Permit #: **28.9907-01**

Effective Date: **February 13, 2009**

Expiration Date: **March 25, 2013**

SOUTH DAKOTA DEPARTMENT OF

ENVIRONMENT AND NATURAL RESOURCES

TITLE V AIR QUALITY PERMIT

Steven M. Pirner, P.E., Secretary
Department of Environment and Natural Resources

Under the South Dakota Air Pollution
Control Regulations

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to operate the unit(s) at the location designated below and under the listed conditions:

A. Owner

1. Company Name and Address

CCL Label / Sioux Falls, Inc.
P.O. Box 5037
Sioux Falls, SD 57117-5037

2. Actual Source Location and Mailing Address if Different from Above

1209 West Bailey Street
Sioux Falls, SD 57117

3. Permit Contact

Jeff Wilkinson, Plant Manager
(605) 331-6232

4. Facility Contact

Denny Lawson, Purchasing Manager
(605) 331-6202

5. Responsible Official

Brent Chorneyko, General Manager
(605) 336-7940

B. Permit Revisions or Modifications

February 13, 2009 – Administrative amendment to revise the name of the responsible official.

C. Type of Operation

Water-based and ultraviolet cured flexographic printing, rotary ultraviolet cured silk screen printing, and solvent-based rotogravure printing on rolls of pressure sensitive and non-pressure sensitive papers and films, and packaging materials.

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1.0 STANDARD CONDITIONS

1.1 <u>Operation of source.</u> In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated October 11, 2007, and November 19, 2007, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#1	Press #1 – 2002 Schiavi rotogravure printing press.	Not applicable	Volatile organic compound emissions from both presses are controlled using a 2002 Langbein Engelbracht America Corporation model #1892 regenerative thermal oxidizer. The thermal oxidizer operates on natural gas and has a maximum heat input capacity of 3.0 million Btus per hour.
#2	Press #2 – 2008 Acom rotogravure printing press, model Platinum 9 - 620. This press may be installed during the term of this permit.	Not applicable	

1.2 <u>Duty to comply.</u> In accordance with ARSD 74:36:05:16.01(12), the owner or operator shall comply with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of a permit renewal application. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 <u>Property rights or exclusive privileges.</u> In accordance with ARSD 74:36:05:16.01(12), the State's issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local

laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition. In accordance with South Dakota Codified Laws (SDCL) 34A-1-39 and 34A-1-47, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than $10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry. In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records that are required under this permit;
3. Inspect operations regulated under this permit; and/or
4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability. In accordance with ARSD 74:36:05:16.01(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Permit termination, modification, or revocation. In accordance with ARSD 74:36:05:46, the Secretary may recommend that the Board of Minerals and Environment terminate, modify, or revoke this permit for violations of SDCL 34A-1 or the federal Clean Air Act or for nonpayment of any outstanding fee or enforcement penalty.

1.8 Credible evidence. In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is violation of this permit. Credible evidence is as follows:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
   a. A monitoring method approved for the source pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
   b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
   a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
   b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in section (1) or (2)(a).

2.0 PERMIT FEES

2.1 **Annual air fee required.** In accordance with ARSD 74:36:05:06.01, the owner or operator shall submit an annual administrative fee and an annual fee. The fee is based on actual emissions in accordance with ARSD 74:37.

2.2 **Annual operational report.** In accordance with ARSD 74:37:01:06, the Secretary will supply the owner or operator with an annual operational report in January of each year. The owner or operator shall complete and submit the operational report to the Secretary by March 1 of each year. The responsible official shall sign the operational report in the presence of a notary public.

2.3 **Annual air fee.** In accordance with ARSD 74:37:01:08, the Secretary will notify the owner or operator of the required annual air emission fee and administrative fee by June 1 of each year. The fees shall accrue on July 1 and are payable to the Department of Revenue by July 31 of each year.

3.0 PERMIT AMENDMENT AND MODIFICATION CONDITIONS

3.1 **Permit flexibility.** In accordance with ARSD 74:36:05:30, the owner or operator shall have the flexibility to make changes to the source during the term of this permit. The owner or operator shall provide the Secretary written notice at least seven days in advance of the proposed change (NOTE: The Secretary will forward a copy of the written notice to EPA). The written notice shall include a brief description of the change, the date on which the change is to occur, any change in emissions, the proposed changes to the permit, and whether the requested revisions are for an administrative permit amendment, minor permit amendment, or permit modification.

The Secretary will notify the owner or operator whether the change is an administrative permit amendment, a minor permit amendment, or a permit modification. A proposed change that is considered an administrative permit amendment or a minor permit amendment can be completed immediately after the Secretary receives the written notification. The owner or operator must comply with both the applicable requirements governing the change and the proposed permit terms and conditions until the Secretary takes final action on the proposed change.

A proposed change that is considered a modification can not be constructed until the Secretary takes final action on the proposed change. Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.2 **Administrative permit amendment.** In accordance with ARSD 74:36:05:33, the Secretary has 60 days from receipt of a written notice to verify that the proposed change is an administrative permit amendment. As provided in ASRD 74:36:01:03, the Secretary considers a

proposed change an administrative permit amendment if the proposed change accomplishes one of the following:

1. Corrects typographical errors;
2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change at the source;
3. Requires more frequent monitoring or reporting by the source;
4. The ownership or operational control of a source change and the Secretary determines that no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
5. Any other changes that the Secretary and the administrator of EPA determines to be similar to those requirements in this condition.

3.3 **Minor permit amendment.** In accordance with ARSD 74:36:05:38, the Secretary has 90 days from receipt of a written notice or 15 days after the end of EPA's 45-day review period, whichever is later, to take final action on a minor permit amendment. Final action consists of issuing or denying a minor permit amendment or determining that the proposed change is a permit modification. As provided in ASRD 74:36:04:20:02, the Secretary considers a proposed change to be a minor permit amendment if the proposed change:

1. Does not violate any applicable requirements;
2. Does not involve significant changes to existing monitoring, reporting, or record keeping requirements;
3. Does not require or change a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. Does not seek to establish or change a permit term or condition for which the source has assumed to avoid an applicable requirement, a federally enforceable emission cap, or an alternative emission limit. An alternative emission limit is approved pursuant to regulations promulgated under section 112(i)(5) of the federal Clean Air Act.

3.4 **Permit modification.** In accordance with ARSD 74:36:05:39, an owner or operator may apply for a permit modification. A permit modification is defined in ARSD 74:36:01:10 as a physical change in or change in the operation of a source that results in at least one of the following:

1. An increase in the amount of an air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted;
2. A significant change to existing monitoring, reporting, or record keeping requirements in the permit;
3. The change requires or changes a case-by-case determination of an emission limit or other standard, a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis; or
4. The change seeks to establish or change a permit term or condition for which there is a corresponding underlying applicable requirement that the source has assumed to avoid an

applicable requirement, a federally enforceable emissions cap assumed to avoid classification as a modification under a provision of the Title I of the Clean Air Act, or an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Clean Air Act.

Permit modifications are subject to the same procedural requirements, including public comment, as the original permit issuance except that the required review shall cover only the proposed changes.

3.5 **Permit revision.** In accordance with ARSD 74:36:05:40, the Secretary may reopen and revise this permit to meet requirements of SDCL 34A-1 or the federal Clean Air Act.

3.6 **Testing new fuels or raw materials.** In accordance with ARSD 74:36:11:04, an owner or operator may request permission to test a new fuel or raw material to determine if it is compatible with existing equipment before requesting a permit amendment or modification. A complete test proposal shall consist of the following:

1. A written proposal that describes the new fuel or raw material, operating parameters, and parameters that will be monitored and any testing associated with air pollutant emissions during the test;
2. An estimate of the type and amount of regulated air pollutant emissions that will result from the proposed change; and
3. The proposed schedule for conducting the test. In most cases the owner or operator will be allowed to test for a maximum of one week. A request for a test period longer than one week will need additional justification. A test period shall not exceed 180 days.

The Secretary shall approve, conditionally approve, or deny in writing the test proposal within 45 days after receiving a complete proposal. Approval conditions may include changing the test schedule or pollutant sampling and analysis methods. Pollutant sampling and analysis methods may include, but are not limited to performance testing, visible emission evaluation, fuel analysis, dispersion modeling, and monitoring of raw material or fuel rates.

If the Secretary determines that the proposed change will result in an increase in the emission of a regulated air pollutant or result in the emission of an additional regulated air pollutant, the Secretary shall give public notice of the proposed test for 30 days. The Secretary shall consider all comments received during the 30-day public comment period before making a final decision on the test.

The Secretary will not approve a test if the test would cause or contribute to a violation of a national ambient air quality standard.

4.0 PERMIT RENEWAL REQUIREMENTS

4.1 **Permit effective.** In accordance with ARSD 74:36:05:07, this permit shall expire five years from date of issuance unless reopened or terminated for cause.

4.2 **Permit renewal.** In accordance with ARSD 74:36:05:08, the owner or operator shall submit an application for a permit renewal at least 180 days before the date of permit expiration if the owner or operator wishes to continue an activity regulated by this permit. The current permit shall not expire and shall remain in effect until the Secretary takes final action on the timely permit renewal application.

4.3 **Permit expiration.** In accordance with ARSD 74:36:05:28, permit expiration terminates the owner's or operator's right to operate any unit covered by this permit.

5.0 RECORD KEEPING REQUIREMENTS

5.1 **Record keeping and reporting.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application unless otherwise specified in this permit. The records shall be maintained on site for the first two years and may be maintained off site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources
PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3182

5.2 **Signatory Requirements.** In accordance with ARSD 74:36:05:12 and ARSD 74:36:05:16.01, all applications submitted to the Secretary shall be signed and certified by a responsible official. A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. All reports or other information submitted to the Secretary shall be signed and certified by a responsible official or a duly authorized representative. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The responsible official shall notify the Secretary if an authorization is no longer accurate. The new duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative.

5.3 **Certification statement.** In accordance with ARSD 74:36:05:16.01(14)(a), all documents required by this permit, including application forms, reports, and compliance

certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

> "I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete."

5.4 **Monitoring log.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log. The monitoring log shall contain the following information.

1. Maintenance schedule for each piece of control equipment listed in Table 1. At a minimum, the maintenance schedule shall meet the manufacturer's recommended schedule for maintenance. The following information shall be recorded for maintenance:
   a. Identify the unit;
   b. The date and time maintenance was performed;
   c. Description of the type of maintenance;
   d. Reason for performing maintenance;
   e. Signature of person performing maintenance;
2. The owner or operator shall maintain relevant records of the occurrence and duration of each startup, shutdown, or malfunction of process equipment and/or air pollution control equipment; and
3. The following information shall be recorded within two days of each emergency exceedance:
   a. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
   b. The cause(s) of the emergency;
   c. The reasonable steps taken to minimize the emissions during the emergency; and
   d. A statement that the permitted equipment was at the time being properly operated.

5.5 **Continuous temperature monitoring records.** In accordance with ARSD 74:36:05:16.01(9), as referenced to 40 CFR § 60.584(b)(2) and (d), the owner or operator shall maintain the following continuous temperature monitoring records:

1. Records produced by the continuous temperature monitoring device;
2. After the initial performance test required in permit condition 7.11, the owner or operator shall determine and record the average temperature for each 3-hour clock period of printing operation when the average temperature of the exhaust gases is more than 28 degrees Celsius (50 degrees Fahrenheit) below the average temperature demonstrated during the most recent performance test; and
3. Record time periods when the thermal oxidizer was not operational and at least one of the rotogravure printing press lines was operational.

5.6 **Monthly records.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the amount of volatile organic compounds, in tons, emitted into the ambient air from Units #1 and #2 during the month and during the 12-month rolling period for that month. The 12-month rolling total shall be calculated every month using that month's value and the previous 11 months' values. The volatile organic compound emissions shall be based on

the formulas, emission factors, and methods described in the statement of basis. Once the required performance tests are conducted, the amount of volatile organic compound emissions shall be calculated using the results of the most recent performance test.

5.7 **Annual records.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall calculate and record the following amounts from January 1 to December 31 of each year:

1. The amount of natural gas consumed in the thermal oxidizer;
2. The number of hours the thermal oxidizer was not operated when at least one rotogravure printing press line was operational;
3. The number of hours Units #1 and #2 operated; and
4. A summary of the air emissions calculated in permit condition 5.6.

The annual records will be used in conjunction with the operational report and certification letter required in permit conditions 2.2 and 5.10, respectively.

5.8 **Initial startup notification.** In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.7(a)(3), the owner or operator shall notify the Secretary of the actual date of initial startup of Unit #2. The initial startup notification shall be postmarked within 15 days after such date and contain the following information:

1. Identify submittal as initial startup notification;
2. Name of facility, permit number, and reference to this permit condition; and
3. Actual date of initial startup of Unit #2.

5.9 **Semiannual reports.** In accordance with ARSD 74:36:05:16.01(9), as referenced to 40 CFR § 60.585(b) and (c), the owner or operator shall submit semiannual reports to the Secretary. The semiannual reports shall include a summary of the following information:

1. Exceedances of the average volatile organic compound content as specified in permit condition 6.4(1); and
2. The date and time for each period during which the temperature for the thermal oxidizer falls below the desired temperature specified in permit condition 5.5.

The semiannual reports must be postmarked no later than 30 days after the end of the reporting period (i.e., July 30th and January 30th).

5.10 **Annual compliance certification.** In accordance with ARSD 74:36:05:16.01(14), the owner or operator shall submit an annual compliance certification letter to the Secretary by March 1 of each year this permit is in effect (NOTE: The Secretary will forward a copy of the certification letter to EPA). The certification shall contain the following information:

1. Methods used to determine compliance, including: monitoring, record keeping, performance testing and reporting requirements;
2. The source is in compliance and will continue to demonstrate compliance with all applicable requirements;

3. In the event the source is in noncompliance, a compliance plan that indicates how the source has or will be brought into compliance; and
4. Certification statement required in permit condition 5.3.

5.11 **Reporting permit violations.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-5286.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

1. Description of the permit violation and its cause(s);
2. Duration of the permit violation, including exact dates and times; and
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

6.0 CONTROL OF REGULATED AIR POLLUTANTS

6.1 **Visibility limit.** In accordance with ARSD 74:36:12:01, the owner or operator may not discharge into the ambient air an air contaminant of a density equal to or greater than that designated as 20 percent opacity from any permitted unit, operation, or process listed in Table #1. This provision does not apply when the presence of uncombined water is the only reason for failure to meet the requirement.

6.2 **Visibility exceedances.** In accordance with ARSD 74:36:12:02, an exceedance of the operating limit in permit condition 6.1 is not considered a violation during brief periods of soot blowing, start-up, shutdown, or malfunctions. Malfunction means any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. A failure caused entirely or in part by poor maintenance, careless operation, preventable equipment breakdown, or any other cause within the control of the owner or operator of the source is not a malfunction and is considered a violation.

6.3 **Total suspended particulate matter limits.** In accordance with ARSD 74:36:06:02(1) and/or ARSD 74:36:06:03(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table 6-1 for the appropriate permitted unit, operation, and process.

Table 6-1 – Total Suspended Particulate Matter Emission Limit

Description	Emission Limit
Regenerative thermal oxidizer	0.6 pounds per million Btus heat input

6.4 <u>Volatile organic compound limit.</u> In accordance with 40 CFR § 60.582, on and after the date on which the performance test required in permit condition 7.11 has been completed the owner or operator shall either:

1. Use inks with a weighted average volatile organic compound content less than 1.0 kilogram volatile organic compound per kilogram ink solids for each rotogravure printing line; or
2. Reduce volatile organic compound emissions to the atmosphere by 85 percent from each rotogravure printing line.

Compliance with section 2 above has been demonstrated if the average value of the overall control efficiency for three runs is equal to or greater than 85 percent. The overall control efficiency is equal to the volatile organic compound reduction efficiency (E) of the thermal oxidizer multiplied by the volatile organic compound capture efficiency (F) of the vapor capture system. The volatile organic compound reduction efficiency is based on the following equation:

$$E = \frac{\sum_{i=1}^{n}(Q_{bi}C_{bi}) - \sum_{j=1}^{m}(Q_{aj}C_{aj})}{\sum_{i=1}^{n}(Q_{bi}C_{bi})}$$

The volatile organic compound capture efficiency is based on the following equation:

$$F = \frac{\sum_{i=1}^{n}(Q_{bi}C_{bi})}{\sum_{i=1}^{n}(Q_{bi}C_{bi}) + \sum_{k=1}^{p}(Q_{fk}C_{fk})}$$

The symbols for the above equations mean the following:

- C_{aj} = the concentration of the volatile organic compound in each gas stream (j) for the time period exiting the emission control device, in parts per million by volume;
- C_{bi} = the concentration of the volatile organic compound in each gas stream (i) for the time period entering the emission control device, in parts per million by volume;
- C_{fk} = the concentration of volatile organic compound in each gas stream (k) for the time period which is not directed to an emission control device, in parts per million by volume;
- Q_{aj} = the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in standard cubic meters per hour;
- Q_{bi} = the volumetric flow rate of each effluent gas stream (i) entering the emission control device, in standard cubic meters per hour; and
- Q_{fk} = the volumetric flow rate of each effluent gas stream (k) not directed to an emission control device, in standard cubic meters per hour.

6.5 Operating without the thermal oxidizer not allowed. In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall operate the thermal oxidizer when one or both rotogravure printing presses described in Table #1 are operational. The thermal oxidizer shall be operated in accordance with the manufacturer's specifications unless otherwise specified in this permit.

6.6 Air emission exceedances – emergency conditions. In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an unavoidable emission exceedance of a technology-based emission limit if the exceedance is caused by an emergency condition and immediate action is taken by the owner or operator to restore the operations back to normal. An emergency condition is a situation arising from a sudden and reasonably unforeseeable event beyond the control of the source, including acts of God. An emergency shall not include an emission exceedance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. The owner or operator shall notify the Secretary within two working days of the incident and take all steps possible to eliminate the excess emissions. The notification must provide a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. If the notification is submitted orally, a written report summarizing the information required by the notification shall be submitted and postmarked within 30 days of the oral notification

6.7 Circumvention not allowed. In accordance with ARSD 74:36:05:47.01, the owner or operator may not install, use a device, or use a means that conceals or dilutes an air emission that would otherwise violate this permit. This includes operating a unit or control device that emits air pollutants from an opening other than the designed stack, vent, or equivalent opening.

6.8 Minimizing emissions. In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.11(d), the owner or operator shall at all times, when practicable, maintain and operate all permitted units in a manner that minimizes air pollution emissions.

7.0 PERFORMANCE TESTS

7.1 Performance test may be required. In accordance with ARSD 74:36:11:02, the Secretary may request a performance test during the term of this permit. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test conducted while operating less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of performance test required by the Secretary if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

7.2 Test methods and procedures. In accordance with ARSD 74:36:11:01, the owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test specified in 40 CFR Part 60, Appendix A, 40 CFR Part

63, Appendix A, and 40 CFR Part 51, Appendix M is not federally applicable or federally required.

7.3 **Representative performance test.** In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.

7.4 **Submittal of test plan.** In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification that outlines what needs to be completed for approval.

7.5 **Notification of test.** In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

7.6 **Performance test report.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. A brief description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and
10. Any other information required by the test method.

7.7 **Testing methods for determining compliance with permit condition 6.4.** In accordance with ARSD 74:36:05:16.01(14), as referenced to 40 CFR § 60.583(a), the owner or operator shall use the following test procedures to determine compliance with permit condition 6.4:

1. 40 CFR Part 60, Appendix A, Method 24 for analysis of inks. If nonphotochemically reactive solvents are used in the inks, standard gas chromatographic techniques may be used to identify and quantify these solvents. The results of 40 CFR Part 60, Appendix A, Method 24 may be adjusted to subtract these solvents from the measured volatile organic compound content;
2. 40 CFR Part 60, Appendix A, Method 25A for volatile organic compound concentration (the calibration gas shall be propane);
3. 40 CFR Part 60, Appendix A, Method 1 for sample and velocity traverses;
4. 40 CFR Part 60, Appendix A, Method 2 for velocity and volumetric flow rates;
5. 40 CFR Part 60, Appendix A, Method 3 for gas analysis; and
6. 40 CFR Part 60, Appendix A, Method 4 for stack gas moisture.

7.8 **Performance test for volatile organic compounds.** In accordance with ARSD 74:36:05:16.01(14), as referenced to 40 CFR § 60.583(d), a performance test to determine compliance with permit condition 6.4(2) shall be based on the following:

1. The performance test shall consist of three runs. Each test run must last a minimum of 30 minutes and shall continue until the printing operation is interrupted or 180 minutes of continuous operation occurs. During each test run, both print lines shall be printing continuously and operating normally. The volatile organic compound emission reduction efficiency achieved for each test run is averaged over the entire test run period;
2. The volatile organic compound concentration values at the inlet and outlet of the thermal oxidizer shall be measured simultaneously;
3. The volumetric flow rate shall be determined from one 40 CFR Part 60, Appendix A, Method 2 measurement for each test run conducted immediately prior to, during, or after that test run. Volumetric flow rates at the inlet and outlet of the thermal oxidizer do not need to be measured simultaneously; and
4. In order to determine the volatile organic compound capture efficiency for Unit #2's vapor capture system, all fugitive volatile organic compound emissions from Unit #2 shall be captured and vented through stacks suitable for measurement. In addition, Unit #2 shall be isolated from other sources of volatile organic compound emissions during the performance test. These two requirements shall be accomplished using one of the following methods:
   a. Build a permanent enclosure around Unit #2:
   b. Build a temporary enclosure around Unit #2 and duplicate, to an extent that is reasonably feasible, the ventilation conditions that are in effect when Unit #2 is not enclosed. One option is to divide the room exhaust rate by the volume of the room and then duplicate that quotient or 20 air changes per hour, whichever is smaller, in the temporary enclosure; or
   c. Shut down all other sources of volatile organic compound emissions and continue to exhaust fugitive emissions from Unit #1 through any building ventilation system and other room exhausts such as print line ovens and embossers.

During the performance test, the owner or operator shall determine and record the average temperature of the thermal oxidizer's exhaust gases.

7.9 <u>Method for determining weighted average volatile organic compound content of inks.</u> In accordance with ARSD 74:36:05:16.01(9), as referenced to 40 CFR § 60.583(b), the owner or operator shall determine compliance with permit condition 6.4(1) by determining the weighted average volatile organic compound content of the inks according to the following procedures:

1. Determine and record the volatile organic compound content and amount of each ink used at the print head, including the volatile organic compound content and amount of diluent solvent for any time periods when volatile organic compound emission control equipment is not used;
2. Compute the weighted average volatile organic compound content in accordance with the following equation:

$$G = \frac{\sum_{i=1}^{n}(W_{oi}M_{ci}) + \sum_{j=1}^{m}(W_{oj}M_{dj})}{\sum_{i=1}^{n}(M_{ci}W_{si})}$$

where: G = the weighted average mass of volatile organic compound per mass of ink solids applied, in kilograms per kilogram;

M_{ci} = the total mass of each ink (i) applied in the time period as determined from plant records, in kilograms;

M_{dj} = the total mass of each dilution solvent (j) added at the print line in the time period determined from plant records, in kilograms;

W_{oi} = the weight fraction of volatile organic compound in each ink (i) used in the time period as determined from 40 CFR Part 60, Appendix A, Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram;

W_{oj} = the weight fraction of volatile organic compound in each dilution solvent (j) added at the print line in the time period determined from 40 CFR Part 60, Appendix A, Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram; and

W_{si} = the weight fraction of solids in each ink (i) used in the time period as determined from 40 CFR Part 60, Appendix A, Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram;

3. The weighted average volatile organic compound content of the inks shall be calculated over a period that does not exceed one calendar month, or four consecutive weeks;
4. Each determination of the weighted average volatile organic compound content shall constitute a performance test for any period when volatile organic compound emission control equipment is not used. 40 CFR Part 60, Appendix A, Method 24 or ink manufacturers' formulation data along with plant blending records (if plant blending is done) may be used to determine volatile organic compound content; and
5. If, during the time periods when emission control equipment is not used, all inks used contain less than 1.0 kilogram volatile organic compound per kilogram ink solids, the owner or operator is not required to calculate the weighted average volatile organic compound content, but must verify and record the volatile organic compound content of each ink (including any

added dilution solvent) used as determined by 40 CFR Part 60, Appendix A, Method 24, ink manufacturers' formulation data, or plant blending records.

7.10 <u>Alternative method for determining weighted average volatile organic compound content of inks.</u> In accordance with ARSD 74:36:05:16.01(9), as referenced to 40 CFR § 60.583(c), the owner or operator may determine compliance with permit condition 6.4(1) by determining the weighted average volatile organic compound content using an inventory system instead of the compliance method required in permit condition 7.9. The Secretary shall approve the inventory system of accounting for volatile organic compound content prior to the initial performance test required in permit condition 7.11. The requirements for an approved inventory system are as follows:

1. The inventory system shall accurately account to the nearest kilogram for the volatile organic compound content of all inks and dilution solvent used, recycled, and discarded during the averaging period. Separate records must be kept for each rotogravure printing line;
2. To determine volatile organic compound content of inks and dilution solvent used or recycled, 40 CFR Part 60, Appendix A, Method 24 or ink manufacturers' formulation data must be used in combination with plant blending records (if blending is done) or inventory records or purchase records for new inks or dilution solvent;
3. For inks to be discarded, only 40 CFR Part 60, Appendix A, Method 24 shall be used to determine the volatile organic compound content. Inks to be discarded may be combined prior to measurement of volume or weight and testing by 40 CFR Part 60, Appendix A, Method 24;
4. The Secretary may require the use of 40 CFR Part 60, Appendix A, Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant records; and
5. The Secretary shall approve the inventory system of accounting for volatile organic compound content prior to the initial performance test.

<u>7.11 Initial performance test.</u> In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8, the owner or operator shall conduct an initial performance test to demonstrate compliance with permit condition 6.4 within 60 days of Unit #2 achieving full production but not later than 180 days after initial startup of Unit #2. The owner or operator shall use the test methods described in permit condition 7.9 or 7.10 if demonstrating compliance with permit condition 6.4(1) or the performance test method described in permit condition 7.8 if demonstrating compliance with permit condition 6.4(2).

If the owner or operator demonstrates compliance with permit condition 6.4(1), the owner or operator shall still determine volatile organic compound emissions from Unit #2 using the stack testing procedures outlined in permit condition 7.8. The initial stack test shall be conducted within 60 days of Unit #2 achieving full production but not later than 180 days after initial startup of Unit #2.

8.0 MONITORING

8.1 <u>Monitoring temperature for the thermal oxidizer.</u> In accordance with ARSD 74:36:05:16.01(9), as referenced to 40 CFR § 60.584(b), the owner or operator shall install,

calibrate, maintain, and operate a monitoring device that continuously measures and records the temperature of the thermal oxidizer's exhaust gases. The monitoring device shall be calibrated annually and have an accuracy of plus or minus 0.75 percent of the temperature being measured, expressed in degrees Celsius, or plus or minus 2.5 degrees Celsius, whichever is greater. The owner or operator shall maintain the temperature of the exhaust gases exiting the thermal oxidizer combustion chamber as follows:

1. The initial temperature shall be maintained at a minimum of 1,500 degrees Fahrenheit;
2. After the initial performance test required in permit condition 7.11 demonstrates compliance with permit condition 6.4(2) and 9.2, the exhaust gas temperature exiting the thermal oxidizer shall be maintained equal to or greater than the average temperature achieved during the performance test; and
3. If the temperature of the exhaust gases exiting the thermal oxidizer falls below the desired temperature by more than 50 degrees Fahrenheit for more than an one hour, the owner or operator shall perform the following steps:
    a. The owner or operator will only operate Unit #1 and/or Unit #2 with the thermal oxidizer at or above the average temperature achieved during a performance test that demonstrated compliance with permit conditions 6.4(2) and 9.2; and
    b. Conduct a performance test on the gases exiting the thermal oxidizer to determine compliance with permit conditions 6.4(2) and 9.2 at the lower temperature. The performance test shall be conducted within 60 days after the date the temperature dropped below the desired temperature by more than 50 degrees Fahrenheit for more than one hour.

If the performance test demonstrates compliance at the lower temperature, the temperature of the thermal oxidizer combustion chamber exhaust gases shall be maintained equal to or greater than the average temperature achieved during the performance test.

9.0 PREVENTION OF SIGNIFICANT DETERIORATION EXEMPTION

9.1 <u>Prevention of significant deterioration review exemption.</u> The owner or operator is exempt from a prevention of significant deterioration review for volatile organic compounds. The exemption is based on operational and air emission limits in permit conditions 1.1 and 9.2. Any relaxation in the permit conditions stated above that increases applicable emissions equal to or greater than 238 tons per 12-month rolling period may require a full prevention of significant deterioration review as though construction had not commenced on the source.

9.2 <u>Plant wide volatile organic compound limit.</u> In accordance with ARSD 74:36:05:16.01(8), the owner or operator shall not emit into the ambient air greater than or equal to 238 tons of volatile organic compounds (VOCs) per 12-month rolling period. The 12-month rolling total shall be calculated every month using that month's value and the previous 11 months' values.

A short term limit (pounds per hour) is established in Table #9-1 to ensure that the long term limit of 238 tons per 12-month rolling period is not exceeded.

Table 9-1 – Volatile Organic Compound Short Term Emission Limit

Description	VOC Short Term Limit
Regenerative Thermal Oxidizer	32.3 pounds per hour

The VOC emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods. Compliance with the short term limit will be based on the stack testing requirements in permit condition 7.7.