

**Permit #:** 28.9905-06

**Effective Date:** May 1, 2009

**Expiration Date:** June 13, 2011

The seal of the State of South Dakota is a circular emblem with a serrated outer edge. It features a central landscape scene with a river, a windmill, and a plow. Above the scene is a banner with the motto "UNDER GOD THE PEOPLE RULE". The words "STATE OF SOUTH DAKOTA" are written in an arc across the top, and "GREAT SEAL." is written in an arc across the bottom. The year "1889" is prominently displayed at the bottom center of the seal.

**SOUTH DAKOTA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
TITLE V AIR QUALITY OPERATING PERMIT**

A handwritten signature in black ink, appearing to read "S. M. Pirner".

Steven M Pirner, 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) listed in Table #1 under the listed conditions.

A. Owner

1. Company Name and Mailing Address

Daktonics, Inc.  
P.O. Box 5128  
Brookings, SD 57006-5128

2. Actual Source Location if Different from Above

331 32<sup>nd</sup> Avenue  
Brookings, SD

3. Permit Contact

Scott G. Lanam, Plant Manager and Environmental Coordinator  
(605) 697-4000

4. Facility Contact

Scott G. Lanam, Plant Manager and Environmental Coordinator  
(605) 697-4000

5. Responsible Official

James Morgan, CEO  
(605) 697-4000

B. Permit Revisions or Modifications

May 1, 2009 – Permit modification to add a Cefla Flacioni Kleenspray automatic paint sprayer (Unit #15).

C. Type of Operation

Daktronics, Inc. manufactures and paints electronic visual information display systems.

# TABLE OF CONTENTS

---

	Page
<b>1.0 STANDARD CONDITIONS.....</b>	<b>1</b>
1.1 Operation of source.....	1
1.2 Duty to comply.....	2
1.3 Property rights or exclusive privileges.....	2
1.4 Penalty for violating a permit condition.....	2
1.5 Inspection and entry.....	2
1.6 Severability.....	2
1.7 Permit termination, modification, or revocation.....	3
1.8 Credible evidence.....	3
<b>2.0 PERMIT FEES.....</b>	<b>3</b>
2.1 Annual air fee required.....	3
2.2 Annual operational report.....	3
2.3 Annual air fee.....	3
<b>3.0 PERMIT AMENDMENT AND MODIFICATION CONDITIONS.....</b>	<b>4</b>
3.1 Permit flexibility.....	4
3.2 Administrative permit amendment.....	4
3.3 Minor permit amendment.....	4
3.4 Permit modification.....	5
3.5 Permit revision.....	5
3.6 Testing new fuels or raw materials.....	5
<b>4.0 PERMIT RENEWAL REQUIREMENTS.....</b>	<b>6</b>
4.1 Permit effective.....	6
4.2 Permit renewal.....	6
4.3 Permit expiration.....	6
<b>5.0 RECORD KEEPING AND REPORTING REQUIREMENTS.....</b>	<b>6</b>
5.1 Record keeping and reporting.....	6
5.2 Signatory requirements.....	7
5.3 Certification statement.....	7
5.4 Monitoring log for emergency exceedances.....	7
5.5 Records for coating operations.....	7
5.6 Records for allowance of organic hazardous air pollutants contained in waste.....	8
5.7 Monthly records.....	9
5.8 Annual records.....	9
5.9 Initial startup notification for Units #12, #13, and #14.....	9
5.10 Notification of compliance status.....	10
5.11 Semiannual compliance report.....	11
5.12 Periodic reporting.....	12

# TABLE OF CONTENTS

---

	Page
5.13 Annual compliance certification.....	12
5.14 Reporting permit violations.....	13
<b>6.0 CONTROL OF REGULATED AIR POLLUTANTS .....</b>	<b>13</b>
6.1 Visibility limit.....	13
6.2 Visibility exceedances.....	13
6.3 Organic hazardous air pollutant emission limit. In accordance with ARSD.....	13
6.4 Plant wide volatile organic compound emission limit.....	14
6.5 Air emission exceedances – emergency conditions.....	14
6.6 Circumvention not allowed.....	14
6.7 Minimizing emissions.....	14
<b>7.0 PERFORMANCE TESTS.....</b>	<b>15</b>
7.1 Performance test may be required.....	15
7.2 Test methods and procedures.....	15
7.3 Representative performance test.....	15
7.4 Submittal of test plan.....	15
7.5 Notification of test.....	15
7.6 Performance test report.....	16
<b>8.0 INITIAL COMPLIANCE DEMONSTRATION – COMPLIANT MATERIAL OPTION.....</b>	<b>16</b>
8.1 Demonstrating compliance with the organic hazardous air pollutant emission limit using the compliant materials option.....	16
8.2 Determine mass fraction of organic hazardous air pollutant for each material used.....	17
8.3 Determine the volume fraction of coating solids for each coating.....	19
8.4 Determine the density of each coating.....	20
8.5 Determine the organic hazardous air pollutant content of each coating.....	20
<b>9.0 DEMONSTRATING CONTINUOUS COMPLIANCE – COMPLIANT MATERIALS OPTION.....</b>	<b>21</b>
9.1 Demonstrating continuous compliance using the compliant materials option.....	21
<b>10.0 INITIAL COMPLIANCE DEMONSTRATION – EMISSION RATE WITHOUT ADD-ON CONTROLS OPTION .....</b>	<b>22</b>
10.1 Demonstrating compliance with the organic hazardous air pollutant emission limit using the emission rate without add-on controls option.....	22
10.2 Determine the mass fraction of organic hazardous air pollutant for each material.....	22

## TABLE OF CONTENTS

---

	<b>Page</b>
10.3 Determine the volume fraction of coating solids.....	22
10.4 Determine the density of each material. ....	22
10.5 Determine the volume of each material used. ....	23
10.6 Calculate the mass of organic hazardous air pollutant emissions.....	23
10.7 Determine the mass of organic hazardous air pollutant in waste material. ....	25
10.8 Determine the total volume of coating solids used.....	25
10.9 Determine the organic hazardous air pollutant emission rate. ....	26
<b>11.0 DEMONSTRATING CONTINUOUS COMPLIANCE – EMISSION RATE</b>	
<b>WITHOUT ADD-ON CONTROLS OPTION .....</b>	<b>27</b>
11.1 Demonstrating continuous compliance using the emission rate without add-on controls option .....	27
<b>12.0 PREVENTION OF SIGNIFICANT DETERIORATION EXEMPTION.....</b>	<b>27</b>
12.1 Prevention of significant deterioration review exemption. ....	27

## 1.0 STANDARD CONDITIONS

**1.1 Operation of source.** 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 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated September 24, 2004, October 14, 2005, October 19, 2005, November 21, 2005, June 13, 2007, July 3, 2007, and December 11, 2008, unless modified by the conditions of this permit. 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  
Description of Permitted Units, Operations, and Processes**

Unit	Description	Control Device
#1	1999 JBI paint booth (Sports) coating operation, Model A-44-PDT-S <sup>1</sup>	None
#2	1994 JBI paint booth coating operation, model AT-40-SB-S <sup>1</sup>	None
#3	1985 Binks contract paint booth coating operation, model CA-544-T <sup>1</sup>	None
#5	1991 Nordson conformal coater, model SCIR2	None
#6	1999 Precision Valve and Automation (PVA) conformal coater, model PVA 2000	None
#8	1999 Vitronics, Soltec Delta Wave, wave soldering machine, model 6622CC	None
#9	1995 PVA potting machine #1, model PVA 1000 / Sheepscoot model 9450	None
#10	1995 PVA potting machine #2, model PVA 1000 / Sheepscoot model 9450	None
#11	2003 Vitronics, Soltec Wave Solder, wave soldering machine, model 6622CC	None
#12	JBI cross draft paint booth coating operation, model T-50-PDT-S <sup>1</sup>	None
#13	2006 Tekor Series 5000 paint booth, model no. 141650 <sup>1</sup>	None
#14	Tekor Series 5000 cross draft paint booth, model no. TTB-SE-14150-EI-ME <sup>1</sup>	None
#15	2005 Cefla Flacioni Kleenspray automatic paint sprayer, Model 12 <sup>1</sup> . The sprayer uses an air assisted air mix method of spraying.	None

<sup>1</sup> – Coating operation includes the equipment used to apply cleaning materials to a substrate to prepare it for coating application (surface preparation) or to remove dried coating; to apply coating to a substrate (coating application) and to dry or cure the coating after application; or to clean coating operation equipment (equipment cleaning); all storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed; all manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and

cleaning materials; and all storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

**1.2 Duty to comply.** 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 Property rights or exclusive privileges.** 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, 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;
  - 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, and the proposed changes to this permit.

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. 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. 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 any proposed change that meets the definition of a modification in ARSD 74:36:01:10 or is not an administrative amendment or a minor permit amendment. Modification is defined as a physical change or change in operation that increases the amount of air pollutant emitted by the source or results in the emission of an air pollutant not previously emitted. 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 AND REPORTING REQUIREMENTS**

**5.1 Record keeping and reporting.** In accordance with ARSD 74:36:05:16.01(9) and ARSD 74:36:08:37, as referenced to 40 CFR § 63.3931, 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 occurrence, sample, measurement, maintenance, corrective action, report, record or application. 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 in a form suitable and readily available for expeditious review by the Secretary. Where appropriate, the records may be maintained as electronic spreadsheets or as a database. 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, 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 for emergency exceedances.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall maintain a monitoring log for emergency exceedances. The following information shall be recorded in the monitoring log within two days of each emergency exceedance:

1. The date of the emergency exceedance and the date the emergency exceedance was reported to the Secretary;
2. The cause(s) of the emergency;
3. The reasonable steps taken to minimize the emissions during the emergency; and
4. A statement that the permitted equipment was at the time being properly operated.

**5.5 Records for coating operations.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3930, the owner or operator must collect and keep records of the following data and information for the coating operations in Table #1. Failure to collect and keep these records is considered a deviation from the applicable standard in this permit:

1. A copy of each notification and report submitted to comply with permit conditions 5.8, 5.9, and 5.10 and the documentation supporting each notification and report;
2. A current copy of information provided by materials suppliers or manufacturers, such as manufacturer's formulation data, or test data used to determine the mass fraction of organic hazardous air pollutant and density for each coating, thinner and/or other additive, and cleaning material, and the volume fraction of coating solids for each coating. If the owner or operator conducts testing to determine mass fraction of organic hazardous air pollutant, density, or volume fraction of coating solids, the owner or operator must keep a copy of the complete test report. If information is provided by the manufacturer or supplier of the material that was based on testing, the owner or operator must keep the summary sheet of results provided by the manufacturer or supplier. The owner or operator is not required to obtain the test report or other supporting documentation from the manufacturer or supplier.
3. The following records for each compliance period:
  - a. A record of the compliance option used for each coating operation in Table #1 and the time periods (beginning and ending dates and times) for each option used;
  - b. If the compliant material option is used to demonstrate compliance, a record of the calculation of the organic hazardous air pollutant content for each coating, using Equation 8-2;
  - c. If the emission rate without add-on controls option is used to demonstrate compliance, a record of the calculation of the total mass of organic hazardous air pollutant emissions for the coatings, thinners and/or other additives, and cleaning materials used each month using Equations 10-1 through 10-5 and, if applicable, the calculation used to determine mass of organic hazardous air pollutant in waste materials according to the procedure in permit condition 10.7; the calculation of the total volume of coating solids used each month using Equation 10-5; and the calculation of each 12-month organic hazardous air pollutant emission rate using Equation 10-6;
  - d. A record of the name and volume of each coating, thinner and/or other additive, and cleaning material used during each compliance period. If the compliant material option is used to demonstrate compliance, the owner or operator may maintain purchase records for each material used rather than a record of the volume used;
  - e. A record of the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during each compliance period unless the material is tracked by weight;
  - f. A record of the volume fraction of coating solids for each coating used during each compliance period;
  - g. If the emission rate without add-on controls option is used to demonstrate compliance, records of the density for each coating, thinner and/or other additive, and cleaning material used during each compliance period; and
  - h. Records of the date, time and duration of each deviation.

**5.6 Records for allowance of organic hazardous air pollutants contained in waste.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3930(h), if the allowance in Equation 10-1 is used for organic hazardous air pollutants contained in waste materials sent to or

designated for shipment to a treatment, storage, and disposal facility according to the procedure in permit condition 10.7, the owner or operator must maintain records of the following information:

1. The name and address of each treatment, storage, and disposal facility to which waste materials were sent for which an allowance in Equation 10-1 was used, a statement of which subparts under 40 CFR Parts 262, 264, 265, and 266 apply to the facility, and the date of each shipment;
2. Identification of the coating operations producing waste materials included in each shipment and the month or months in which the allowance in Equation 10-1 was used; and.
3. The methodology used in accordance with permit condition 10.7 to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a treatment, storage, and disposal facility each month; and the methodology to determine the mass of organic hazardous air pollutants contained in these waste materials. This must include the sources for all data used in the determination, methods used to generate the data, frequency of testing or monitoring, and supporting calculations and documentation, including the waste manifest for each shipment.

**5.7 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 the permitted units and fugitive operations during the month and during the 12-month rolling period for that month. The amount of volatile organic compounds emitted to the ambient air from permitted units and fugitive sources shall be based on production records, consumption records, purchase records, etc.

**5.8 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 annual amount of volatile organic compound emissions; and
2. The annual amount of hazardous air pollutant emissions.

The amount volatile organic compound and hazardous air pollutant emissions shall be based on the amount of products used each month and the composition of the product based on the material safety data sheets, manufacturer supplied formulation data, EPA approved test method data, or a method approved by the Secretary.

**5.9 Initial startup notification for Units #12, #13, and #14.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3910(b), the owner or operator shall notify the Secretary of the actual dates of initial startup of Units #12, #13, and #14. The initial startup notification shall be postmarked within 120 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 dates of initial startup of Units #12, #13, and #14.

**5.10 Notification of compliance status.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3910(c), the owner or operator must submit a notification of compliance status no later than 30 calendar days following the end of the initial compliance period. The notification of compliance status must contain the following information:

1. Company name and address;
2. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report;
3. Date of the report and beginning and ending dates of the reporting period;
4. Identification of the compliance option or options used on each coating operation in Table #1;
5. A statement of whether or not the emission limitations were achieved for the initial compliance period;
6. If there was a deviation, include the following information:
  - a. A description and statement of the cause of the deviation; and
  - b. If the emission limits in permit condition 6.3 was exceeded, all calculations used to determine the kilograms (pounds) of organic hazardous air pollutants emitted per liter (gallon) coating solids used must be included. Information provided by the materials' suppliers or manufacturers, or test reports does not need to be submitted;
7. For each data item listed below that is required by the compliance option used to demonstrate compliance with the emission limit, an example of how the value was determined, including calculations and supporting data. Supporting data may include a copy of the information provided by the supplier or manufacturer of the example coating or material, or a summary of the results of testing conducted in accordance with the procedure in permit conditions 8.2, 8.3, and/or 8.4. Copies of test reports are not required:
  - a. Mass fraction of organic hazardous air pollutant for one coating, for one thinner and/or other additive, and for one cleaning material;
  - b. Volume fraction of coating solids for one coating;
  - c. Density for one coating, one thinner and/or other additive, and one cleaning material. If the compliant material option is used to demonstrate compliance, only the example coating density is required;
  - d. The amount of waste materials and the mass of organic hazardous air pollutants contained in the waste materials if the allowance in Equation 10-1 is claimed.
8. The calculation of kilograms (pounds) organic hazardous air pollutants emitted per liter (gallon) coating solids used for the compliance option(s) used as specified below:
  - a. For the compliant material option, an example calculation of the organic hazardous air pollutant content for one coating using Equation 8-2; and
  - b. For the emission rate without add-on controls option, the calculation of the total mass of organic hazardous air pollutant emissions for each month, the calculation of the total

volume of coating solids used each month, and the calculation of the 12-month organic hazardous air pollutant emission rate using Equations 10-1 through 10-6.

The notification of initial compliance status shall cover the initial compliance period from January 2, 2007, through January 31, 2008. The notification of initial compliance status must be submitted no later than 30 calendar days following the end of the initial compliance period.

**5.11 Semiannual compliance report.** In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.10(d), and 74:36:08:37, as referenced to 40 CFR § 63.3920(a), the owner or operator shall submit a semiannual compliance report to the Secretary. The semiannual report shall contain the following information:

1. Company name and address;
2. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report;
3. Date of report and beginning and ending dates of the reporting period. The reporting period is the 6-month period ending on June 30 or December 31. The information reported for each of the 6 months in the reporting period is based on the last 12 months of data prior to the date of each monthly calculation;
4. Identification of the compliance option or options used on each coating operation in Table #1 during the reporting period. If the compliance option used changes during the compliance period, include the beginning and ending dates for each option used;
5. If the emission rate without add-on controls options was used to demonstrate compliance, the calculation results for each rolling 12-month organic hazardous air pollutant emission rate during the 6-month reporting period;
6. If there were no deviations from the emission limitations in permit condition 6.3, a statement that there were no deviations from the emission limitations during the reporting period;
7. If the compliant materials option is used to demonstrate compliance and there was a deviation from the emission limitation in permit condition 6.3, the semiannual compliance report shall contain the following information:
  - a. Identification of each coating used that deviated from the applicable emission limit, and each thinner and/or other additive, and cleaning material used that contained organic hazardous air pollutants, and the dates and time periods each was used;
  - b. The calculation of the organic hazardous air pollutant content using Equation 10-2 for each coating identified in subparagraph (a) of this permit condition;
  - c. The determination of mass fraction of organic hazardous air pollutant for each thinner and/or other additive, and cleaning material identified in subparagraph (a) of this permit condition; and
  - d. A statement of the cause of each deviation.
8. If the emission rate without add-on controls option is used to demonstrate compliance and there was a deviation from the applicable emission limits in permit condition 6.3, the semiannual compliance report shall contain the following information:

- a. The beginning and ending dates of each compliance period during which the 12-month organic hazardous air pollutant emission rate exceeded the applicable emission limit;
- b. The calculations used to determine the 12-month organic hazardous air pollutant emission rate for the compliance period in which the deviation occurred. The calculations for Equations 10-1 through 10-5; and if applicable, the calculation used to determine mass of organic hazardous air pollutants in waste materials according to the procedure in permit condition 10.7; and
- c. A statement of the cause of each deviation.

The first semiannual report shall cover the period beginning on February 1, 2008, and ending June 30, 2008. Subsequent semiannual reports must cover the period from July 1 through December 31, or the semiannual reporting period from January 1 through June 30. Each semiannual report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

**5.12 Periodic reporting.** In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall submit a quarterly report to the Secretary by the end of each calendar quarter. Once the facility has successfully demonstrated compliance with the operational limits for four consecutive quarters, the owner or operator may revert to semi-annual reporting if the 12-month rolling total for volatile organic compounds is less than or equal to 50 percent of the plantwide limit for volatile organic compounds. The reporting frequency may revert back to quarterly reporting if there are sufficient data that indicate more frequent monitoring is warranted or the 12-month rolling total is greater than 50 percent of the plantwide limit. The quarterly and semi-annual report shall contain the following information:

1. Name of facility, permit number, reference to this permit condition, identifying the submittal as a quarterly or semi-annual report, and calendar dates covered in the reporting period;
2. The quantity of volatile organic compounds, in tons, emitted for each 12-month period in the reporting period and supporting documentation; and
3. A copy of the material safety data sheet, manufacturer supplied formulation data, or EPA approved test method data for any product used at the facility during the reporting period that has not been previously submitted to the Secretary.

The first quarterly report must be postmarked no later than 30 days after the end of the calendar quarter in which the permit is issued. The remaining reports must be postmarked no later than 30 days after the end of the reporting period.

**5.13 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.

**5.14 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 Organic hazardous air pollutant emission limit.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR §§ 63.3890(b), on and after January 2, 2007, the owner or operator shall limit the organic hazardous air pollutant emissions from Units #1, #2, #3, #12, #13, #14, and #15 to no more than 0.31 kilograms (2.6 pounds) organic hazardous air pollutant

per liter (gallon) coating solids used during each 12-month compliance period. Initial compliance with this permit condition shall be demonstrated based on the permit conditions in Chapter 8.0 or 10.0. Continuous compliance with this permit condition shall be demonstrated based on the permit conditions in Chapter 9.0 or 11.0.

**6.4 Plant wide volatile organic compound emission limit.** 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 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. The issuance date of this permit shall be the first month of the 12-month rolling period.

**6.5 Air emission exceedances – emergency conditions.** In accordance with ARSD 74:36:05:16.01(18), the Secretary will allow for an emission exceedance of 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.

**6.6 Circumvention not allowed.** In accordance with ARSD 74:36:05:47.01 and ARSD 74:36:08:03, as referenced to 40 CFR § 63.4(b), no owner or operator shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with this permit. Such concealment includes, but is not limited to the use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere or the use of gaseous diluents to achieve compliance with a relevant standard for visible emissions.

**6.7 Minimizing emissions.** In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.6(e)(1), the owner or operator shall at all time, when practicable, maintain and operate all permitted units in a manner consistent with safety and good air pollution control practices for minimizing emissions. This includes periods of startup, shutdown, and malfunctions unless otherwise specified in this permit. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the permitted units to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air

pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

## **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. 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 that is 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 a 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.** 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.

## **8.0 INITIAL COMPLIANCE DEMONSTRATION – COMPLIANT MATERIAL OPTION**

**8.1 Demonstrating compliance with the organic hazardous air pollutant emission limit using the compliant materials option.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941, the owner or operator may choose to use the compliant material option for any individual coating operation, for any group of coating operations, or for all the coating operations in Table #1. Initial compliance using the compliant material option is demonstrated if the coating operation or group of coating operations uses no coating with an organic hazardous air pollutant content that exceeds the emission limit in permit condition 6.3, and no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutants. As part of the notification of compliance status required in permit condition 5.9, the owner or operator must identify the coating operation(s) for which the compliant material option was used and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period. If the owner or operator chooses to use the compliant material option for any coating operation or group of coating operations for the initial compliance demonstration, the owner or operator must comply with all the permit conditions in this chapter. The owner or operator must use the procedures in this chapter on each coating, thinner and/or other additive, and cleaning material in the condition it is in when it is received from its manufacturer or supplier and prior to any alteration.

## **8.2 Determine mass fraction of organic hazardous air pollutant for each material used.**

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(a), the owner or operator shall determine the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during the compliance period using one of the following procedures:

1. The owner or operator may test the material in accordance with 40 CFR Part 63, Appendix A, Method 311 to determine the mass fraction of organic hazardous air pollutant. The organic hazardous air pollutant content must be calculated according to the following criteria:
  - a. Include each organic hazardous air pollutant measured to be present at greater than or equal to 0.1 percent by mass for Occupational Safety and Health Administration (OSHA) defined carcinogens as specified in 29 CFR § 1910.1200(d)(4) and greater than or equal to 1.0 percent by mass for other organic hazardous air pollutant compounds. Express the mass fraction of each organic hazardous air pollutant as a value truncated to four places after the decimal point; and
  - b. Calculate the total mass fraction of organic hazardous air pollutant in the test material by adding up the individual organic hazardous air pollutant mass fractions and truncating the result to three places after the decimal point;
2. The owner or operator may use 40 CFR Part 60, Appendix A, Method 24, to determine the mass fraction of nonaqueous volatile matter and use that value as a substitute for the mass fraction of organic hazardous air pollutant. For reactive adhesives in which some of the hazardous air pollutants react to form solids and are not emitted to the atmosphere, the owner or operator may use the alternative method in 40 CFR Part 63, Subpart PPPP, Appendix A, rather than Method 24. Reactive adhesive means adhesive systems composed, in part, of volatile monomers that react during the adhesive curing reaction, and, as a result, do not evolve from the film during use. These volatile components instead become integral parts of the adhesive through chemical reaction. At least 70 percent of the liquid components of the system, excluding water, react during the process. The volatile fraction that is emitted, as measured by the alternative method, may be used as a substitute for the mass fraction of organic hazardous air pollutant;
3. The owner or operator may use an alternative test method for determining the mass fraction of organic hazardous air pollutant after obtaining approval from the Administrator of EPA. The procedure in 40 CFR § 63.7(f) must be used to submit an alternative test method for approval;
4. The owner or operator may use other information than that generated by the methods in (1) through (3) of this permit condition, such as manufacturer's formulation data, if it represents each organic hazardous air pollutant that is present at 0.1 percent by mass or more for OSHA-defined carcinogens as specified in 29 CFR § 1910.1200(d)(4) and at 1.0 percent by mass or more for other compounds. For reactive adhesives in which some of the hazardous air pollutants react to form solids and are not emitted to the atmosphere, the owner or operator may rely on manufacturer's data that expressly states the organic hazardous air

pollutant or volatile matter mass fraction emitted. If there is a disagreement between such information and results of a test conducted according to the methods in (1) through (3) of this permit condition, then the test method results will take precedence unless, after consultation the owner or operator can demonstrate to the satisfaction of the Secretary that the formulation data are correct; or

5. Solvent blends may be listed as single components for some materials in data provided by manufacturers or suppliers. Solvent blends may contain organic hazardous air pollutants which must be counted toward the total organic hazardous air pollutant mass fraction of the materials. If test data and manufacturer's data for the organic hazardous air pollutant content for solvent blends are not available, the owner or operator may use the default values for the mass fraction organic hazardous air pollutant in solvent blends in Table #2 or #3. Table #3 may be used only if the solvent blends do not match any of the solvent blends given in Table #2 and the only information available is whether the blend is aliphatic or aromatic. If the results of testing using 40 CFR Part 63, Appendix A, Method 311 indicate higher values than those listed on Table #2 or #3, the Method 311 results will take precedence unless, after consultation, the owner or operator can demonstrate to the satisfaction of the Secretary that the formulation data are correct.

**Table #2**  
**Default Organic HAP Mass Fraction for Solvents and Solvent Blends**

<b>Solvent/Solvent Blend</b>	<b>CAS. No.</b>	<b>Average Organic HAP Mass Fraction</b>	<b>Typical Organic HAP Percent by Mass</b>
Toluene	108-88-3	1.0	Toluene
Xylene(s)	1330-20-7	1.0	Xylenes, ethylbenzene
Hexane	110-54-3	0.5	n-hexane
n-Hexane	110-54-3	1.0	n-hexane
Ethylbenzene	100-41-4	1.0	Ethylbenzene
Aliphatic 140	--	0	None
Aromatic 100	--	0.02	1% xylene, 1% cumene
Aromatic 150	--	0.09	Naphthalene
Aromatic naphtha	64742-95-6	0.02	1% xylene, 1% cumene
Aromatic solvent	64742-94-5	0.1	Naphthalene
Exempt mineral spirits	8032-32-4	0	None
Ligroines (VM&P)	8032-32-4	0	None
Lactol spirits	64742-89-6	0.15	Toluene
Low aromatic white spirits	64742-82-1	0	None
Mineral spirits	64742-88-7	0.01	Xylenes
Hydrotreated naphtha	64742-48-9	0	None
Hydrotreated light distillate	64742-47-8	0.001	Toluene
Stoddard solvent	8052-41-3	0.01	Xylenes
Super high-flash naphtha	64742-95-6	0.05	Xylenes
Varsol ® solvent	8052-49-3	0.01	0.5% xylenes, 0.5% ethylbenzene
VM&P naphtha	64742-89-8	0.06	3% toluene, 3% xylene
Petroleum distillate mixture	68477-31-6	0.08	4% naphthalene, 4% biphenyl

**Table #3**  
**Default Organic HAP Mass Fraction for Petroleum Solvent Groups**

Solvent Type	Average Organic HAP Mass Fraction	Typical Organic HAP Percent by Mass
Aliphatic <sup>1</sup>	0.03	1% xylene, 1% toluene, and 1% ethylbenzene
Aromatic <sup>2</sup>	0.06	4% xylene, 1% toluene, and 1% ethylbenzene

<sup>1</sup> – Mineral spirits 135, mineral spirits 150 EC, naphtha, mixed hydrocarbon, aliphatic hydrocarbon, aliphatic naphtha, naphthol spirits, petroleum spirits, petroleum oil, petroleum naphtha, solvent naphtha, and solvent blend; and

<sup>2</sup> – Medium-flash naphtha, high-flash naphtha, aromatic naphtha, light aromatic naphtha, light aromatic hydrocarbons, aromatic hydrocarbons, and light aromatic solvent.

**8.3 Determine the volume fraction of coating solids for each coating.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(b), the owner or operator shall determine the volume fraction of coating solids (liters (gallons) of coating solids per liter (gallon) of coating) for each coating used during the compliance period by a test, by information provided by the supplier or manufacturer of the material, or by calculation as specified in one of the following methods:

1. The owner or operator may use ASTM Method D2697-86 (Reapproved 1998) “Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings” or ASTM Method D6093-97 (Reapproved 2003) “Standard Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer,” to determine the volume fraction of coating solids for each coating. Divide the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids. If the test results obtained using ASTM Method D2697-86 or ASTM Method D6093-97 do not agree with the information obtained from the supplier or manufacturer of the material or the calculation in Equation 8-1, the test results will take precedence unless, after consultation, the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct;
2. The owner or operator may use an alternative test method for determining the solids content of each coating after obtaining the approval of the Administrator of EPA. The procedure in 40 CFR § 63.7(f) must be used to submit an alternative test method for approval;
3. The owner or operator may obtain the volume fraction of coating solids for each coating from the supplier or manufacturer of the material; or
4. The owner or operator may use Equation 8-1 to calculate the volume fraction of coating solids.

***Equation 8-1 – Calculate the volume fraction coating solids***

$$V_s = 1 - \frac{m_{\text{volatiles}}}{D_{\text{avg}}}$$

Where:

- $V_s$  = Volume fraction of coating solids, in liters (gallons) coating solids per liter (gallon) coating;
- $m_{\text{volatiles}}$  = Total volatile matter content of the coating, including hazardous air pollutants, volatile organic compounds (VOC), water, and exempt compounds, determined according to 40 CFR Part 60, Appendix A, Method 24, in grams volatile matter per liter coating; and
- $D_{\text{avg}}$  = Average density of volatile matter in the coating, in grams volatile matter per liter volatile matter, determined from test results using ASTM Method D1475-98, "Standard Test Method for Density of Liquid Coatings, Inks, and Related Products," information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If there is disagreement between ASTM Method D1475-98 test results and other information sources, the test results will take precedence unless, after consultation, the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct.

**8.4 Determine the density of each coating.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(c), the owner or operator shall determine the density of each coating used during the compliance period from test results using ASTM Method D1475-98, "Standard Test Method for Density of Liquid Coatings, Inks, and Related Products," information from the supplier or manufacturer of the material, or specific gravity data for pure chemicals. If there is disagreement between ASTM D1475-98 test results and the supplier's or manufacturer's information, the test results take precedence unless, after consultation the owner or operator demonstrates to Secretary that the formulation data are correct.

**8.5 Determine the organic hazardous air pollutant content of each coating.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(d), the owner or operator shall calculate the organic hazardous air pollutant content, in kilogram (pound) of organic hazardous air pollutant emitted per liter (gallon) coating solids used, of each coating used during the compliance period using Equation 8-2.

***Equation 8-2 – Calculate the organic hazardous air pollutant content of each coating***

$$H_c = \frac{(D_c)(W_c)}{V_s}$$

Where:

- $H_c$  = Organic hazardous air pollutant content of the coating, in kilograms (pounds) organic hazardous air pollutant emitted per liter (gallon) coating solids used;
- $D_c$  = Density of coating, in kilograms (pounds) coating per liter (gallon) coating, determined according to the procedure in permit condition 8.4;
- $W_c$  = Mass fraction of organic hazardous air pollutant in the coating, in kilograms organic hazardous air pollutant per kilogram coating, determined according to the procedure in permit condition 8.2.
- $V_s$  = Volume fraction of coating solids, in liters (gallons) coating solids per liter (gallon) coating, determined according to the procedure in permit condition 8.3.

## **9.0 DEMONSTRATING CONTINUOUS COMPLIANCE – COMPLIANT MATERIALS OPTION**

**9.1 Demonstrating continuous compliance using the compliant materials option.** In accordance with 40 CFR § 63.3942, to demonstrate continuous compliance for each compliance period using the compliant materials option, the owner or operator shall meet the following requirements:

1. Use no coating for which the organic hazardous air pollutant content as determined in accordance with Equation 8-2 exceeds the emission limit in permit conditions 6.3, and use no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutant as determined in accordance with the procedure in permit condition 8.2. A compliance period consists of 12 months. Each month after the end of the initial compliance period is the end of a compliance period consisting of that month and the preceding 11 months;
2. The use of any coating that exceeds the emission limits in permit condition 6.3, and/or the use of any thinner and/or additive or cleaning material that contains organic hazardous air pollutants is a deviation from the emission limit for the compliance period that must be reported in the initial notification required in permit condition 5.9 and in the semiannual compliance report specified in permit condition 5.7;
3. The owner or operator must identify the coating operation(s) for which the compliant materials option was used in each semiannual report. If there were no deviations from the emission limitations, include a statement that the coating operations(s) was (were) in compliance with the emission limitations during the reporting period because no coating was used for which the organic hazardous air pollutant exceeded the emission limits in permit condition 6.3, and no thinner and/or other additive, or cleaning material was used that contained organic hazardous air pollutants as determined in accordance with the procedure in permit condition 8.2; and
4. The owner or operator must maintain the records specified in permit condition 5.5.

## **10.0 INITIAL COMPLIANCE DEMONSTRATION – EMISSION RATE WITHOUT ADD-ON CONTROLS OPTION**

**10.1 Demonstrating compliance with the organic hazardous air pollutant emission limit using the emission rate without add-on controls option.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951, the owner or operator may choose to use the emission rate without add-on controls option for any individual coating operation, for any group of coating operations in the affected source, or for all the coating operations in Table #1. Initial compliance using the emission rate without add-on controls option is demonstrated if the coating operation or group of coating operations meets the organic hazardous air pollutant emission rate in permit condition 6.3. As part of the notification of compliance status required in permit condition 5.9, the owner or operator must identify the coating operation(s) for which the emission rate without add-on controls option was used and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period. If the owner or operator chooses to use the emission rate without add-on controls option for any coating operation or group of coating operations for the initial compliance demonstration, the owner or operator must comply with all the permit conditions in this chapter. When calculating the organic hazardous air pollutant emission rate according to Chapter 10.0, the owner or operator shall not include any coatings, thinners and/or other additives, or cleaning materials used on coating operations for which the owner or operator used the compliant material option for demonstrating compliance.

**10.2 Determine the mass fraction of organic hazardous air pollutant for each material.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(a), the owner or operator shall determine the mass fraction of organic hazardous air pollutant for each coating, thinner and/or other additive, and cleaning material used during each month in accordance with the procedure in permit condition 8.2.

**10.3 Determine the volume fraction of coating solids.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(b), the owner or operator shall determine the volume fraction of coating solids (liters (gallons) of coating solids per liter (gallon) of coating) for each coating used during each month in accordance with the procedure in permit condition 8.3.

**10.4 Determine the density of each material.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(c), the owner or operator shall determine the density of each liquid coating, thinner and/or other additive, and cleaning material used during each month from test results using ASTM Method D1475-98, “Standard Test Method for Density of Liquid Coating, Inks, and Related Products,” information from the supplier or manufacturer of the material, or reference sources providing density or specific gravity data for pure materials. If powder coatings are included in the compliance determination, determine the density of powder coatings using ASTM Method D5965-02, “Standard Test Methods for Specific Gravity of Coating Powders,” or information from the supplier. If there is disagreement between ASTM

Method D1475-98 or ASTM Method D5965-02 test results and other such information sources, the test results will take precedence, unless after consultation the owner or operator demonstrates to the satisfaction of the Secretary that the formulation data are correct. If materials are purchased or consumption is monitored by weight instead of volume, the density of each material used does not have to be determined. Instead, the material weight may be used in place of the combined terms for density and volume in Equations 10-2, 10-3, 10-4, and 10-5.

**10.5 Determine the volume of each material used.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(d), the owner or operator shall determine the volume (liters) of each coating, thinner and/or other additive, and cleaning material used during each month by measurement or usage records. If materials are purchased or consumption is monitored by weight instead of volume, the volume of each material used does not have to be determined. Instead, the material weight may be used in place of the combined terms for density and volume in Equations 10-2, 10-3, and 10-4.

**10.6 Calculate the mass of organic hazardous air pollutant emissions.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(e), the mass of organic hazardous air pollutant emissions is the combined mass of organic hazardous air pollutants contained in all coatings, thinners and/or other additives, and cleaning materials used during each month minus the organic hazardous air pollutants in certain waste materials. The owner or operator shall calculate the mass of organic hazardous air pollutant emissions using Equation 10-1.

***Equation 10-1 – Calculate the mass of organic hazardous air pollutant emissions***

$$H_e = A + B + C - R_w$$

Where

- $H_e$  = Total mass of organic hazardous air pollutant emissions during the month, in kilograms;
- A = Total mass of organic hazardous air pollutant in the coatings used during the month, in kilograms, as calculated using Equation 10-2;
- B = Total mass of organic hazardous air pollutant in the thinners and/or other additives used during the month, in kilograms, as calculated using Equation 10-3;
- C = Total mass of organic hazardous air pollutant in the cleaning materials used during the month, in kilograms, as calculated using Equation 10-4; and
- $R_w$  = Total mass of organic hazardous air pollutant in waste materials sent or designated for shipment to a hazardous waste treatment, storage, and disposal facility for treatment or disposal during the month, in kilograms, determined according to the procedure in permit condition 10.7.

***Equation 10-2 – Calculate total mass of organic hazardous air pollutant in coatings used during the month***

$$A = \sum_{i=1}^m (Vol_{c,i})(D_{c,i})(W_{c,i})$$

Where:

- A = Total mass of organic hazardous air pollutant in the coatings used during the month, in kilograms;
- Vol<sub>c,i</sub> = Total volume of coating, i, used during the month, in liters;
- D<sub>c,i</sub> = Density of coating, i, in kilograms coating per liter coating;
- W<sub>c,i</sub> = Mass fraction of organic hazardous air pollutant in coating, i, in kilogram organic hazardous air pollutant per kilogram coating. For reactive adhesives, determine the mass fraction of organic hazardous air pollutant emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A; and
- m = Number of different coatings used during the month.

***Equation 10-3 – Calculate the total mass of organic hazardous air pollutants in the thinners and/or other additives used during the month***

$$B = \sum_{j=1}^n (Vol_{t,j}) (D_{t,j}) (W_{t,j})$$

Where:

- B = Total mass of organic hazardous air pollutant in the thinners and/or other additives used during the month, in kilograms;
- Vol<sub>t,j</sub> = Total volume of thinner and/or other additive, j, used during the month, in liters;
- D<sub>t,j</sub> = Density of thinner and/or other additive, j, in kilograms per liter;
- W<sub>t,j</sub> = Mass fraction of organic hazardous air pollutant in thinner and/or other additive, j, in kilograms organic hazardous air pollutant per kilogram thinner and/or other additive. For reactive adhesives, determine the mass fraction of organic hazardous air pollutant emitted according to the method in 40 CFR Part 63, Subpart PPPP, Appendix A; and
- n = Number of different thinners and/or other additives used during the month.

***Equation 10-4 – Calculate the total mass of organic hazardous air pollutants in the cleaning materials used during the month***

$$C = \sum_{k=1}^p (Vol_{s,k}) (D_{s,k}) (W_{s,k})$$

Where:

- C = Total mass of organic hazardous air pollutant in the cleaning materials used during the month, in kilograms;
- Vol<sub>s,k</sub> = Total volume of cleaning material, k, used during the month, in liters;
- D<sub>s,k</sub> = Density of cleaning material, k, in kilograms per liter;
- W<sub>s,k</sub> = Mass fraction of organic hazardous air pollutant in cleaning material, k, in kilograms organic hazardous air pollutant per kilogram material; and
- p = Number of different cleaning materials used during the month.

**10.7 Determine the mass of organic hazardous air pollutant in waste material.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(e)(4), if the owner or operator chooses to account for the mass of organic hazardous air pollutants contained in waste materials sent or designated for shipment to a hazardous waste treatment, storage, and disposal facility in Equation 10-1, the owner or operator must determine the mass using the following procedure:

1. Include only waste materials in the determination that are generated by the coating operations identified in Table #1 for which Equation 10-1 is used to calculate the mass of organic hazardous air pollutant emissions and that will be treated or disposed of by a facility that is regulated as a treatment, storage, and disposal facility under 40 CFR Part 262, 264, 265, or 266. The treatment, storage, and disposal facility may be either off-site or on-site. Organic hazardous air pollutants contained in wastewater may not be included;
2. Determine either the amount of the waste materials sent to a treatment, storage, and disposal facility during the month or the amount collected and stored during the month and designated for future transport to a treatment, storage, and disposal facility. Any waste materials sent to a treatment, storage, and disposal facility during a month that have already been included in the amount collected and stored during that month or a previous month should not be included in the determination;
3. Determine the total mass of organic hazardous air pollutants contained in the waste materials specified in paragraph 2 of this permit condition; and
4. Document the methodology used to determine the amount of waste materials and the total mass of organic hazardous air pollutants they contain, in accordance with permit condition 5.6. If the waste manifests include this information, they may be used as part of the documentation of the amount of waste materials and the mass of organic hazardous air pollutants contained in them.

**10.8 Determine the total volume of coating solids used.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(f), the owner or operator shall calculate the total volume of coating solids used, in liters, which is the combined volume of coating solids for all the coatings used during each month, using Equation 10-5.

***Equation 10-5 – Calculate the total volume of coating solids used during the month***

$$V_{st} = \sum_{i=1}^m (Vol_{c,i})(V_{s,i})$$

Where:

- $V_{st}$  = Total volume of coating solids used during the month, in liters;
- $Vol_{c,i}$  = Total volume of coating, i, used during the month, in liters;

- $V_{s,i}$  = Volume fraction of coating solids for coating, i, in liter solids per liter coating, determined in accordance with permit condition 8.3; and
- $m$  = Number of coatings used during the month.

**10.9 Determine the organic hazardous air pollutant emission rate.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3951(g), the owner or operator shall calculate the organic hazardous air pollutant emission rate for the compliance period, in kilograms (pounds) organic hazardous air pollutant emitted per liter (gallon) coating solids used, using Equation 10-6.

*Equation 10-6 – Calculate the average organic hazardous emission rate for the compliance period*

$$H_{yr} = \frac{\sum_{y=1}^n H_e}{\sum_{y=1}^n V_{st}}$$

Where:

- $H_{yr}$  = Average organic hazardous air pollutant emission rate for the compliance period, in kilograms organic hazardous air pollutant emitted per liter coating solids used;
- $H_e$  = Total mass of organic hazardous air pollutant emissions from all materials used during month, y, in kilograms, as calculated using Equation 10-1;
- $V_{st}$  = Total volume of coating solids used during month, y, in liters, as calculated using Equation 10-5;
- $y$  = Identifier for months; and
- $n$  = Number of full or partial months in the compliance period (for the initial compliance period,  $n$  equals 12 if the compliance date falls on the first day of a month; otherwise  $n$  equals 13; for all following compliance periods,  $n$  equals 12).

## **11.0 DEMONSTRATING CONTINUOUS COMPLIANCE – EMISSION RATE WITHOUT ADD-ON CONTROLS OPTION**

**11.1 Demonstrating continuous compliance using the emission rate without add-on controls option.** In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3952, if the owner or operator demonstrates compliance using the emission rate without add-on controls option, the owner or operator shall demonstrate continuous compliance with the emission limits in permit condition 6.3 as follows:

1. Determine the organic hazardous air pollutant emission rate for each compliance period in accordance with the procedures in Chapter 10.0. A compliance period consists of 12 months. Each month after the end of the initial compliance period is the end of a compliance period consisting of that month and the preceding 11 months. The owner or operator must perform the calculations in Chapter 10.0 on a monthly basis using data from the previous 12 months of operation;
2. If the organic hazardous air pollutant emission rate for any 12-month compliance period exceeds the emission limits in permit condition 6.3, this is a deviation from the emission limit for that compliance period that must be reported in the initial notification required in permit condition 5.9 and in the semiannual compliance report specified in permit condition 5.7;
3. In each semiannual report, identify the coating operation(s) for which the emission rate without add-on controls option was used. If there were no deviations from the emission limitations, include a statement that the coating operations(s) was (were) in compliance with the emission limitations during the reporting period because the organic hazardous air pollutant emission rate for each compliance period was less than or equal to the emission limits in permit condition 6.3 as determined according to procedure in Chapter 10.0; and
4. The owner or operator must maintain the records specified in permit conditions 5.5 and 5.6.

## **12.0 PREVENTION OF SIGNIFICANT DETERIORATION EXEMPTION**

**12.1 Prevention of significant deterioration review exemption.** Any relaxation of the limit in permit condition 6.4 that increases applicable emissions equal to or greater than 238 tons of volatile organic compounds per 12-month rolling period may require a full prevention of significant deterioration review as though construction had not commenced on the source.