorized representatives of the Southwest Clean Air Agency must be permitted access to the Permittee's premises and the facilities being constructed, owned, operated and/or maintained by the Permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this ADP and applicable regulations and to perform or require such tests as may be deemed necessary.
B.	The provisions, terms, and conditions of this ADP bind the Permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the Permittee.
C.	The requirements of this ADP survive any transfer of ownership of the source or any portion thereof.
D.	This ADP must be posted conspicuously at or be readily available near the source.

Req. No.	General Provisions
E.	This ADP will be invalidated, in whole or in part, if construction or installation of any new or modified equipment has not commenced within eighteen (18) months from date of issuance, if construction is discontinued for a period of eighteen (18) months or more without prior SWCAA approval, or if construction is not completed within a reasonable time.
F.	This ADP does not supersede requirements of other agencies with jurisdiction and further, this ADP does not relieve the Permittee of any requirements of any other governmental agency. In addition to this ADP, the Permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
G.	Compliance with the terms of this ADP does not relieve the Permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70A.15, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
H.	If any provision of this ADP is held to be invalid, all unaffected provisions of the ADP will remain in effect and be enforceable.
I.	No change in this ADP will be made or be effective except as may be specifically set forth by written order of the Southwest Clean Air Agency upon written application by the Permittee for the relief sought.
J.	The Southwest Clean Air Agency may, in accordance with RCW 70A.15, impose such conditions as are reasonably necessary to ensure the maintenance of compliance with the terms of this ADP, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.
K.	For the purposes of establishing if a condition of this ADP has been violated or is being violated, nothing in this ADP precludes the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

Appendix A
Emission Testing Requirements
Regenerative Thermal Oxidizer System

1. Introduction:

- a. The purpose of this testing is to quantify emissions of volatile organic compounds, nitrogen oxides, carbon monoxide, toxic air pollutants and the opacity of emissions from the Regenerative Thermal Oxidizer exhaust to demonstrate compliance with the emission limitations established in this Air Discharge Permit. In addition, the volatile organic compound capture and control efficiencies of the Regenerative Thermal Oxidizer system must be measured to demonstrate compliance with the minimum capture and control efficiencies established by this Air Discharge Permit.

2. Testing Requirements:

- a. Source emissions testing of the Regenerative Thermal Oxidizer inlet and outlet must be conducted at least once every 60 calendar months (no later than the end of March). The initial source emissions test was conducted May 28, 2014. Future emission source tests must be conducted at the maximum production rate at which the equipment will be operated. The use of an alternative test schedule or method must be pre-approved by SWCAA in writing.
- b. A comprehensive test plan must be submitted to SWCAA for review and approval at least 10 calendar days prior to testing.
- c. SWCAA must be notified of the test date at least 5 calendar days prior to testing.
- d. The Regenerative Thermal Oxidizer must be tested in Start-up/Idle Mode and in Destruct Mode. There are no compliance standards for Start-up/Idle Mode; the test is to determine the emission rates during this mode and to assure the burner is operating within an acceptable range.
- e. **Start-up/Idle Mode**

Unless otherwise specified, testing for each constituent must consist of a minimum of three sampling runs from the oxidizer outlet of the duration specified below.

<u>Constituent</u>	<u>Test Method or Equivalent¹</u>	<u>Minimum Test Duration</u>
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O ₂ and CO ₂	EPA Methods 3 or 3A	N/A
Moisture	EPA Method 4	60 minutes
Nitrogen oxides	EPA Method 7E	60 minutes
Carbon monoxide	EPA Method 10	60 minutes
Volatile organic compounds	EPA Method 25A	60 minutes
Opacity of emissions	SWCAA Method 9	6 minutes if no opacity is measured or 30 minutes if opacity is measured.

Appendix A
Emission Testing Requirements
Regenerative Thermal Oxidizer System

2. Testing Requirements (continued):

f. Destruct Mode

Regenerative Thermal Oxidizer Outlet

Unless otherwise specified, testing for each constituent must consist of a minimum of three sampling runs of the duration specified below. In Destruct Mode testing at the inlet and outlet of the Regenerative Thermal Oxidizer must be conducted simultaneously. Testing must be conducted while maintaining operations as steady as practicable.

<u>Constituent</u>	<u>Test Method or Equivalent¹</u>	<u>Minimum Test Duration</u>
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O ₂ and CO ₂	EPA Methods 3 or 3A	N/A
Moisture	EPA Method 4	60 minutes
Nitrogen oxides	EPA Method 7E	60 minutes
Carbon monoxide	EPA Method 10	60 minutes
Volatile organic compounds	EPA Method 25A ²	60 minutes
Opacity of emissions	SWCAA Method 9	6 minutes if no opacity is measured or 30 minutes if opacity is measured.
N-propanol, n-propyl acetate, glycol ethers, and any other TAP comprising more than 5% of total inlet VOCs	EPA Method 18	60 minutes
Methane	EPA method 18	60 minutes

¹ The use of an alternate or equivalent test method must be pre-approved by SWCAA in writing.

² VOC emissions measured using EPA Method 25A during Destruct Mode must be reported as carbon, propane (C₃H₈), and n-propanol (C₃H₈O). If the results of the Method 18 sampling indicates that oxygen-containing compounds make up 25% or more of the total hydrocarbons, then the Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" (August 2004) published by the Environmental Protection Agency or an equivalent alternative approved by SWCAA must be used to appropriately scale VOC emissions.

Regenerative Thermal Oxidizer Inlet

Unless otherwise specified, testing for each constituent must consist of a minimum of three sampling runs of the duration specified below.

Appendix A
Emission Testing Requirements
Regenerative Thermal Oxidizer System

2. Testing Requirements (continued):

<u>Constituent</u>	<u>Test Method or Equivalent¹</u>	<u>Minimum Test Duration</u>
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O ₂ and CO ₂	EPA Methods 3 or 3A	N/A
Moisture	EPA Method 4	60 minutes
Volatile organic compounds	EPA Method 25A ²	60 minutes
N-propanol, n-propyl acetate, glycol ethers, isopropyl alcohol and any other TAP comprising more than 5% of total inlet VOCs	EPA Method 18	60 minutes
Methane	EPA method 18	60 minutes
VOC capture efficiency	Material Balance ³	60 minutes

¹ The use of an alternate or equivalent test method must be pre-approved by SWCAA in writing.

² VOC emissions measured using EPA Method 25A must be reported as carbon, propane (C₃H₈), and n-propanol (C₃H₈O). If the results of the Method 18 sampling indicates that oxygen-containing compounds make up 25% or more of the total hydrocarbons, then the Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" (August 2004) published by the Environmental Protection Agency or an equivalent alternative approved by SWCAA must be used to appropriately scale VOC emissions.

³ The VOC capture efficiency may be determined using a variety of material balance methodologies. The mass of VOCs used by the printers may be compared with the mass of VOCs measured in the vent(s) upstream of the dryer exhaust(s). If the printers are adequately enclosed, the mass of VOCs used by the printers can be compared with the mass of VOCs escaping the enclosure. If the printers are adequately enclosed, the mass of VOCs escaping the enclosure can be compared with the mass of VOCs in the vents(s) upstream of the dryers exhaust(s). All capture efficiency measurement strategies must be pre-approved by SWCAA.

3. Source Operation:

- a. A complete record of production related parameters applicable to the testing, including but not limited to the following must be kept during emissions testing to correlate operations with emissions and must be recorded in the final report of the test results:
1. Average Regenerative Thermal Oxidizer center bed temperature for each run
 2. Average VOC usage rate by each printing press for each run
 3. Types and amount of VOC containing products used by each printing press for each run

Appendix A
Emission Testing Requirements
Regenerative Thermal Oxidizer System

4. Supplemental fuel consumption rate by the Regenerative Thermal Oxidizer
 5. Startups and shutdowns
- b. Source operations during emissions testing must be representative of maximum intended operating conditions.

4. Reporting:

Unless otherwise directed by SWCAA, a final emission test report must be prepared and submitted to SWCAA in an approved electronic format within 45 calendar days of test completion. Each report must include:

- a. A description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations.
- b. Time and date of the test and identification and qualifications of the personnel involved.
- c. A summary of results, reported in units and averaging periods consistent with the applicable emission standard or limit.
- d. A summary of control system or equipment operating conditions.
- e. A summary of production related parameters.
- f. A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation.
- g. A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation.
- h. Copies of field data and example calculations.
- i. Chain of custody information.
- j. Calibration documentation.
- k. Discussion of any abnormalities associated with the results.
- l. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.
- m. In Destruct Mode, if oxygen measured during the source test is greater than 19% O₂, then report with no O₂ correction (as measured). If oxygen measured during the source test is less than 19% O₂, correct to 19% O₂. In Start-up/Idle Mode, correct to 3% O₂.

6. Changes to Testing Requirements:

The source test must be conducted as specified in the sections above. The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the testing schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.