

Permit #: 28.9906-01
Effective Date: February 29, 2016
Expiration Date: February 28, 2021



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

A handwritten signature in black ink, appearing to read 'S. Pirner', is positioned above the printed name.

**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:

1. A. Owner

1. Company Name and Mailing Address

Midwest Railcar Repair, Inc.
25965 482nd Avenue
Brandon, SD 57005

2. Actual Source Location if Different from Above

25965 482nd Avenue
Brandon, SD 57005

3. Permit Contact

David Smook, President
(605) 582-8300

4. Facility Contact

Gary Pekas, Compliance Coordinator
(605) 582-8300

5. Responsible Official

Any Corporate Officer
(605) 582-8300

B. Permit Revisions or Modifications

Not Applicable

C. Type of Operation

Railcar repair and painting

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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 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application received March 3, 2014, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment shall be operated at all times in accordance with the manufacturer's specification and in a manner that achieves compliance with the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware 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
#2	Coating line ¹ – 1999 US Filter System paint booth using airless spray guns	Not applicable	Filter
#3	2008 Hurst A 4-Pass Wetback Hot Water/Steam Boiler, Model Series 500 150 HP, fired by natural gas	6.3 million Btus per hour heat input	Not applicable

¹ – 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 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, upon presentation of credentials, 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 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 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 in violation of this permit. Credible evidence may consist of the following:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred:
 - a. A monitoring method approved 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 paragraph (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 Amendments and Modifications

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 cannot be implemented until the Secretary takes final action on the proposed change or the owner or operator was issued an air quality construction permit. 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 the proposed change is an administrative permit amendment. As provided in ARSD 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;
3. Requires more frequent monitoring or reporting;
4. The ownership or operational control changes and the Secretary determines 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 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 the proposed change is a permit modification. As provided in ARSD 74:36:05:35, 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 recordkeeping 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 recordkeeping 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 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. In accordance with ARSD 74:36:05:41, the Secretary shall notify the owner or operator at least 30 days before reopening this permit. The 30-day period may be less in the case of an emergency.

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 describing 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 resulting 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 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

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 to operate 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 Recordkeeping and Reporting

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

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 1-1. 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; and

- e. Signature of person performing maintenance;
2. 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 the permitted equipment was at the time being properly operated.

5.5 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;
3. The amount of natural gas burned in Unit #3; and
4. The annual number of hours Unit #3 was operated.

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.

5.6 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, recordkeeping, 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.

5.7 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) 773-4068.

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. A description of the permit violation and its cause(s);
2. The duration of the permit violation, including exact dates and times; and
3. The 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 1-1, unless otherwise specified in this permit. 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 opacity 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 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 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

Unit	Description	Emission Limit
#3	Boiler	0.6 pounds per million BTU heat input

6.4 Sulfur dioxide limits

In accordance with ARSD 74:36:06:02(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table 6-2 for the appropriate permitted unit, operations, and process.

Table 6-2 – Sulfur Dioxide Emission Limit

Unit	Description	Emission Limit
#3	Boiler	3.0 pounds per million Btu heat input

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

6.5 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 owner or operator, 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 74:36:08:03, 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 a relevant standard. 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.

6.7 Minimizing emissions

In accordance with ARSD 74:36:08:03, as referenced to 40 CFR § 63.6(e)(1)(i), the owner or operator shall at all times, including periods of startup, shutdown, and malfunction, operate and maintain any permitted unit, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires the owner or operator to reduce emissions from the permitted unit 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 (including a startup, shutdown, and malfunction plan, if required), review of operation and maintenance records, and inspection of the operation.

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 outlining 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 represented in the same terminology as the permit limits;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test necessary for demonstrating compliance with the permit limits, 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 Surface Coating of Miscellaneous Metal Parts and Products

8.1 Coverage

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3882(b), the operations covered in this chapter consist of the following used for surface coating of miscellaneous metal parts and products:

1. All coating operations;
2. All storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed;
3. All manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and cleaning materials; and
4. All storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

Coating operation means 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). A single coating operation may include any combination of these types of equipment, but always includes at least the point at which a given quantity of coating or cleaning material is applied to a given part and all subsequent points in the affected source where organic hazardous air pollutants are emitted from the specific quantity of coating or cleaning material on the specific part. There may be multiple coating operations in an

affected source. Coating application with handheld, non-refillable aerosol containers, touch-up markers, or marking pens is not a coating operation.

8.2 Compliance date

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3883(b), the owner or operator shall demonstrate compliance with this chapter after January 2, 2007. The initial compliance period begins on January 2, 2007 and ends on January 2, 2008.

A. Emission Limits

8.3 Emission limits

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3890(b), the owner or operator shall limit organic hazardous air pollutant emissions to the atmosphere from the operations specified in permit condition 8.1 to the following applicable emissions limits, except as specified in permit condition 8.4:

1. For each general use coating, limit organic hazardous air pollutant emissions 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;
2. For each high performance coating, limit organic hazardous air pollutant emissions to no more than 3.3 kilograms (27.5 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period;
3. For each magnet wire coating, limit organic hazardous air pollutant emissions to no more than 0.12 kilograms (1.0 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period;
4. For each rubber-to-metal coating, limit organic hazardous air pollutant emissions to no more than 4.5 kilograms (37.7 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period; and
5. For each extreme performance fluoropolymer coating, limit organic hazardous air pollutant emissions to no more than 1.5 kilograms (12.4 pounds) organic hazardous air pollutant per liter (gallon) coating solids used during each 12-month compliance period.

The owner or operator shall determine compliance according to the requirements in Chapter 8.0.

8.4 Alternative emission limit options

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3890(c), if the owner's or operator's surface coating operations meet the applicability criteria of more than one of the paragraphs in permit condition 8.3, the owner or operator may comply using one of the following predominant activity alternatives:

1. If the general use or magnet wire surface coating operations subject to only one of the emission limits specified in paragraph (1) or (3) of permit condition 8.3 accounts for 90 percent or more of the surface coating activity (i.e., it is the predominant activity),

- then compliance with that one emission limitations in permit condition 8.3 for all surface coating operations constitutes compliance with the other applicable emission limits in permit condition 8.3. The owner or operator must use liters (gallons) of solids used as a measure of relative surface coating activity over a representative period of operation. The owner or operator may estimate the relative volume of coating solids used from parameters other than coating consumption and volume solids content (i.e., design specifications for the parts or products coated and the number of items produced). The determination of predominant activity must accurately reflect current and projected coating operations and must be verifiable through appropriate documentation. The use of parameters other than coating consumption and volume solids content must be approved by the Secretary. The owner or operator may use data for any reasonable time period of at least 1 year in determining the relative amount of coating activity, as long as it represents the way the coating operations will continue to operate in the future and are approved by the Secretary. The owner or operator must determine the predominant activity and submit the results of that determination with the initial notification required by permit condition 8.10(b). Additionally, the owner or operator must determine the predominant activity annually and include the determination in the next semiannual compliance report.
2. The owner or operator may calculate and comply with a facility-specific emission limit as described below. If the owner or operator elects to comply using the facility-specific emission limit alternative, then compliance with the facility-specific emission limit and the emission limitations in permit condition 8.3 for all surface coating operations constitutes compliance with permit condition 8.3. In calculating a facility-specific emission limit, the owner or operator must include coating activities that meet the applicability criteria of the other subcategories and constitute more than 1 percent of total coating activities.
 - a. The owner or operator is required to calculate the facility-specific emission limit when submitting the notification of compliance status required in permit condition 8.10(c), and on a monthly basis afterward using the coating data for the relevant 12-month compliance period; and
 - b. Use Equation 8-1 to calculate the facility-specific emission limit for the surface coating operations for each 12-month compliance period.

Equation 8-1

$$\text{Facility – Specific Emission Limit} = \frac{\sum_{i=1}^n (\text{Limit}_i)(\text{Solids}_i)}{\sum_{i=1}^n (\text{Solids}_i)}$$

Where:

- Facility-specific emission limit = Facility-specific emission limit for each 12-month compliance period, in kilograms (pounds) organic hazardous air pollutant per kilograms (pounds) coating solids used;
- Limit_i = The emission limit applicable to coating operation, i , included in the facility-specific emission limit, converted to kilograms (pounds) organic hazardous air pollutant per kilograms (pounds) coating solids used, if the emission limit is not already in those units. All emission limits included in the facility-specific emission limit must be in the same units;
- Solids_i = The liters (gallons) of solids used in coating operation, i , in the 12-month compliance period that is subject to emission limit, i . The owner or operator may estimate the volume of coating solids used from parameters other than coating consumption and volume solids content (i.e., design specifications for the parts or products coated and the number of items produced). The use of parameters other than coating consumption and volume solids content must be approved by the Secretary; and
- n = The number of different coating operations included in the facility-specific emission limit.

8.5 Compliance options for meeting emission limits

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3891, the owner or operator must include all coatings, thinners and/or other additives, and cleaning materials used in the affected source when determining whether the organic hazardous air pollutant emission rate is equal to or less than the applicable emission limit in permit condition 8.3. To make this determination, the owner or operator must use at least one of the three following compliance options:

1. **Compliant material option:** Demonstrate the organic hazardous air pollutant content of each coating used in the coating operation(s) is less than or equal to the applicable emission limit in permit condition 8.3 and each thinner and/or other additive and cleaning material used contains no organic hazardous air pollutant. The owner or operator must meet all the requirements of permit condition 8.14, 8.15, and 8.16 to demonstrate compliance with the applicable emission limit using this option;
2. **Emission rate without add-on controls option:** Demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s), the organic hazardous air pollutant emission rate for the coating operation(s) is less than or equal to the applicable emission limit in permit condition 8.3, calculated as a rolling 12-month emission rate and determined on a monthly basis. The owner or operator must meet all the requirements of permit condition 8.17, 8. 18, and 8.19 to demonstrate compliance with the emission limit using this option; and/or
3. **Emission rate with add-on controls option:** Demonstrate that, based on the coatings, thinners and/or other additives, and cleaning materials used in the coating operation(s),

and the emissions reductions achieved by emission capture systems and add-on controls, the organic hazardous air pollutant emission rate for the coating operation(s) is less than or equal to the applicable emission limit in permit condition 8.3, calculated as a rolling 12-month emission rate and determined on a monthly basis. If the owner or operator use this compliance option, the owner or operator must also demonstrate that all emission capture systems and add-on control devices for the coating operation(s) meet the operating limits required in permit condition 8.6, except for solvent recovery systems for which the owner or operator conduct liquid-liquid material balances according to permit condition 8.21(10), and the owner or operator meets the work practice standards required in permit condition 8.7. The owner or operator must meet all the requirements of permit condition 8.20 through 8.27 to demonstrate compliance with the emission limits, operating limits, and work practice standards using this option.

The owner or operator may apply any of the compliance options to an individual coating operation, or to multiple coating operations as a group, or to the entire coating operations. The owner or operator may use different compliance options for different coating operations, or at different times on the same coating operation. The owner or operator may employ different compliance options when different coatings are applied to the same part, or when the same coating is applied to different parts. However, the owner or operator may not use different compliance options at the same time on the same coating operation. If the owner or operator switch between compliance options for any coating operation or group of coating operations, the owner or operator must document this switch as required by permit condition 8.12(c), and the owner or operator must report it in the next semiannual compliance report required in permit condition 8.11.

8.6 Operating limits for complying with emission rate with add-on controls option

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3892, for any controlled coating operation(s) on which the owner or operator use the emission rate with add-on controls option, except those for which the owner or operator use a solvent recovery system and conduct a liquid-liquid material balance according to permit condition 8.21(10), the owner or operator must meet the operating limits specified in Table 8-1. The owner or operator must establish the operating limits during the performance test according to the requirements in permit condition 8.26. The owner or operator must meet the operating limits at all times after the owner or operator establishes them. If the owner or operator use an add-on control device other than those listed in Table 8-1, or wish to monitor an alternative parameter and comply with a different operating limit, the owner or operator must apply to the Secretary for approval of alternative monitoring under §63.8(f).

Table 8-1: Operating Limits if Using the Emission Rate With Add-On Controls Option

For the following device . . .	The owner or operator must meet the following operating limit . . .	And the owner or operator must demonstrate continuous compliance with the operating limit by . . .
1. Thermal oxidizer	a. The average combustion	i. Collecting the combustion temperature

For the following device . . .	The owner or operator must meet the following operating limit . . .	And the owner or operator must demonstrate continuous compliance with the operating limit by . . .
	temperature in any 3-hour period must not fall below the combustion temperature limit established according to permit condition 8.26(1)	data according to permit condition 8.27(3); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average combustion temperature at or above the temperature limit.
2. Catalytic oxidizer	a. The average temperature measured just before the catalyst bed in any 3-hour period must not fall below the limit established according to permit condition 8.26(2) (for magnet wire coating machines, temperature can be monitored before or after the catalyst bed); and either	i. Collecting the temperature data according to permit condition 8.27(c); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature before (or for magnet wire coating machines after) the catalyst bed at or above the temperature limit.
	b. Ensure the average temperature difference across the catalyst bed in any 3-hour period does not fall below the temperature difference limit established according to permit condition 8.26(b)(2); or	i. Collecting the temperature data according to permit condition 8.27(3); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature difference at or above the temperature difference limit.
	c. Develop and implement an inspection and maintenance plan according to permit condition 8.26(2)(d) or for magnet wire coating machines according to section 3.0 of appendix A to this subpart	i. Maintaining an up-to-date inspection and maintenance plan, records of annual catalyst activity checks, records of monthly inspections of the oxidizer system, and records of the annual internal inspections of the catalyst bed. If a problem is discovered during a monthly or annual inspection required by permit condition 8.26(2)(d) or for magnet wire coating machines by section 3.0 of appendix A to this subpart, the owner or operator must take corrective action as soon as practicable consistent with the manufacturer's recommendations.
3. Regenerative	a. The total regeneration	i. Measuring the total regeneration

For the following device . . .	The owner or operator must meet the following operating limit . . .	And the owner or operator must demonstrate continuous compliance with the operating limit by . . .
carbon adsorber	desorbing gas (i.e., steam or nitrogen) mass flow for each carbon bed regeneration cycle must not fall below the total regeneration desorbing gas mass flow limit established according to permit condition 8.26(3); and	desorbing gas (i.e., steam or nitrogen) mass flow for each regeneration cycle according to permit condition 8.27(4); and ii. Maintaining the total regeneration desorbing gas mass flow at or above the mass flow limit.
	b. The temperature of the carbon bed, after completing each regeneration and any cooling cycle, must not exceed the carbon bed temperature limit established according to permit condition 8.26(3).	i. Measuring the temperature of the carbon bed after completing each regeneration and any cooling cycle according to permit condition 8.27(4); and ii. Operating the carbon beds such that each carbon bed is not returned to service until completing each regeneration and any cooling cycle until the recorded temperature of the carbon bed is at or below the temperature limit.
4. Condenser	a. The average condenser outlet (product side) gas temperature in any 3-hour period must not exceed the temperature limit established according to permit condition 8.26(4).	i. Collecting the condenser outlet (product side) gas temperature according to permit condition 8.27(5); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average gas temperature at the outlet at or below the temperature limit.
5. Concentrators, including zeolite wheels and rotary carbon adsorbers	a. The average gas temperature of the desorption concentrate stream in any 3-hour period must not fall below the limit established according to permit condition 8.26(5); and	i. Collecting the temperature data according to permit condition 8.27(6); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average temperature at or above the temperature limit.
	b. The average pressure drop of the dilute stream across the concentrator in any 3-hour period must not fall below the limit established according to permit	i. Collecting the pressure drop data according to Permit Condition 8.27(6); ii. Reducing the pressure drop data to 3-hour block averages; and iii. Maintaining the 3-hour average

For the following device . . .	The owner or operator must meet the following operating limit . . .	And the owner or operator must demonstrate continuous compliance with the operating limit by . . .
	condition 8.26(5)	pressure drop at or above the pressure drop limit.
6. Emission capture system that is a permanent total enclosure according to §63.3965(a)	a. The direction of the air flow at all times must be into the enclosure; and either:	i. Collecting the direction of air flow, and either the facial velocity of air through all natural draft openings according to permit condition 8.27(2)(a) or the pressure drop across the enclosure according to permit condition 8.27(7)(b); and ii. Maintaining the facial velocity of air flow through all natural draft openings or the pressure drop at or above the facial velocity limit or pressure drop limit, and maintaining the direction of air flow into the enclosure at all times.
	b. The average facial velocity of air through all natural draft openings in the enclosure must be at least 200 feet per minutes; or	i. See items 6.a.i and 6.a.ii.
	c. The pressure drop across the enclosure must be at least 0.007 inch H ₂ O, as established in 40 CFR Part 51, Appendix M, Method 204.	i. See items 6.a.i and 6.a.ii.
7. Emission capture system that is not a permanent total enclosure according to §63.3965(a)	a. The average gas volumetric flow rate or duct static pressure in each duct between a capture device and add-on control device inlet in any 3-hour period must not fall below the average volumetric flow rate or duct static pressure limit established for that capture device according to permit condition 8.26(6).	i. Collecting the gas volumetric flow rate or duct static pressure for each capture device according to permit condition 8.27(7); ii. Reducing the data to 3-hour block averages; and iii. Maintaining the 3-hour average gas volumetric flow rate or duct static pressure for each capture device at or above the gas volumetric flow rate or duct static pressure limited.

8.7 Work practices for complying with emission rate with add-on controls option

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3893, the owner or operator must develop and implement a work practice plan to minimize organic hazardous air pollutant emissions from the storage, mixing, and conveying of coatings, thinners and/or other additives, and cleaning materials used in, and waste materials generated by the controlled coating operation(s). The plan must specify practices and procedures to ensure that, at a minimum, the following elements are implemented:

1. All organic hazardous air pollutant containing coatings, thinners and/or other additives, cleaning materials, and waste materials must be stored in closed containers;
2. Spills of organic hazardous air pollutant containing coatings, thinners and/or other additives, cleaning materials, and waste materials must be minimized;
3. Organic hazardous air pollutant containing coatings, thinners and/or other additives, cleaning materials, and waste materials must be conveyed from one location to another in closed containers or pipes;
4. Mixing vessels which contain organic hazardous air pollutant containing coatings and other materials must be closed except when adding to, removing, or mixing the contents; and
5. Emissions of organic hazardous air pollutant must be minimized during cleaning of storage, mixing, and conveying equipment.

The owner or operator may request permission from the Administrator of EPA for an alternative work practice standard.

B. General Compliance Requirements

8.8 General compliance requirements

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3900(a), the owner or operator must be in compliance with the emission limits in this chapter as specified below:

1. Any coating operation for which the owner or operator uses the compliant material option or the emission rate without add-on controls option, as specified in paragraph (1) and (2) of permit condition 8.5, must be in compliance with the applicable emission limit in permit condition 8.3 at all times; and
2. Any coating operation for which the owner or operator uses the emission rate with add-on controls option, as specified in paragraph (3) in permit condition 8.5, must be in compliance with the emission limits as specified below:
 - a. The coating operation must be in compliance with the applicable emission limit in permit condition 8.3 at all times except during periods of startup, shutdown, and malfunction;
 - b. The coating operation must be in compliance with the operating limits for emission capture systems and add-on control devices required by permit condition 8.6 at all times except during periods of startup, shutdown, and malfunction, and except for

- solvent recovery systems for which the owner or operator conducts liquid-liquid material balances according to permit condition 8.21; and
- c. The coating operation must be in compliance with the work practice standards in permit condition 8.7 at all times.

8.9 Minimizing emissions from coating operations

In accordance with ARSD 74:36:08:03 and 74:36:08:37, as referenced to 40 CFR §§ 63.6(e)(1)(i) and 63.3900(b), respectively, the owner or operator must at all times, including period of startup, shutdown, and malfunction, operate and maintain the coating operations, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires the owner or operator reduce emissions from the coating operations 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 (including the startup, shutdown, and malfunction plan required in permit condition 8.10, review of operation and maintenance records, and inspection of the source.

8.10 Startup shutdown and malfunction plan for capture and control device

In accordance with ARSD 74:36:08:03 and 74:36:08:37, as referenced to 40 CFR §§ 63.6(e)(3)(i) and 63.3900(c), respectively, if the owner or operator uses an emission capture system and add-on control device, the owner or operator must develop a written startup, shutdown, and malfunction plan. The plan must address the startup, shutdown, and corrective actions in the event of a malfunction of the emission capture system or the add-on control device. The plan must also address any coating operation equipment that may cause increased emissions or that would affect capture efficiency if the process equipment malfunctions, such as conveyors that move parts among enclosures. The plan does not need to address any scenario that would not cause an exceedance of an applicable emission limitation in this chapter. The plan must be developed by the compliance date in permit condition 8.2 or by the initial startup of an emission capture system and add-on control device. The startup, shutdown, and malfunction plan shall:

1. Ensure that, at all times, the owner or operator operates and maintains each coating operation, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established permit condition 8.9; and

2. Ensure the owner or operator is prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants.

C. Reporting and Recordkeeping

8.11 Semiannual compliance report

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3920(a) and (c)(1), the owner or operator must submit a semiannual compliance report to the Secretary which contains the following:

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 will be based on the last 12 months of data prior to the date of each monthly calculation;
4. Identification of the compliance option or options specified in permit condition 8.5 the owner or operator used on each coating operation during the reporting period. If the owner or operator switched between compliance options during the reporting period, the beginning and ending dates for each option the owner or operator used must be reported;
5. If the owner or operator used the emission rate without add-on controls or the emission rate with add-on controls compliance option, the calculation results for each rolling 12-month organic hazardous air pollutant emission rate during the 6-month reporting period;
6. If the owner or operator used the predominant activity alternative in paragraph (1) of permit condition 8.4, include the annual determination of predominant activity if it was not included in the previous semiannual compliance report;
7. If the owner or operator used the facility-specific emission limit alternative in paragraph (2) of permit condition 8.4, include the calculation of the facility-specific emission limit for each 12-month compliance period during the 6-month reporting period;
8. If there were no deviations from the emission limits in permit condition 8.3, 8.4, 8.6, and 8.7 that apply, the semiannual compliance report must include a statement there were no deviations from the emission limits during the reporting period. If the owner or operator used the emission rate with add-on controls option and there were no periods during which the continuous parameter monitoring systems were out-of-control as specified in permit condition 8.27, the semiannual compliance report must include a statement that there were no periods

during which the continuous parameter monitoring systems were out-of-control during the reporting period;

9. If the owner or operator used the compliant material option and there was a deviation from the applicable organic hazardous air pollutant content requirements, the semiannual compliance report must 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 8-2 for each coating identified in subparagraph (a) of this paragraph. The owner or operator does not need to submit background data supporting this calculation (i.e., information provided by coating suppliers or manufacturers, or test reports);
 - c. The determination of mass fraction of organic hazardous
 - d. air pollutant for each thinner and/or other additive, and cleaning material identified in subparagraph (a) of this paragraph; and
 - e. A statement of the cause of each deviation.
10. If the owner or operator used the emission rate without add-on controls option and there was a deviation from the applicable emission limit, the semiannual compliance report must 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 owner or operator must submit the calculations for Equations 8-2, 8-3, 8-4, 8-5, 8-6, and 8-7; and if applicable, the calculation used to determine mass of organic hazardous air pollutant in waste materials according to Equation 8-3; and
 - c. A statement of the cause of each deviation.
11. If the owner or operator used the emission rate with add-on controls option and there was a deviation from an emission limitation (including any periods when emissions bypassed the add-on control device and were diverted to the atmosphere), the semiannual compliance report must contain the following information. This includes periods of startup, shutdown, and malfunction during which deviations occurred:
 - 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 each compliance period in which a deviation occurred. The owner or operator must provide the calculation of:

- i. 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 8-2, 8-3, 8-4, and 8-5;
 - ii. if applicable, the calculation used to determine mass of organic hazardous air pollutant in waste materials according to Equation 8-3;
 - iii. the calculation of the total volume of coating solids used each month using Equation 8-7 of Permit Condition 8.17;
 - iv. the calculation of the mass of organic hazardous air pollutant emission reduction each month by emission capture systems and add-on control devices using Equations 8-2, 8-3, 8-4, 8-5, and 8-6 of Permit Condition 8.17, and Equations 8-2, 8-8, 8-9, 8-10, 8-11 of Permit Condition 8.17, as applicable;
 - v. the calculation of the total mass of organic hazardous air pollutant emissions each month using Equation 8-4; and
 - vi. the calculation of the 12-month organic hazardous air pollutant emission rate using Equation 8-5.
- c. The date and time that each malfunction started and stopped;
 - d. A brief description of the continuous parameter monitoring system.
 - e. The date of the latest continuous parameter monitoring system certification or audit;
 - f. The date and time that each continuous parameter monitoring system was inoperative, except for zero (low-level) and high-level checks;
 - g. The date, time, and duration that each continuous parameter monitoring system was out-of-control, including the information in Table 8-2;
 - h. The date and time period of each deviation from an operating limit in Table 8-1, date and time period of any bypass of the add-on control device, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period;
 - i. A summary of the total duration of each deviation from an operating limit in Table 8-1 and each bypass of the add-on control device during the semiannual reporting period, and the total duration as a percent of the total source operating time during that semiannual reporting period;
 - j. A breakdown of the total duration of the deviations from the operating limits in Table 8-1 and bypasses of the add-on control device during the semiannual reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes;
 - k. A summary of the total duration of continuous parameter monitoring system downtime during the semiannual reporting period and the total duration of continuous parameter monitoring system downtime as a percent of the total source operating time during that semiannual reporting period;
 - l. A description of any changes in the continuous parameter monitoring system, coating operation, emission capture system, or add-on control device since the last semiannual reporting period;

- m. For each deviation from the work practice standards, a description of the deviation, the date and time period of the deviation, and the actions the owner or operator took to correct the deviation;
 - n. A statement of the cause of each deviation; and
12. If the owner or operator uses the emission rate with add-on controls option and an exceedance of an applicable emission limit occurred during startup, shutdown, or malfunction (including actions taken to correct the malfunction) and the owner's or operator's actions were consistent with the startup, shutdown, and malfunction plan, the owner or operator must include the following:
 - a. specified in §63.10(d) in the semiannual compliance report.
 13. For deviations related to paragraph (9), (10), and (11), the owner or operator does not need to submit the background data supporting the appropriate calculation (i.e., information provided by materials suppliers or manufacturers, or test reports).

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) and if applicable, may be combined with any other semiannual report required in this permit.

8.12 Immediate startup, shutdown, and malfunction report

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3920(c)(2), if the owner or operator uses the emission rate with add-on controls option and the owner's or operator's actions during a startup, shutdown or malfunction were not consistent with the startup, shutdown or malfunction plan (including actions taken to correct a malfunction) resulted in an exceedance of an applicable emission limit in this chapter, the owner or operator must submit an immediate startup, shutdown, and malfunction report. The incident must be reported to the Secretary within 2 working days after the end of the event by facsimile, telephone, or other means followed by a written report within 7 working days after the end of the event. The written report must consist of the following:

1. Name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy;
2. Explaining the circumstances of the event;
3. The reasons for not following the startup, shutdown, and malfunction plan;
4. Describing all excess emissions and/or parameter monitoring exceedances which are believed to have occurred (or could have occurred in the case of malfunctions); and
5. Actions taken to minimize emissions in conformance with permit condition 8.9.

The owner or operator may make alternative reporting arrangements, in advance, with the Secretary by submitting a written request as soon as practicable before the immediate startup, shutdown, and malfunction report is required to take place which includes whatever information the owner or operator considers useful to convince the Secretary that an adjustment is necessary.

The Secretary will notify the owner or operator in writing of the approval or disapproval of the request for adjustment within 15 calendar days of the receiving the request.

8.13 Performance test report submittals

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3920(b), if the owner or operator uses the emission rate with add-on controls option, the owner or operator must submit reports of performance test results for emission capture systems and add-on control devices no later than 60 days after completing the tests as specified in permit condition 8.20.

8.14 Recordkeeping

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:

1. A copy of each notification and report submitted to comply with this chapter and the documentation supporting each notification and report.
2. If the owner or operator is using the predominant activity alternative under permit condition 8.4, the owner or operator must keep records of the data and calculations used to determine the predominant activity.
3. If the owner or operator is using the facility-specific emission limit alternative under permit condition 8.4, the owner or operator must keep records of the data used to calculate the facility-specific emission limit for the initial compliance demonstration. The owner or operator must also keep records of any data used in each annual predominant activity determination and in the calculation of the facility-specific emission limit for each 12-month compliance period included in the semiannual compliance reports;
4. 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 pollutants 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 conducted testing to determine mass fraction of organic hazardous air pollutants, density, or volume fraction of coating solids, a copy of the complete test report must be kept. If the information provided by the manufacturer or supplier of the material is based on testing, the owner or operator must keep the summary sheet of results provided by the manufacturer or supplier. The owner or operator are not required to obtain the test report or other supporting documentation from the manufacturer or supplier;
5. The following for each compliance period:
 - a. A record of the coating operations on which each compliance option and the time periods (beginning and ending dates and times) for each option used;
 - b. For the compliant material option, a record of the calculation of the organic hazardous air pollutant content for each coating, using Equation 8-3;
 - c. For the emission rate without add-on controls option, 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 Equation 8-3, 8-4, 8-5, 8-6, and 8-7; and, if applicable, the calculation used to determine mass of organic hazardous air pollutants in waste materials according to permit condition 8.17; the calculation of the total volume of coating solids used each month using Equation 8-7, and the calculation of each 12-month organic hazardous air pollutant emission rate using Equation 8-8.
- d. For the emission rate with add-on controls option, records of the following calculations:
 - i. 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 Equation 8-4, 8-5, and 8-6 and, if applicable, the calculation used to determine mass of organic hazardous air pollutant in waste materials according to permit condition 8.17;
 - ii. The calculation of the total volume of coating solids used each month using Equation 8-7;
 - iii. The calculation of the mass of organic hazardous air pollutant emission reduction by emission capture systems and add-on control devices using Equation 8-4, 8-4, 8-5, 8-6, 8-9, 8-10, 8-11, and 8-12, as applicable;
 - iv. The calculation of each month's organic hazardous air pollutant emission rate using Equation 8-13; and
 - v. The calculation of each 12-month organic hazardous air pollutant emission rate using Equation 8-14.
 6. 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 owner or operator are using the compliant material option for all coatings at the source, the owner or operator may maintain purchase records for each material used rather than a record of the volume used;
 7. 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;
 8. A record of the volume fraction of coating solids for each coating used during each compliance period;
 9. If the owner or operator uses either the emission rate without add-on controls or the emission rate with add-on controls compliance option, the density for each coating, thinner and/or other additive, and cleaning material used during each compliance period;
 10. If the owner or operator uses an allowance in Equation 8-4 for organic hazardous air pollutant contained in waste materials sent to or designated for shipment to a treatment, storage, and disposal facility (TSDF) according to permit condition 8.17, the owner or operator must maintain the following records:
 - a. The name and address of each TSDF to which the owner or operator sent waste materials for which an allowance in Equation 8-9 was used;

- b. A statement of which subparts under 40 CFR Part 262, 264, 265, and 266 apply and the date of each shipment;
 - c. Identification of the coating operations producing waste materials included in each shipment and the month or months in which the allowance for these materials in Equation 8-9 was used;
 - d. The methodology used in accordance with permit condition 8.17 to determine the total amount of waste materials sent to or the amount collected, stored, and designated for transport to a TSDf each month and the methodology to determine the mass of organic hazardous air pollutant 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;
9. The owner or operator must keep records of the date, time, and duration of each deviation;
10. If the emission rate with add-on controls option is used, the owner or operator must keep the following records:
- a. For each deviation, a record of whether the deviation occurred during a period of startup, shutdown, or malfunction;
 - b. The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.
 - c. The records required to show continuous compliance with each operating limit specified in Table 8-1 that applies;
 - d. For each capture system that is a permanent total enclosure, the data and documentation the owner or operator used to support a determination that the capture system meets the criteria in 40 CFR Part 51, Appendix M, Method 204 for a permanent total enclosure and has a capture efficiency of 100 percent, as specified in permit condition 8.24;
 - e. For each capture system that is not a permanent total enclosure, the data and documentation the owner or operator used to determine capture efficiency according to the requirements specified in permit condition 8.24 and 8.25, including the following records that are applicable:
 - i. For liquid-to-uncaptured gas protocol, records of the mass of total volatile hydrocarbon (TVH) as measured by 40 CFR Part 51, Appendix M, Method 204A or 204F for each material used in the coating operation, and the total TVH for all materials used during each capture efficiency test run, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run, including a copy of the test report. Records documenting the enclosure used for the capture efficiency test met the criteria in 40 CFR Part 51, Appendix M, Method 204 for either a temporary total enclosure or a building enclosure;

- ii. For gas-to-gas protocol, records of the mass of TVH emissions captured by the emission capture system as measured by 40 CFR Part 51, Appendix M, Method 204B or 204C at the inlet to the add-on control device, including a copy of the test report. Records of the mass of TVH emissions not captured by the capture system that exited the temporary total enclosure or building enclosure during each capture efficiency test run as measured by 40 CFR Part 51, Appendix M, Method 204D or 204E, including a copy of the test report. Records documenting the enclosure used for the capture efficiency test met the criteria in 40 CFR Part 51, Appendix M, Method 204 for either a temporary total enclosure or a building enclosure;
- iii. For an alternative protocol, records needed to document a capture efficiency determination using an alternative method or protocol as specified in permit condition 8.23, if applicable;
- f. The following records for each add-on control device organic hazardous air pollutant destruction or removal efficiency determination as specified in permit condition 8. 25:
 - i. Records of each add-on control device performance test conducted according to permit condition 8.24 and 8.25;
 - ii. Records of the coating operation conditions during the add-on control device performance test showing the performance test was conducted under representative operating conditions;
- g. Records of the data and calculations the owner or operator used to establish the emission capture and add-on control device operating limits as specified in permit condition 8.26 and to document compliance with the operating limits as specified in Table 8-1; and
- h. A record of the work practice plan required by permit condition 8.7 and documentation that the owner or operator is implementing the plan on a continuous basis.

Failure to collect and keep these records is a deviation from the applicable standard.

8.15 Form and duration of recordkeeping

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3931, the owner or operator must maintain the records in this chapter in a form suitable and readily available for expeditious review. The records may be maintained as electronic spreadsheets or as a database. The owner or operator must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Records must be kept on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. Records may be kept off-site for the remaining 3 years.

D. Compliance with Compliant Material Option

8.16 Date to conduct initial compliance demonstration

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3940, the owner or operator must complete the initial compliance demonstration for the initial compliance period according to the requirements in permit condition 8.17. The initial compliance period begins on the applicable compliance date specified in permit condition 8.2 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through that month plus the next 12 months. The initial compliance demonstration includes the calculations according to permit condition 8.17 and supporting documentation showing that during the initial compliance period, the owner or operator used no coating with an organic hazardous air pollutant content that exceeded the applicable emission limit in permit condition 8.3, and the owner or operator used no thinners and/or other additives, or cleaning materials that contained organic hazardous air pollutant as determined according to permit condition 8.17a.

8.17 Demonstrating initial compliance with emission limitations

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941, the owner or operator may use the compliant material option for any individual coating operation, for any group of coating operations, or for all the coating operations. To demonstrate initial compliance using the compliant material option, the coating operation or group of coating operations must use no coating with an organic hazardous air pollutant content that exceeds the applicable emission limits in permit condition 8.3 and must use no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutants. The owner or operator must conduct a separate initial compliance demonstration for each general use, high performance, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation unless the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit as provided in permit condition 8.4. If the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit, the owner or operator must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit complies with that limit. Use the procedures in this section 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. The owner or operator does not need to re-determine the organic hazardous air pollutant content of coatings, thinners and/or other additives, and cleaning materials that are reclaimed on-site (or reclaimed off-site if the owner or operator has documentation showing the owner or operator received back the exact same materials that were sent off-site) and reused in the coating operation for which the owner or operator used the compliant material option, provided these materials in their condition as received were demonstrated to comply with the compliant material option.

8.17a Determine mass fraction of organic HAP based on testing

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(a), the owner or operator must 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 by using one of the following options:

1. The owner or operator may use 40 CFR Part 63, Appendix A, Method 311 for determining the mass fraction of organic hazardous air pollutant using the following procedures:
 - a. Count each organic hazardous air pollutant that is measured to be present at 0.1 percent by mass or more for Occupational Safety and Health Administration (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 example, if toluene (not an OSHA carcinogen) is measured to be 0.5 percent of the material by mass, the owner or operator does not have to count it. Express the mass fraction of each organic hazardous air pollutant the owner or operator count as a value truncated to four places after the decimal point (i.e., 0.3791); 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 (i.e., 0.379);
2. For coatings, 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 mass fraction of organic hazardous air pollutant. For reactive adhesives in which some of the hazardous air pollutant react to form solids and are not emitted to the atmosphere, the owner or operator may use the alternative method contained in 40 CFR Part 63, Subpart PPPP, Appendix A, rather than Method 24. The owner or operator may use the volatile fraction that is emitted, as measured by the alternative method in 40 CFR Part 63, Subpart PPPP, Appendix A, 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 once the Secretary has approved it. The owner or operator must follow the following procedures to submit an alternative test method for approval:
 - a. Notify the Secretary of the owner's or operator's intention to use an alternative test method at least 60 days before the performance test is scheduled to begin;
 - b. Uses 40 CFR Part 63, Appendix A, Method 301 to validate the alternative test method. This may include the use of specific procedures of Method 301 if use of such procedures are sufficient to validate the alternative test method; and
 - c. Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified test method.
4. The owner or operator may rely on the 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 pollutant 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 paragraph (1) through (3) of this permit condition, then the test method results will take precedence unless, after consultation, the owner or operator 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 pollutant which must be counted toward the total organic hazardous air pollutant mass fraction of the materials. When test data and manufacturer's data for solvent blends are not available, the owner or operator may use the default values for the mass fraction of organic hazardous air pollutant in these solvent blends listed in Table 8-3 or 8-4. If the owner or operator use the tables, the owner or operator must use the values in Table 8-3 for all solvent blends that match Table 8-3 entries according to the instructions for Table 8-3, and the owner or operator may use Table 8-4 only if the solvent blends in the materials the owner or operator use do not match any of the solvent blends in Table 8-3 and the owner or operator know only whether the blend is aliphatic or aromatic. However, if the results of a Method 311 test indicate higher values than those listed on Table 8-3 or 8-4, the Method 311 results will take precedence unless, after consultation, the owner or operator demonstrate to the satisfaction of the enforcement agency that the formulation data are correct.

8.17b Determine 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 must 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 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. The owner or operator shall divide the nonvolatile volume percent obtained with the methods by 100 to calculate volume fraction of coating solids;
2. The owner or operator may use an alternative test method for determining the solids content of each coating once the Administrator has approved it. The owner or operator must follow the procedure in paragraph (3) of permit condition 8.17a 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; or

4. The owner or operator may determine the volume fraction of coating solids using Equation 8-2.

Equation 8-2: Calculating volume fraction of coating solids

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

Where:

- V_s = Volume fraction of coating solids, 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_{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 test results obtained according to paragraph (1) of this permit condition do not agree with the information obtained under paragraph (2) through (4) of this permit condition, 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.

8.17c 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 must 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 Method D1475–98 test results and the supplier's or manufacturer's information, 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.

8.17d Determine the organic HAP content of each coating

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(d), the owner or operator must calculate the organic hazardous air pollutant content, in kilograms (pounds) of organic hazardous air pollutant emitted per liter (gallon) coating solids used, of each coating used during the compliance period using Equation 8-3.

Equation 8-3: Calculating organic HAP content of 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 permit condition 8.17c;
- W_c = Mass fraction of organic hazardous air pollutant in the coating, in kilograms (pounds) coating per liter (gallon) coating, determined according to permit condition 8.17a; and
- V_s = Volume fraction of coating solids, in liter (gallon) coating solids per liter (gallon) coating, determined according to permit condition 8.17b.

8.17e Compliance demonstration

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3941(e), the calculated organic hazardous air pollutant content for each coating used during the initial compliance period must be less than or equal to the applicable emission limit in permit condition 8.3 and each thinner and/or other additive, and cleaning material used during the initial compliance period must contain no organic hazardous air pollutant, determined according to permit condition 8.17a. As part of the notification of compliance status required in permit condition 8.11, the owner or operator must identify the coating operation(s) for which the owner or operator used the compliant material option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the owner or operator used no coatings for which the organic hazardous air pollutant content exceeded the applicable emission limit in permit condition 8.3, and the owner or operator used no thinners and/or other additives, or cleaning materials that contained organic hazardous air pollutant, determined according to the procedures in to permit condition 8.17a.

8.17f Demonstrating continuous compliance with emission limits

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3942, to demonstrate continuous compliance, the owner or operator shall:

1. For each compliance period, use no coating for which the organic hazardous air pollutant content (determined using Equation 8-3) exceeds the applicable emission limit in permit condition 8.3 and use no thinner and/or other additive, or cleaning material that contains organic hazardous air pollutant, determined according to permit condition 8.17a. A compliance period consists of 12 months. Each month, after the end of the initial compliance period described in permit condition 8.8 is the end of a compliance period consisting of that month and the preceding 11 months. If the owner or operator are complying with a facility-specific emission limit under permit condition 8.4, the owner or operator must also perform the calculation using Equation 8-1 on a monthly basis using the data from the previous 12 months of operation;
2. If the owner or operator chooses to comply with the emission limits by using the compliant material option, the use of any coating, thinner and/or other additive, or cleaning material that does not meet the criteria specified in paragraph (1) of this permit

condition is a deviation from the emission limits that must be reported as specified in permit condition 8.11;

3. As part of each semiannual compliance report, the owner or operator must identify the coating operation(s) for which the owner or operator used the compliant material option. If there were no deviations from the applicable emission limit in permit condition 8.3, submit a statement that the coating operation(s) was (were) in compliance with the emission limits during the reporting period because the owner or operator used no coatings for which the organic hazardous air pollutant content exceeded the applicable emission limit in permit condition 8.3, and the owner or operator used no thinner and/or other additive or cleaning material that contained organic hazardous air pollutant, determined according to permit condition 8.17a; and
4. The owner or operator must maintain records as specified in permit condition 8.14 and 5.1.

E. Compliance with Emission Rate Without Add-On Controls Option

8.18 Date to conduct initial compliance demonstration

In accordance with ARSD 74:36:08:37, as referenced to 40 CFR § 63.3950, the initial compliance period begins on the applicable compliance date specified in permit condition 8.2 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. The owner or operator must determine the mass of organic hazardous air pollutant emissions and volumes of coating solids used each month and then calculate an organic hazardous air pollutant emission rate at the end of the initial compliance period. The initial compliance demonstration includes the calculations according to Permit Condition 8.18 and supporting documentation showing that during the initial compliance period the organic HAP emission rate was equal to or less than the applicable emission limit in Permit Condition 8.4.

8.19 Demonstrating initial compliance with emission limitations

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3951, the owner or operator may 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 the affected source. The owner or operator must use either the compliant material option or the emission rate with add-on controls option for any coating operation in the affected source for which this option is not used. To demonstrate initial compliance using the emission rate without add-on controls option, the coating operation or group of coating operations must meet the applicable emission limit in Permit Condition 8.4, but is not required to meet the operating limits or work practice standards in Permit Condition 8.6 and 8.7, respectively. The owner or operator must conduct a separate initial compliance demonstration for each general use, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation unless demonstrating compliance with a predominant activity or facility-specific emission limit as provided in Permit Condition 8.43(c). If demonstrating compliance with a predominant activity or facility-specific emission limit as provided in Permit Condition 8.4(3), the owner or operator

must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit comply with that limit. The owner or operator must meet all the requirements of this section. When calculating the organic HAP emission rate according to this section, do not include any coatings, thinners and/or other additives, or cleaning materials used on coating operations for which the compliant material option or the emission rate with add-on controls option is used. Do not redetermine the mass of organic HAP in coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site (or reclaimed off-site if there is documentation showing that the owner or operator received back the exact same materials that were sent off-site) and reused in the coating operation for which you use the emission rate without add-on controls option. If coatings, thinners and/or other additives, or cleaning materials are used that have been reclaimed on-site, the amount of each used in a month may be reduced by the amount of each that is reclaimed. That is, the amount used may be calculated as the amount consumed to account for materials that are reclaimed.

1. *Determine the mass fraction of organic HAP for each material.* Determine the mass fraction of organic HAP for each coating, thinner and/or other additive, and cleaning material used during each month according to the requirements in Permit Condition 8.15(1).
2. *Determine the volume fraction of coating solids.* Determine the volume fraction of coating solids (liter (gal) of coating solids per liter (gal) of coating) for each coating used during each month according to the requirements in Permit Condition 8.15(2).
3. *Determine the density of each material.* 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 Coatings, Inks, and Related Products” (incorporated by reference, see §63.14), 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” (incorporated by reference, see §63.14), 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 you demonstrate to the satisfaction of the Administrator that the formulation data are correct. If the owner or operator purchases materials or monitors consumption by weight instead of volume, the material density does not have to be determined. Instead, use the material weight in place of the combined terms for density and volume in Equations 8-4 through 8-7 of this section.
4. *Determine the volume of each material used.* 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 the owner or operator purchases materials or monitor consumption by weight instead of volume, the volume of each material used does not have to be determined. Instead, use the material weight in place of the combined terms for density and volume in Equations 8-4 through 8-6 of this section.
5. *Calculate the mass of organic HAP emissions.* The mass of organic HAP emissions is the combined mass of organic HAP contained in all coatings, thinners and/or other additives, and

cleaning materials used during each month minus the organic HAP in certain waste materials. Calculate the mass of organic HAP emissions using Equation 8-3 of this section.

Equation 8-3: Mass of organic HAP emissions

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

Where:

H_e = Total mass of organic HAP emissions during the month, kg.

A = Total mass of organic HAP in the coatings used during the month, kg, as calculated in Equation 1A of this section.

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg, as calculated in Equation 1B of this section.

C = Total mass of organic HAP in the cleaning materials used during the month, kg, as calculated in Equation 1C of this section.

R_w = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for treatment or disposal during the month, kg, determined according to paragraph (e)(4) of this section. (You may assign a value of zero to R_w if you do not wish to use this allowance.)

- a. Calculate the kg organic HAP in the coatings used during the month using Equation 8-4:

Equation 8-4: Mass of organic HAP in coatings

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

Where:

A = Total mass of organic HAP in the coatings used during the month, kg.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$D_{c,i}$ = Density of coating, i, kg coating per liter coating.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.

For reactive adhesives, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

m = Number of different coatings used during the month.

- b. Calculate the kg of organic HAP in the thinners and/or other additives used during the month using Equation 1B of this section:

Equation 8-5: Mass of organic HAP in thinners

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

Where:

B = Total mass of organic HAP in the thinners and/or other additives used during the month, kg.

Vol_{t,j}= Total volume of thinner and/or other additive, j, used during the month, liters.

D_{t,j}= Density of thinner and/or other additive, j, kg per liter.

W_{t,j}= Mass fraction of organic HAP in thinner and/or other additive, j, kg organic HAP per kg thinner and/or other additive. For reactive adhesives, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

n = Number of different thinners and/or other additives used during the month.

- c. Calculate the kg organic HAP in the cleaning materials used during the month using Equation 8-6 of this section:

Equation 8-6: Mass of organic HAP in cleaning materials

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

Where:

C = Total mass of organic HAP in the cleaning materials used during the month, kg.

Vol_{s,k}= Total volume of cleaning material, k, used during the month, liters.

D_{s,k}= Density of cleaning material, k, kg per liter.

W_{s,k}= Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg material.

p = Number of different cleaning materials used during the month.

- d. If you choose to account for the mass of organic HAP contained in waste materials sent or designated for shipment to a hazardous waste TSDF in Equation 1 of this section, then you must determine the mass according to paragraphs (i) through (iv) of this section.
- i. You may only include waste materials in the determination that are generated by coating operations in the affected source for which you use Equation 1 of this section and that will be treated or disposed of by a facility that is regulated as a TSDF under 40 CFR part 262, 264, 265, or 266. The TSDF may be either off-site or on-site. You may not include organic HAP contained in wastewater.
 - ii. You must determine either the amount of the waste materials sent to a TSDF during the month or the amount collected and stored during the month and designated for future transport to a TSDF. Do not include in your determination any waste materials sent to a TSDF during a month if you have already included them in the amount collected and stored during that month or a previous month.
 - iii. Determine the total mass of organic HAP contained in the waste materials specified in paragraph (ii) of this section.

- iv. You must document the methodology you use to determine the amount of waste materials and the total mass of organic HAP they contain, as required in Permit Condition 8.12(8). If waste manifests include this information, they may be used as part of the documentation of the amount of waste materials and mass of organic HAP contained in them.

5. *Calculate the total volume of coating solids used.* Determine the total volume of coating solids used, liters, which is the combined volume of coating solids for all the coatings used during each month, using Equation 8-7 of this section:

Equation 8-7: Total volume of coating solids used

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

Where:

V_{st} = Total volume of coating solids used during the month, liters.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$V_{s,i}$ = Volume fraction of coating solids for coating, i, liter solids per liter coating, determined according to Permit Condition 8.15(b).

m = Number of coatings used during the month.

6. *Calculate the organic HAP emission rate.* Calculate the organic HAP emission rate for the compliance period, kg (lb) organic HAP emitted per liter (gal) coating solids used, using Equation 8-8 of this section:

Equation 8-8: Organic HAP emission rate for compliance period

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

Where:

H_{yr} = Average organic HAP emission rate for the compliance period, kg organic HAP emitted per liter coating solids used.

H_e = Total mass of organic HAP emissions from all materials used during month, y, kg, as calculated by Equation 1 of this section.

V_{st} = Total volume of coating solids used during month, y, liters, as calculated by Equation 2 of this section.

y = Identifier for months.

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).

7. *Compliance demonstration.* The organic HAP emission rate for the initial compliance period calculated using Equation 3 of this section must be less than or equal to the applicable emission limit for each subcategory in Permit Condition 8.4 or the predominant activity or facility-specific emission limit allowed in Permit Condition 8.4(3). You must keep all records as required by Permit Condition 8.12 and 63.3931. As part of the notification of compliance status required by Permit Condition 8.10, you must identify the coating operation(s) for which you used the emission rate without add-on controls option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in Permit Condition 8.4, determined according to the procedures in this section.

8.20 Demonstrating continuous compliance with emission limitations

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3952, to demonstrate continuous compliance with applicable emissions limits:

1. The organic HAP emission rate for each compliance period, determined according to Permit Condition 8.18(1) through (7), must be less than or equal to the applicable emission limit in Permit Condition 8.4. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in Permit Condition 8.17 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 Permit Condition 8.18(1) through (7) on a monthly basis using data from the previous 12 months of operation. If the owner or operator are complying with a facility-specific emission limit under Permit Condition 8.4(3), the owner or operator must also perform the calculation using Equation 1 in Permit Condition 8.4(3)(b) on a monthly basis using the data from the previous 12 months of operation.
2. If the organic HAP emission rate for any 12-month compliance period exceeded the applicable emission limit in Permit Condition 8.4, this is a deviation from the emission limitation for that compliance period and must be reported as specified in Permit Condition 8.10(3)(f) and 8.12(1)(f).
3. As part of each semiannual compliance report required by Permit Condition 8.11, the owner or operator must identify the coating operation(s) for which the owner or operator used the emission rate without add-on controls option. If there were no deviations from the emission limitations, the owner or operator must submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in Permit Condition 8.4, determined according to Permit Condition 8.18(1) through (7).
4. The owner or operator must maintain records as specified in Permit Condition 8.12 and 8.13.

F. Compliance Requirements for the Emission Rate With Add-On Controls Option

8.21 Time to conduct performance tests and other initial compliance demonstrations

1. In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63. 3960, the owner or operator of a new or reconstructed source must meet the following requirements:
 - a. All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in Permit Condition 8.3. Except for solvent recovery systems for which the owner or operator conduct liquid-liquid material balances according to Permit Condition 8.21(10), the owner or operator must conduct a performance test of each capture system and add-on control device according to Permit Condition 8.23, 8.24, and Permit Condition 8.25 and establish the operating limits required by Permit Condition 8.6 no later than 180 days after the applicable compliance date specified in Permit Condition 8.3. For a solvent recovery system for which the owner or operator conduct liquid-liquid material balances according to Permit Condition 8.21(10), the owner or operator must initiate the first material balance no later than the applicable compliance date specified in Permit Condition 8.3. For magnet wire coating operations the owner or operator may, with approval, conduct a performance test of one representative magnet wire coating machine for each group of identical or very similar magnet wire coating machines.
 - b. The owner or operator must develop and begin implementing the work practice plan required by Permit Condition 8.7 no later than the compliance date specified in Permit Condition 8.3.
 - c. The owner or operator must complete the initial compliance demonstration for the initial compliance period according to the requirements of Permit Condition 8.21. The initial compliance period begins on the applicable compliance date specified in Permit Condition 8.3 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. The owner or operator must determine the mass of organic HAP emissions and volume of coatings solids used each month and then calculate an organic HAP emission rate at the end of the initial compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to Permit Condition 8.23, 8.24, and Permit Condition 8.25; results of liquid-liquid material balances conducted according to Permit Condition 8.21(10); calculations according to Permit Condition 8.21 and supporting documentation showing that during the initial compliance period the organic HAP emission rate was equal to or less than the applicable emission limit in Permit Condition 8.4; the operating limits established during the performance tests and the results of the continuous parameter monitoring required by Permit Condition 8.27; and documentation of whether the owner or operator developed and implemented the work practice plan required by Permit Condition 8.7.
 - d. The owner or operator does not need to comply with the operating limits for the emission capture system and add-on control device required by Permit Condition 8.6 until after the owner or operator have completed the performance tests specified in paragraph (1)(a) of

this section. Instead, the owner or operator must maintain a log detailing the operation and maintenance of the emission capture system, add-on control device, and continuous parameter monitors during the period between the compliance date and the performance test. The owner or operator must begin complying with the operating limits for the owner or operator affected source on the date the owner or operator complete the performance tests specified in paragraph (1)(a) of this section. For magnet wire coating operations, the owner or operator must begin complying with the operating limits for all identical or very similar magnet wire coating machines on the date the owner or operator complete the performance test of a representative magnet wire coating machine. The requirements in this paragraph (1)(d) do not apply to solvent recovery systems for which the owner or operator conduct liquid-liquid material balances according to the requirements in Permit Condition 8.21(10).

2. *Existing affected sources.* For an existing affected source, the owner or operator must meet the requirements of paragraphs (a) through (c) of this section.
 - a. All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in Permit Condition 8.3. Except for magnet wire coating operations and solvent recovery systems for which the owner or operator conduct liquid-liquid material balances according to Permit Condition 8.21(10), the owner or operator must conduct a performance test of each capture system and add-on control device according to the procedures in Permit Condition 8.23, 8.24, and Permit Condition 8.25 and establish the operating limits required by Permit Condition 8.6 no later than the compliance date specified in Permit Condition 8.3. For magnet wire coating operations, the owner or operator may, with approval, conduct a performance test of a single magnet wire coating machine that represents identical or very similar magnet wire coating machines. For a solvent recovery system for which the owner or operator conduct liquid-liquid material balances according to Permit Condition 8.21(10), the owner or operator must initiate the first material balance no later than the compliance date specified in Permit Condition 8.3.
 - b. The owner or operator must develop and begin implementing the work practice plan required by Permit Condition 8.7 no later than the compliance date specified in Permit Condition 8.3.
 - c. You must complete the initial compliance demonstration for the initial compliance period according to the requirements of Permit Condition 8.21. The initial compliance period begins on the applicable compliance date specified in Permit Condition 8.3 and ends on the last day of the 12th month following the compliance date. If the compliance date occurs on any day other than the first day of a month, then the initial compliance period extends through the end of that month plus the next 12 months. You must determine the mass of organic HAP emissions and volume of coatings solids used each month and then calculate an organic HAP emission rate at the end of the initial compliance period. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to Permit Condition 8.23, 8. 24,

and Permit Condition 8.25; results of liquid-liquid material balances conducted according to Permit Condition 8.21(10); calculations according to Permit Condition 8.21 and supporting documentation showing that during the initial compliance period the organic HAP emission rate was equal to or less than the applicable emission limit in Permit Condition 8.4; the operating limits established during the performance tests and the results of the continuous parameter monitoring required by Permit Condition 8.27; and documentation of whether you developed and implemented the work practice plan required by Permit Condition 8.7.

4. The owner or operator is not required to conduct an initial performance test to determine capture efficiency or destruction efficiency of a capture system or control device if approval to use the results of a performance test that has been previously conducted on that capture system or control device has been received. Any such previous tests must meet the conditions described in paragraphs (a) through (c) of this section.
 - a. The previous test must have been conducted using the methods and conditions specified in this subpart.
 - b. Either no process or equipment changes have been made since the previous test was performed or the owner or operator must be able to demonstrate that the results of the performance test, reliably demonstrate compliance despite process or equipment changes.
 - c. Either the required operating parameters were established in the previous test or sufficient data were collected in the previous test to establish the required operating parameters.

8.22 Demonstrating initial compliance

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3961, demonstrating initial compliance is accomplished by the following:

1. The owner or operator may use the emission rate with add-on controls option for any coating operation, for any group of coating operations in the affected source, or for all of the coating operations in the affected source. The owner or operator may include both controlled and uncontrolled coating operations in a group for which this option is used. The owner or operator must use either the compliant material option or the emission rate without add-on controls option for any coating operation in the affected source for which the owner or operator does not use the emission rate with add-on controls option. To demonstrate initial compliance, the coating operation(s) for which the emission rate with add-on controls option is used must meet the applicable emission limitations in Permit Condition 8.4, 8.6 and 8.7. The owner or operator must conduct a separate initial compliance demonstration for each general use, magnet wire, rubber-to-metal, and extreme performance fluoropolymer coating operation, unless the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit as provided in Permit Condition 8.4(3). If the owner or operator is demonstrating compliance with a predominant activity or facility-specific emission limit, the owner or operator must demonstrate that all coating operations included in the predominant activity determination or calculation of the facility-specific emission limit comply with that limit. The owner or operator must meet all the requirements of this section. When calculating the organic HAP emission rate according to this section, do

not include any coatings, thinners and/or other additives, or cleaning materials used on coating operations for which the compliant material option is used or the emission rate without add-on controls option is used. The owner or operator does not need to redetermine the mass of organic HAP in coatings, thinners and/or other additives, or cleaning materials that have been reclaimed onsite (or reclaimed off-site if there is documentation showing that the owner or operator received back the exact same materials that were sent off-site) and reused in the coatings operation(s) for which the emission rate with add-on controls option is used. If the owner or operator uses coatings, thinners and/or other additives, or cleaning materials that have been reclaimed on-site, the amount of each used in a month may be reduced by the amount of each that is reclaimed. That is, the amount used may be calculated as the amount consumed to account for materials that are reclaimed.

2. *Compliance with operating limits.* Except as provided in Permit Condition 8.20(1)(d), and except for solvent recovery systems for liquid-liquid material balances are conducted according to the requirements of paragraph (10) of this section, the owner or operator must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by Permit Condition 8.6, using the procedures specified in Permit Condition 8.26 and Permit Condition 8.27.
3. *Compliance with work practice requirements.* The owner or operator must develop, implement, and document implementation of the work practice plan required by Permit Condition 8.7 during the initial compliance period, as specified in Permit Condition 8.12.
4. *Compliance with emission limits.* The owner or operator must follow the procedures in paragraphs (5) through (13) of this section to demonstrate compliance with the applicable emission limit in Permit Condition 8.4 for each affected source in each subcategory.
5. *Determine the mass fraction of organic HAP, density, volume used, and volume fraction of coating solids.* Follow the procedures specified in Permit Condition 8.18(1) through (4) to determine the mass fraction of organic HAP, density, and volume of each coating, thinner and/or other additive, and cleaning material used during each month; and the volume fraction of coating solids for each coating used during each month.
6. *Calculate the total mass of organic HAP emissions before add-on controls.* Using Equation 1 of Permit Condition 8.18, calculate the total mass of organic HAP emissions before add-on controls from all coatings, thinners and/or other additives, and cleaning materials used during each month in the coating operation or group of coating operations for which the emission rate with add-on controls option is used.
7. *Calculate the organic HAP emission reduction for each controlled coating operation.* Determine the mass of organic HAP emissions reduced for each controlled coating operation during each month. The emission reduction determination quantifies the total organic HAP emissions that pass through the emission capture system and are destroyed or removed by the add-on control device. Use the procedures in paragraph (8) of this section to calculate the mass of organic HAP emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for conducting liquid-liquid material balances. For each controlled coating operation using a

solvent recovery system for which the owner or operator conducts a liquid-liquid material balance, use the procedures in paragraph (10) of this section to calculate the organic HAP emission reduction.

8. Calculate the organic HAP emission reduction for each controlled coating operation not using liquid-liquid material balance. Use Equation 1 of this section to calculate the organic HAP emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which liquid-liquid material balances are conducted. The calculation applies the emission capture system efficiency and add-on control device efficiency to the mass of organic HAP contained in the coatings, thinners and/or other additives, and cleaning materials that are used in the coating operation served by the emission capture system and add-on control device during each month. The owner or operator must assume zero efficiency for the emission capture system and add-on control device for any period of time a deviation specified in Permit Condition 8.22(c) or (d) occurs in the controlled coating operation, including a deviation during a period of startup, shutdown, or malfunction, unless the owner or operator have other data indicating the actual efficiency of the emission capture system and add-on control device and the use of these data is approved by the Administrator. Equation 8-9 of this section treats the materials used during such a deviation as if they were used on an uncontrolled coating operation for the time period of the deviation.

Equation 8-9: Organic HAP emissions reduction

$$H_c = (A_c + B_c + C_c - R_w - H_{UNC}) \left(\frac{CE}{100} \times \frac{DRE}{100} \right)$$

Where:

H_C= Mass of organic HAP emission reduction for the controlled coating operation during the month, kg.

A_C= Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg, as calculated in Equation 1A of this section.

B_C= Total mass of organic HAP in the thinners and/or other additives used in the controlled coating operation during the month, kg, as calculated in Equation 1B of this section.

C_C= Total mass of organic HAP in the cleaning materials used in the controlled coating operation during the month, kg, as calculated in Equation 1C of this section.

R_w= Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for treatment or disposal during the compliance period, kg, determined according to Permit Condition 8.18(4)(e). (A value of zero may be assigned to R_w if this allowance is not used.)

H_{UNC}= Total mass of organic HAP in the coatings, thinners and/or other additives, and cleaning materials used during all deviations specified in Permit Condition

8.22(3) and (4) that occurred during the month in the controlled coating operation, kg, as calculated in Equation 1D of this section.

CE = Capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures specified in Permit Condition 8.23 and 8.24 to measure and record capture efficiency.

DRE = Organic HAP destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in Permit Condition 8.23 and Permit Condition 8.25 to measure and record the organic HAP destruction or removal efficiency.

- a. Calculate the mass of organic HAP in the coatings used in the controlled coating operation, kg (lb), using Equation 8-10 of this section:

Equation 8-10: Mass of organic HAP in coatings

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

Where:

A_C = Total mass of organic HAP in the coatings used in the controlled coating operation during the month, kg.

$Vol_{c,i}$ = Total volume of coating, i, used during the month, liters.

$D_{c,i}$ = Density of coating, i, kg per liter.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg per kg. For reactive adhesives as defined in §63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

m = Number of different coatings used.

- b. Calculate the mass of organic HAP in the thinners and/or other additives used in the controlled coating operation, kg (lb), using Equation 8-11 of this section:

Equation 8-11: Mass of organic HAP in thinners/additives

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

Where:

B_C = Total mass of organic HAP in the thinners and/or other additives used in the controlled coating operation during the month, kg.

$Vol_{t,j}$ = Total volume of thinner and/or other additive, j, used during the month, liters.

$D_{t,j}$ = Density of thinner and/or other additive, j, kg per liter.

$W_{t,j}$ = Mass fraction of organic HAP in thinner and/or other additive, j, kg per kg. For reactive adhesives as defined in §63.3981, use the mass fraction of organic

HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

n = Number of different thinners and/or other additives used.

- c. Calculate the mass of organic HAP in the cleaning materials used in the controlled coating operation during the month, kg (lb), using Equation 8-12 of this section:

Equation 8-12: Mass of organic HAP in cleaning materials

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

Where:

C_c = Total mass of organic HAP in the cleaning materials used in the controlled coating operation during the month, kg.

$Vol_{s,k}$ = Total volume of cleaning material, k, used during the month, liters.

$D_{s,k}$ = Density of cleaning material, k, kg per liter.

$W_{s,k}$ = Mass fraction of organic HAP in cleaning material, k, kg per kg.

p = Number of different cleaning materials used.

- d. Calculate the mass of organic HAP in the coatings, thinners and/or other additives, and cleaning materials used in the controlled coating operation during deviations specified in Permit Condition 8.22(3) and (4), using Equation 8-13:

Equation 8-13: Mass of Organic HAP in coatings

$$H_{unc} = \sum_{h=1}^q (Vol_h)(D_h)(W_h)$$

Where:

H_{unc} = Total mass of organic HAP in the coatings, thinners and/or other additives, and cleaning materials used during all deviations specified in Permit Condition 8.22(3) and (4) that occurred during the month in the controlled coating operation, kg.

Vol_h = Total volume of coating, thinner and/or other additive, or cleaning material, h, used in the controlled coating operation during deviations, liters.

D_h = Density of coating, thinner and/or other additives, or cleaning material, h, kg per liter.

W_h = Mass fraction of organic HAP in coating, thinner and/or other additives, or cleaning material, h, kg organic HAP per kg coating. For reactive adhesives as defined in §63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

q = Number of different coatings, thinners and/or other additives, and cleaning materials used.

10. Calculate the organic HAP emission reduction for each controlled coating operation using liquid-liquid material balances. For each controlled coating operation using a solvent

recovery system for which the owner or operator conducts liquid-liquid material balances, calculate the organic HAP emission reduction by applying the volatile organic matter collection and recovery efficiency to the mass of organic HAP contained in the coatings, thinners and/or other additives, and cleaning materials that are used in the coating operation controlled by the solvent recovery system during each month. Perform a liquid-liquid material balance for each month as specified in paragraphs (1) through (6). Calculate the mass of organic HAP emission reduction by the solvent recovery system as specified in paragraph (6) of this section.

- a. For each solvent recovery system, install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile organic matter recovered by the solvent recovery system each month. The device must be initially certified by the manufacturer to be accurate to within ± 2.0 percent of the mass of volatile organic matter recovered.
- b. For each solvent recovery system, determine the mass of volatile organic matter recovered for the month, based on measurement with the device required in paragraph (a) of this section.
- c. Determine the mass fraction of volatile organic matter for each coating, thinner and/or other additive, and cleaning material used in the coating operation controlled by the solvent recovery system during the month, kg volatile organic matter per kg coating. The owner or operator may determine the volatile organic matter mass fraction using Method 24 of 40 CFR part 60, appendix A, or an EPA approved alternative method, or the owner or operator may use information provided by the manufacturer or supplier of the coating. In the event of any inconsistency between information provided by the manufacturer or supplier and the results of Method 24 of 40 CFR part 60, appendix A, or an approved alternative method, the test method results will take precedence unless, after consultation the owner or operator demonstrate to the satisfaction of the enforcement agency that the formulation data are correct.
- d. Determine the density of each coating, thinner and/or other additive, and cleaning material used in the coating operation controlled by the solvent recovery system during the month, kg per liter, according to Permit Condition 8.18(3).
- e. Measure the volume of each coating, thinner and/or other additive, and cleaning material used in the coating operation controlled by the solvent recovery system during the month, liters.
- f. Each month, calculate the solvent recovery system's volatile organic matter collection and recovery efficiency, using Equation 8-14:

Equation 8-14: Solvent Recovery System's Volatile Organic Matter Collection and Recovery Efficiency

$$Rv = 100 \frac{M_{VR}}{\sum_{i=1}^m Vol_i D_i WV_{c,i} + \sum_{j=1}^n Vol_j D_j WV_{t,j} + \sum_{k=1}^p Vol_k D_k WV_{s,k}}$$

Where:

R_V = Volatile organic matter collection and recovery efficiency of the solvent recovery system during the month, percent.

M_{VR} = Mass of volatile organic matter recovered by the solvent recovery system during the month, kg.

Vol_i = Volume of coating, i, used in the coating operation controlled by the solvent recovery system during the month, liters.

D_i = Density of coating, i, kg per liter.

$WV_{c,i}$ = Mass fraction of volatile organic matter for coating, i, kg volatile organic matter per kg coating. For reactive adhesives, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

Vol_j = Volume of thinner and/or other additive, j, used in the coating operation controlled by the solvent recovery system during the month, liters.

D_j = Density of thinner and/or other additive, j, kg per liter.

$WV_{t,j}$ = Mass fraction of volatile organic matter for thinner and/or other additive, j, kg volatile organic matter per kg thinner and/or other additive. For reactive adhesives, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

Vol_k = Volume of cleaning material, k, used in the coating operation controlled by the solvent recovery system during the month, liters.

D_k = Density of cleaning material, k, kg per liter.

$WV_{s,k}$ = Mass fraction of volatile organic matter for cleaning material, k, kg volatile organic matter per kg cleaning material.

m = Number of different coatings used in the coating operation controlled by the solvent recovery system during the month.

n = Number of different thinners and/or other additives used in the coating operation controlled by the solvent recovery system during the month.

p = Number of different cleaning materials used in the coating operation controlled by the solvent recovery system during the month.

- g. Calculate the mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system during the month, using Equation 8-15 of this section and according to paragraphs (i) through (iii) of this section:

Equation 8-15: Mass of Organic HAP emissions reduction for coating operations

$$H_{CSR} = (A_{CSR} + B_{CSR} + C_{CSR}) \left(\frac{R_V}{100} \right)$$

Where:

H_{CSR} = Mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system using a liquid-liquid material balance during the month, kg.

A_{CSR} = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 8-16 of this section.

B_{CSR} = Total mass of organic HAP in the thinners and/or other additives used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 8-17 of this section.

C_{CSR} = Total mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 8-18 of this section.

R_V = Volatile organic matter collection and recovery efficiency of the solvent recovery system, percent, from Equation 8-15 of this section.

- i. Calculate the mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, using Equation 8-16 of this section.

Equation 8-16: Mass of Organic HAP in the Coatings used in Coating Operations

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

Where:

A_{CSR} = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{c,i}$ = Total volume of coating, i, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{c,i}$ = Density of coating, i, kg per liter.

$W_{c,i}$ = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating. For reactive adhesives as defined in §63.3981, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

m = Number of different coatings used.

- ii. Calculate the mass of organic HAP in the thinners and/or other additives used in the coating operation controlled by the solvent recovery system, kg, using Equation 8-17 of this section:

Equation 8-17: Mass of Organic HAP in thinners and/or additives

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

Where:

B_{CSR} = Total mass of organic HAP in the thinners and/or other additives used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{t,j}$ = Total volume of thinner and/or other additive, j, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{t,j}$ = Density of thinner and/or other additive, j, kg per liter.

$W_{t,j}$ = Mass fraction of organic HAP in thinner and/or other additive, j, kg lb organic HAP per kg thinner and/or other additive. For reactive adhesives, use the mass fraction of organic HAP that is emitted as determined using the method in appendix A to subpart PPPP of this part.

n = Number of different thinners and/or other additives used.

- i. Calculate the mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system during the month, kg, using Equation 8-18 of this section:

Equation 8-18: Mass of organic HAP in the cleaning materials

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

Where:

C_{CSR} = Total mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{s,k}$ = Total volume of cleaning material, k, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{s,k}$ = Density of cleaning material, k, kg per liter.

$W_{s,k}$ = Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg cleaning material.

p = Number of different cleaning materials used.

10. *Calculate the total volume of coating solids used.* Determine the total volume of coating solids used, liters, which is the combined volume of coating solids for all the coatings used during each month in the coating operation or group of coating operations for which the owner or operator use the emission rate with add-on controls option, using Equation 8-7 of Permit Condition 8.17.
11. *Calculate the mass of organic HAP emissions for each month.* Determine the mass of organic HAP emissions, kg, during each month, using Equation 8-19 of this section:

Equation 8-19: Mass of organic HAP emissions for each month

$$H_{hap} = H_e - \sum_{i=1}^q (H_{c,i}) - \sum_{j=1}^r H_{CSR,j}$$

Where:

H_{HAP} = Total mass of organic HAP emissions for the month, kg.

H_e = Total mass of organic HAP emissions before add-on controls from all the coatings, thinners and/or other additives, and cleaning materials used during the month, kg, determined according to paragraph (6) of this section.

$H_{C,i}$ = Total mass of organic HAP emission reduction for controlled coating operation, i, not using a liquid-liquid material balance, during the month, kg, from Equation 1 of this section.

$H_{CSR,j}$ = Total mass of organic HAP emission reduction for coating operation, j, controlled by a solvent recovery system using a liquid-liquid material balance, during the month, kg, from Equation 8-18 of this section.

q = Number of controlled coating operations not controlled by a solvent recovery system using a liquid-liquid material balance.

r = Number of coating operations controlled by a solvent recovery system using a liquid-liquid material balance.

12. *Calculate the organic HAP emission rate for the compliance period.* Determine the organic HAP emission rate for the compliance period, kg (lb) of organic HAP emitted per liter (gal) coating solids used, using Equation 8-19 of this section:

Equation 8-19: Organic HAP emissions rate for the compliance period

$$H_{annual} = \frac{\sum_{y=1}^n H_{HAP,y}}{\sum_{y=1}^n V_{st,y}}$$

Where:

H_{annual} = Organic HAP emission rate for the compliance period, kg organic HAP emitted per liter coating solids used.

$H_{HAP,y}$ = Organic HAP emissions for month, y, kg, determined according to Equation 4 of this section.

$V_{st,y}$ = Total volume of coating solids used during month, y, liters, from Equation 2 of Permit Condition 8.18.

y = Identifier for months.

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).

13. *Compliance demonstration.* The organic HAP emission rate for the initial compliance period, calculated using Equation 8-19 of this section, must be less than or equal to the applicable emission limit for each subcategory in Permit Condition 8.4 or the

predominant activity or facility-specific emission limit allowed in Permit Condition 8.4(3). The owner or operator must keep all records as required by Permit Condition 8.12 and 8.13. As part of the notification of compliance status required by Permit Condition 8.10, the owner or operator must identify the coating operation(s) for which the owner or operator used the emission rate with add-on controls option and submit a statement that the coating operation(s) was (were) in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in Permit Condition 8.4, and the owner or operator achieved the operating limits required by Permit Condition 8.6 and the work practice standards required by Permit Condition 8.7.

8.23 Demonstrating continuous compliance with emission limits.

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3963, the owner or operator shall demonstrate continuous compliance with the applicable emission limit by accomplishing the following:

1. To demonstrate continuous compliance with the applicable emission limit in Permit Condition 8.4, the organic HAP emission rate for each compliance period, determined according to the procedures in Permit Condition 8.21, must be equal to or less than the applicable emission limit in Permit Condition 8.4. A compliance period consists of 12 months. Each month after the end of the initial compliance period described in Permit Condition 8.20 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 Permit Condition 8.21 on a monthly basis using data from the previous 12 months of operation. If the owner or operator are complying with a facility-specific emission limit under Permit Condition 8.4(3), the owner or operator must also perform the calculation using Equation 1 in Permit Condition 8.4(3)(b) on a monthly basis using the data from the previous 12 months of operation.
2. If the organic HAP emission rate for any 12-month compliance period exceeded the applicable emission limit in Permit Condition 8.4, this is a deviation from the emission limitation for that compliance period that must be reported as specified in Permit Condition 8.10(3)(f) and 8.11(1)(g).
3. The owner or operator must demonstrate continuous compliance with each operating limit required by Permit Condition 8.6 that applies to the owner or operator, as specified in Table 1 to this subpart, when the coating line is in operation.
 - a. If an operating parameter is out of the allowed range specified in Table 1 to this subpart, this is a deviation from the operating limit that must be reported as specified in Permit Condition 8.10(3)(f) and 8.11(1)(g).
 - b. If an operating parameter deviates from the operating limit specified in Table 1 to this subpart, then the owner or operator must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation, unless the owner or operator have other data indicating the actual efficiency of the emission capture system and add-on control device and the use of these data is approved by the Administrator.

4. The owner or operator must meet the requirements for bypass lines in Permit Condition 8.27(2) for controlled coating operations for which the owner or operator do not conduct liquid-liquid material balances. If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as specified in Permit Condition 8.10(3)(f) and 8.11(1)(g). For the purposes of completing the compliance calculations specified in Permit Condition 8.21(8), the owner or operator must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation as indicated in Equation 1 of Permit Condition 8.21.
5. The owner or operator must demonstrate continuous compliance with the work practice standards in Permit Condition 8.7. If the owner or operator did not develop a work practice plan, or the owner or operator did not implement the plan, or the owner or operator did not keep the records required by Permit Condition 8.12(10)(h), this is a deviation from the work practice standards that must be reported as specified in Permit Condition 8.10(3)(f) and 8.11(1)(g).
6. As part of each semiannual compliance report required in Permit Condition 8.11, the owner or operator must identify the coating operation(s) for which the owner or operator used the emission rate with add-on controls option. If there were no deviations from the emission limitations, submit a statement that the owner or operator were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in Permit Condition 8.4, and the owner or operator achieved the operating limits required by Permit Condition 8.6 and the work practice standards required by Permit Condition 8.7 during each compliance period.
7. The owner or operator must maintain records as specified in Permit Condition 8.12 and 8. 13.

8.24 General requirements for performance tests

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63. 3964:

1. The owner or operator must conduct each performance test required by Permit Condition 8.20 according to the requirements in §63.7(e)(1) and under the conditions in this section, unless the owner or operator obtain a waiver of the performance test according to the provisions in §63.7(h).
 - a. *Representative coating operation operating conditions.* The owner or operator must conduct the performance test under representative operating conditions for the coating operation. Operations during periods of startup, shutdown, or malfunction and during periods of nonoperation do not constitute representative conditions. The owner or operator must record the process information that is necessary to document operating conditions during the test and explain why the conditions represent normal operation.
 - b. *Representative emission capture system and add-on control device operating conditions.* The owner or operator must conduct the performance test when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. The owner or

- operator must record information that is necessary to document emission capture system and add-on control device operating conditions during the test and explain why the conditions represent normal operation.
2. The owner or operator must conduct each performance test of an emission capture system according to the requirements in Permit Condition 8.24. The owner or operator must conduct each performance test of an add-on control device according to the requirements in Permit Condition 8.25.

8.25 Determining emissions capture system efficiency

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3965:

The owner or operator must use the procedures and test methods in this section to determine capture efficiency as part of the performance test required by Permit Condition 8.20.

1. *Assuming 100 percent capture efficiency.* The owner or operator may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a) and (b) of this section are met:
 - a. The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.
 - b. All coatings, thinners and/or other additives, and cleaning materials used in the coating operation are applied within the capture system; coating solvent flash-off, curing, and drying occurs within the capture system; and the removal or evaporation of cleaning materials from the surfaces they are applied to occurs within the capture system. For example, this criterion is not met if parts enter the open shop environment when being moved between a spray booth and a curing oven.
2. *Measuring capture efficiency.* If the capture system does not meet both of the criteria in paragraphs (a) and (b) of this section, then the owner or operator must use one of the three protocols described in paragraphs (3), (4), and (5) of this section to measure capture efficiency. The capture efficiency measurements use TVH capture efficiency as a surrogate for organic HAP capture efficiency. For the protocols in paragraphs (3) and (4) of this section, the capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, whichever is longer, up to 8 hours. For the purposes of this test, a production run means the time required for a single part to go from the beginning to the end of the production, which includes surface preparation activities and drying and curing time.
3. *Liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure.* The liquid-to-uncaptured-gas protocol compares the mass of liquid TVH in materials used in the coating operation to the mass of TVH emissions not captured by the emission capture system. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (1) through (f) of this section to measure emission capture system efficiency using the liquid-to-uncaptured-gas protocol.
 - a. Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners and/or other additives, and cleaning materials are applied, and

all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

- b. Use Method 204A or 204F of appendix M to 40 CFR part 51 to determine the mass fraction of TVH liquid input from each coating, thinner and/or other additive, and cleaning material used in the coating operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term VOC in the methods.
- c. Use Equation 8-20 of this section to calculate the total mass of TVH liquid input from all the coatings, thinners and/or other additives, and cleaning materials used in the coating operation during each capture efficiency test run:

Equation 8-20: Total mass of TVH liquid input from all coatings

$$TVH_{used} = \sum_{i=1}^n (TVH_i)(Vol_i)(D_i)$$

Where:

TVH_{used} = Mass of liquid TVH in materials used in the coating operation during the capture efficiency test run, kg.

TVH_i = Mass fraction of TVH in coating, thinner and/or other additive, or cleaning material, i, that is used in the coating operation during the capture efficiency test run, kg TVH per kg material.

Vol_i = Total volume of coating, thinner and/or other additive, or cleaning material, i, used in the coating operation during the capture efficiency test run, liters.

D_i = Density of coating, thinner and/or other additive, or cleaning material, i, kg material per liter material.

n = Number of different coatings, thinners and/or other additives, and cleaning materials used in the coating operation during the capture efficiency test run.

- d. Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system. They are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.
 - i. Use Method 204D of appendix M to 40 CFR part 51 if the enclosure is a temporary total enclosure.
 - ii. Use Method 204E of appendix M to 40 CFR 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation

for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

- e. For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 8-21 of this section:

Equation 8-21: Capture Efficiency

$$CE = \frac{TVH_{used} - TVH_{uncaptured}}{TVH_{used}} \times 100$$

Where:

CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.

TVH_{used} = Total mass of TVH liquid input used in the coating operation during the capture efficiency test run, kg.

TVH_{uncaptured} = Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

- f. Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.
4. *Gas-to-gas protocol using a temporary total enclosure or a building enclosure.* The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system to the mass of TVH emissions not captured. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (a) through (e) of this section to measure emission capture system efficiency using the gas-to-gas protocol.
 - a. Either use a building enclosure or construct an enclosure around the coating operation where coatings, thinners and/or other additives, and cleaning materials are applied, and all areas where emissions from these applied coatings and materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the coating operation where capture devices collect emissions generated by the coating operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a spray booth, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.
 - b. Use Method 204B or 204C of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.
 - i. The sampling points for the Method 204B or 204C measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device.

- ii. If multiple emission streams from the capture system enter the add-on control device without a single common duct, then the emissions entering the add-on control device must be simultaneously measured in each duct and the total emissions entering the add-on control device must be determined.
- c. Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.
 - i. Use Method 204D of appendix M to 40 CFR part 51 if the enclosure is a temporary total enclosure.
 - ii. Use Method 204E of appendix M to 40 CFR part 51 if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound emitting operations inside the building enclosure, other than the coating operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.
- d. For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 8-22 of this section:

Equation 8-22: Percent Capture Efficiency of Emission Capture System

$$CE = \frac{TVH_{\text{captured}}}{TVH_{\text{captured}} + TVH_{\text{uncaptured}}} \times 100$$

Where:

CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.

TVH_{captured} = Total mass of TVH captured by the emission capture system as measured at the inlet to the add-on control device during the emission capture efficiency test run, kg.

TVH_{uncaptured} = Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

- e. Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.
5. *Alternative capture efficiency protocol.* As an alternative to the procedures specified in paragraphs (3) and (4) of this section and subject to the approval of the Administrator, the owner or operator may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the DQO or LCL approach as described in appendix A to subpart KK of this part.

8.26 Determining add-on control device destruction efficiency

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63. 3966:

The owner or operator must use the procedures and test methods in this section to determine the add-on control device emission destruction or removal efficiency as part of the performance test required by Permit Condition 8.20. The owner or operator must conduct three test runs and each test run must last at least 1 hour. If the source is a magnet wire coating machine, the owner or operator may use the procedures in section 3.0 of appendix A to this subpart as an alternative.

1. For all types of add-on control devices, use the test methods specified in paragraphs (a) through (e) of this section.
 - a. Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.
 - b. Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.
 - c. Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight.
 - d. Use Method 4 of appendix A to 40 CFR part 60, to determine stack gas moisture.
 - e. Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.
2. Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously, using either Method 25 or 25A of appendix A to 40 CFR part 60.
 - a. Use Method 25 if the add-on control device is an oxidizer and the owner or operator expect the total gaseous organic concentration as carbon to be more than 50 parts per million (ppm) at the control device outlet.
 - b. Use Method 25A if the add-on control device is an oxidizer and the owner or operator expect the total gaseous organic concentration as carbon to be 50 ppm or less at the control device outlet.
 - c. Use Method 25A if the add-on control device is not an oxidizer.
3. If two or more add-on control devices are used for the same emission stream, then the owner or operator must measure emissions at the outlet to the atmosphere of each device. For example, if one add-on control device is a concentrator with an outlet to the atmosphere for the high-volume dilute stream that has been treated by the concentrator, and a second add-on control device is an oxidizer with an outlet to the atmosphere for the low-volume concentrated stream that is treated with the oxidizer, the owner or operator must measure emissions at the outlet of the oxidizer and the high volume dilute stream outlet of the concentrator.
4. For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 8-23 of this section. If there is more than one inlet or outlet to the add-on control device, the owner or operator must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions:

Equation 8-23: Total gaseous organic emissions mass flow rates

$$Mf = Q_{sd}C_c(12)(0.01416)(10^{-6})$$

Where:

M_f = Total gaseous organic emissions mass flow rate, kg per hour (h).

C_c = Concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, parts per million by volume (ppmv), dry basis.

Q_{sd} = Volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters/hour (dscm/h).

0.0416 = Conversion factor for molar volume, kg-moles per cubic meter (mol/m^3) (@ 293 Kelvin (K) and 760 millimeters of mercury (mmHg)).

5. For each test run, determine the add-on control device organic emissions destruction or removal efficiency, using Equation 8-24 of this section:

Equation 8-24: Add-on control device organic emissions destruction or removal efficiency

$$DRE = \frac{M_{fi} - M_{fo}}{M_{fi}} \times 100$$

Where:

DRE = Organic emissions destruction or removal efficiency of the add-on control device, percent.

M_{fi} = Total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h.

M_{fo} = Total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

6. Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 8-24 of this section.

8.27 Establishing emission capture system and add-on control device operating limits

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3967, during the performance test required by Permit Condition 8.20 and described in Permit Condition 8.23, 8.24 and 8.25, the owner or operator must establish the operating limits required by Permit Condition 8.6 unless the owner or operator has received approval for alternative monitoring and operating limits from the Administrator.

1. *Thermal oxidizers.* If the owner or operator's add-on control device is a thermal oxidizer, establish the operating limits according to paragraphs (a) and (b) of this section.
 - a. During the performance test, the owner or operator must monitor and record the combustion temperature at least once every 15 minutes during each of the three test runs. The owner or operator must monitor the temperature in the firebox of the thermal

oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

- b. Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for the owner or operator thermal oxidizer.
2. *Catalytic oxidizers.* If the add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (a) and (b) or paragraphs (c) and (d) of this section. If the source is a magnet wire coating machine, the owner or operator may use the procedures in section 3.0 of appendix A to this subpart as an alternative.
- a. During the performance test, the owner or operator must monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.
 - b. Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. These are the minimum operating limits for the catalytic oxidizer.
 - c. The owner or operator must monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for the catalytic oxidizer as specified in paragraph (b)(4) of this section. During the performance test, the owner or operator must monitor and record the temperature just before the catalyst bed at least once every 15 minutes during each of the three test runs. Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for the catalytic oxidizer.
 - d. The owner or operator must develop and implement an inspection and maintenance plan for the catalytic oxidizer(s) for which the owner or operator elect to monitor according to paragraph (c) of this section. The plan must address, at a minimum, the elements specified in paragraphs (i) through (iii) of this section.
 - i. Annual sampling and analysis of the catalyst activity (*i.e.*, conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures. If problems are found during the catalyst activity test, the owner or operator must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations.
 - ii. Monthly external inspection of the catalytic oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures.
 - iii. Annual internal inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found during the annual internal inspection of the catalyst, the owner or operator must replace the catalyst bed or take other corrective action consistent with the manufacturer's recommendations. If the

catalyst bed is replaced and is not of like or better kind and quality as the old catalyst then the owner or operator must conduct a new performance test to determine destruction efficiency according to Permit Condition 8.25. If a catalyst bed is replaced and the replacement catalyst is of like or better kind and quality as the old catalyst, then a new performance test to determine destruction efficiency is not required and the owner or operator may continue to use the previously established operating limits for that catalytic oxidizer.

3. *Regenerative carbon adsorbers.* If the add-on control device is a regenerative carbon adsorber, establish the operating limits according to paragraphs (a) and (b) of this section.
 - a. The owner or operator must monitor and record the total regeneration desorbing gas (*e.g.*, steam or nitrogen) mass flow for each regeneration cycle, and the carbon bed temperature after each carbon bed regeneration and cooling cycle for the regeneration cycle either immediately preceding or immediately following the performance test.
 - b. The operating limits for the regenerative carbon adsorber are the minimum total desorbing gas mass flow recorded during the regeneration cycle and the maximum carbon bed temperature recorded after the cooling cycle.
4. *Condensers.* If the add-on control device is a condenser, establish the operating limits according to paragraphs (a) and (b) of this section.
 - a. During the performance test, the owner or operator must monitor and record the condenser outlet (product side) gas temperature at least once every 15 minutes during each of the three test runs.
 - b. Use the data collected during the performance test to calculate and record the average condenser outlet (product side) gas temperature maintained during the performance test. This average condenser outlet gas temperature is the maximum operating limit for your condenser.
5. *Concentrators.* If the add-on control device includes a concentrator, the owner or operator must establish operating limits for the concentrator according to paragraphs (a) through (d) of this section.
 - a. During the performance test, the owner or operator must monitor and record the desorption concentrate stream gas temperature at least once every 15 minutes during each of the three runs of the performance test.
 - b. Use the data collected during the performance test to calculate and record the average temperature. This is the minimum operating limit for the desorption concentrate gas stream temperature.
 - c. During the performance test, the owner or operator must monitor and record the pressure drop of the dilute stream across the concentrator at least once every 15 minutes during each of the three runs of the performance test.
 - d. Use the data collected during the performance test to calculate and record the average pressure drop. This is the minimum operating limit for the dilute stream across the concentrator.

6. *Emission capture systems.* For each capture device that is not part of a PTE that meets the criteria of Permit Condition 8.24 (1), establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (a) and (b) of this section. The operating limit for a PTE is specified in Table 1 to this subpart. If the source is a magnet wire coating machine, the owner or operator may use the procedures in section 2.0 of appendix A to this subpart as an alternative.
 - a. During the capture efficiency determination required by Permit Condition 8.20 and described in Permit Condition 8.23 and Permit Condition 8.24, the owner or operator must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in the emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the
 - b. Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.

8.28 Continuous parameter monitoring system installation, operation and maintenance requirements

In accordance with ARSD 74:36:08:37 as referenced to 40 CFR § 63.3968:

1. *General.* The owner or operator must install, operate, and maintain each CPMS specified in paragraphs (3), (5), (6), and (7) of this section according to paragraphs (a) through (f) of this section. The owner or operator must install, operate, and maintain each CPMS specified in paragraphs (2) and (4) of this section according to paragraphs (c) through (e) of this section.
 - a. The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. The owner or operator must have a minimum of four equally spaced successive cycles of CPMS operation in 1 hour.
 - b. The owner or operator must determine the average of all recorded readings for each successive 3-hour period of the emission capture system and add-on control device operation.
 - c. The owner or operator must record the results of each inspection, calibration, and validation check of the CPMS.
 - d. The owner or operator must maintain the CPMS at all times and have available necessary parts for routine repairs of the monitoring equipment.
 - e. The owner or operator must operate the CPMS and collect emission capture system and add-on control device parameter data at all times that a controlled coating operation is operating, except during monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, if applicable, calibration checks and required zero and span adjustments).
 - f. The owner or operator must not use emission capture system or add-on control device parameter data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities when calculating data averages. The owner or operator must use all the data collected during all other periods in

calculating the data averages for determining compliance with the emission capture system and add-on control device operating limits.

- g. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the CPMS to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for required calculations is a deviation from the monitoring requirements.
2. *Capture system bypass line.* The owner or operator must meet the requirements of paragraphs (a) and (b) of this section for each emission capture system that contains bypass lines that could divert emissions away from the add-on control device to the atmosphere.
- a. The owner or operator must monitor or secure the valve or closure mechanism controlling the bypass line in a nondiverting position in such a way that the valve or closure mechanism cannot be opened without creating a record that the valve was opened. The method used to monitor or secure the valve or closure mechanism must meet one of the requirements specified in paragraphs (i) through (v) of this section.
 - i. *Flow control position indicator.* Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow control position indicator that takes a reading at least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. The time of occurrence and flow control position must be recorded, as well as every time the flow direction is changed. The flow control position indicator must be installed at the entrance to any bypass line that could divert the emissions away from the add-on control device to the atmosphere.
 - ii. *Car-seal or lock-and-key valve closures.* Secure any bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. The owner or operator must visually inspect the seal or closure mechanism at least once every month to ensure that the valve is maintained in the closed position, and the emissions are not diverted away from the add-on control device to the atmosphere.
 - iii. *Valve closure monitoring.* Ensure that any bypass line valve is in the closed (nondiverting) position through monitoring of valve position at least once every 15 minutes. The owner or operator must inspect the monitoring system at least once every month to verify that the monitor will indicate valve position.
 - iv. *Automatic shutdown system.* Use an automatic shutdown system in which the coating operation is stopped when flow is diverted by the bypass line away from the add-on control device to the atmosphere when the coating operation is running. The owner or operator must inspect the automatic shutdown system at least once every month to verify that it will detect diversions of flow and shut down the coating operation.
 - v. *Flow direction indicator.* Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow direction indicator that takes a reading at

least once every 15 minutes and provides a record indicating whether the emissions are directed to the add-on control device or diverted from the add-on control device. Each time the flow direction changes, the next reading of the time of occurrence and flow direction must be recorded. The flow direction indicator must be installed in each bypass line or air makeup supply line that could divert the emissions away from the add-on control device to the atmosphere.

2. If any bypass line is opened, the owner or operator must include a description of why the bypass line was opened and the length of time it remained open in the semiannual compliance reports required in Permit Condition 8.11.
3. *Thermal oxidizers and catalytic oxidizers.* If the owner or operator are using a thermal oxidizer or catalytic oxidizer as an add-on control device (including those used with concentrators or with carbon adsorbers to treat desorbed concentrate streams), the owner or operator must comply with the requirements in paragraphs (a) through (c) of this section:
 - a. For a thermal oxidizer, install a gas temperature monitor in the firebox of the thermal oxidizer or in the duct immediately downstream of the firebox before any substantial heat exchange occurs.
 - b. For a catalytic oxidizer, install gas temperature monitors upstream and/or downstream of the catalyst bed as required in Permit Condition 8.26 (b).
 - c. For all thermal oxidizers and catalytic oxidizers, the owner or operator must meet the requirements in paragraphs (1) and (i) through (v) of this section for each gas temperature monitoring device.
 - i. Locate the temperature sensor in a position that provides a representative temperature.
 - ii. Use a temperature sensor with a measurement sensitivity of 5 degrees Fahrenheit or 1.0 percent of the temperature value, whichever is larger.
 - iii. Before using the sensor for the first time or when relocating or replacing the sensor, perform a validation check by comparing the sensor output to a calibrated temperature measurement device or by comparing the sensor output to a simulated temperature.
 - iv. Conduct an accuracy audit every quarter and after every deviation. Accuracy audit methods include comparisons of sensor output to redundant temperature sensors, to calibrated temperature measurement devices, or to temperature simulation devices.
 - v. Conduct a visual inspection of each sensor every quarter if redundant temperature sensors are not used.
4. *Regenerative carbon adsorbers.* If the owner or operator are using a regenerative carbon adsorber as an add-on control device, the owner or operator must monitor the total regeneration desorbing gas (*e.g.*, steam or nitrogen) mass flow for each regeneration cycle, the carbon bed temperature after each regeneration and cooling cycle, and comply with paragraphs (1)(c) through (e) and (a) through (c) of this section.

- a. The regeneration desorbing gas mass flow monitor must be an integrating device having a measurement sensitivity of plus or minus 10 percent capable of recording the total regeneration desorbing gas mass flow for each regeneration cycle.
 - b. The carbon bed temperature monitor must be capable of recording the temperature within 15 minutes of completing any carbon bed cooling cycle.
 - c. For all regenerative carbon adsorbers, the owner or operator must meet the requirements in paragraphs (3)(c)(i) through (v) of this section for each temperature monitoring device.
5. *Condensers.* If the owner or operator are using a condenser, the owner or operator must monitor the condenser outlet (product side) gas temperature and comply with paragraphs (1) and (5)(a) and (b) of this section.
- a. The temperature monitor must provide a gas temperature record at least once every 15 minutes.
 - b. For all condensers, the owner or operator must meet the requirements in paragraphs (3)(c)(i) through (v) of this section for each temperature monitoring device.
6. *Concentrators.* If the owner or operator are using a concentrator, such as a zeolite wheel or rotary carbon bed concentrator, the owner or operator must comply with the requirements in paragraphs (a) and (b) of this section.
- a. The owner or operator must install a temperature monitor in the desorption gas stream. The temperature monitor must meet the requirements in paragraphs (a) and (c)(3) of this section.
 - b. The owner or operator must install a device to monitor pressure drop across the zeolite wheel or rotary carbon bed. The pressure monitoring device must meet the requirements in paragraphs (1) and (7)(b) of this section.
7. *Emission capture systems.* The capture system monitoring system must comply with the applicable requirements in paragraphs (a) and (b) of this section. If the source is a magnet wire coating machine, the owner or operator may use the procedures in section 2.0 of appendix A to this subpart as an alternative.
- a. For each flow measurement device, the owner or operator must meet the requirements in paragraphs (1) and (7)(a)(i) through (vii) of this section.
 - i. Locate a flow sensor in a position that provides a representative flow measurement in the duct from each capture device in the emission capture system to the add-on control device.
 - ii. Use a flow sensor with an accuracy of at least 10 percent of the flow.
 - iii. Perform an initial sensor calibration in accordance with the manufacturer's requirements.
 - iv. Perform a validation check before initial use or upon relocation or replacement of a sensor. Validation checks include comparison of sensor values with electronic signal simulations or via relative accuracy testing.
 - v. Conduct an accuracy audit every quarter and after every deviation. Accuracy audit methods include comparisons of sensor values with electronic signal simulations or via relative accuracy testing.

- vi. Perform leak checks monthly.
 - vii. Perform visual inspections of the sensor system quarterly if there is no redundant sensor.
- b. For each pressure drop measurement device, the owner or operator must comply with the requirements in paragraphs (1) and (7)(b)(i) through (vii) of this section.
- i. Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure drop across each opening the owner or operator are monitoring.
 - ii. Use a pressure sensor with an accuracy of at least 0.5 inches of water column or 5 percent of the measured value, whichever is larger.
 - iii. Perform an initial calibration of the sensor according to the manufacturer's requirements.
 - iv. Conduct a validation check before initial operation or upon relocation or replacement of a sensor. Validation checks include comparison of sensor values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources.
 - v. Conduct accuracy audits every quarter and after every deviation. Accuracy audits include comparison of sensor values to calibrated pressure measurement devices or to pressure simulation using calibrated pressure sources.
 - vi. Perform monthly leak checks on pressure connections. A pressure of at least 1.0 inches of water column to the connection must yield a stable sensor result for at least 15 seconds.
 - vii. Perform a visual inspection of the sensor at least monthly if there is no redundant sensor.

Table 8-2 to Subpart MMMM of Part 63—Applicability of General Provisions to Subpart MMMM of Part 63

The owner or operator must comply with the applicable General Provisions requirements according to the following table:

Citation	Subject	Applicable to subpart MMMM	Explanation
§63.1(a)(1)–(14)	General Applicability	Yes	
§63.1(b)(1)–(3)	Initial Applicability Determination	Yes	Applicability to subpart MMMM is also specified in §63.3881.
§63.1(c)(1)	Applicability After Standard Established	Yes	
§63.1(c)(2)–(3)	Applicability of Permit Program for Area Sources	No	Area sources are not subject to subpart MMMM.

§63.1(c)(4)–(5)	Extensions and Notifications	Yes	
§63.1(e)	Applicability of Permit Program Before Relevant Standard is Set	Yes	
§63.2	Definitions	Yes	Additional definitions are specified in §63.3981.
§63.1(a)–(c)	Units and Abbreviations	Yes	
§63.4(a)(1)–(5)	Prohibited Activities	Yes	
§63.4(b)–(c)	Circumvention/Severability	Yes	
§63.5(a)	Construction/Reconstruction	Yes	
§63.5(b)(1)–(6)	Requirements for Existing Newly Constructed, and Reconstructed Sources	Yes	
§63.5(d)	Application for Approval of Construction/Reconstruction	Yes	
§63.5(e)	Approval of Construction/Reconstruction	Yes	
§63.5(f)	Approval of Construction/Reconstruction Based on Prior State Review	Yes	
§63.6(a)	Compliance With Standards and Maintenance Requirements—Applicability	Yes	
§63.6(b)(1)–(7)	Compliance Dates for New and Reconstructed Sources	Yes	Section 63.3883 specifies the compliance dates.
§63.6(c)(1)–(5)	Compliance Dates for Existing Sources	Yes	Section 63.3883 specifies the compliance dates.
§63.6(e)(1)–(2)	Operation and Maintenance	Yes	
§63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	Yes	Only sources using an add-on control device to comply with the standard must complete startup, shutdown, and malfunction plans.

§63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction	Yes	Applies only to sources using an add-on control device to comply with the standard.
§63.6(f)(2)–(3)	Methods for Determining Compliance.	Yes	
§63.6(g)(1)–(3)	Use of an Alternative Standard	Yes	
§63.6(h)	Compliance With Opacity/Visible Emission Standards	No	Subpart M MMM does not establish opacity standards and does not require continuous opacity monitoring systems (COMS).
§63.6(i)(1)–(16)	Extension of Compliance	Yes	
§63.6(j)	Presidential Compliance Exemption	Yes	
§63.7(a)(1)	Performance Test Requirements—Applicability	Yes	Applies to all affected sources. Additional requirements for performance testing are specified in Permit Condition 8.23, 8. 24, and Permit Condition 8.25.
§63.7(a)(2)	Performance Test Requirements—Dates	Yes	Applies only to performance tests for capture system and control device efficiency at sources using these to comply with the standard. Section 63.3960 specifies the schedule for performance test requirements that are earlier than those specified in §63.7(a)(2).
§63.7(a)(3)	Performance Tests Required By the Administrator	Yes	
§63.7(b)–(e)	Performance Test Requirements—Notification, Quality Assurance, Facilities Necessary for Safe Testing, Conditions During Test	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standard.
§63.7(f)	Performance Test Requirements—Use of Alternative Test Method	Yes	Applies to all test methods except those used to determine capture system efficiency.

§63.7(g)–(h)	Performance Test Requirements— Data Analysis, Recordkeeping, Reporting, Waiver of Test	Yes	Applies only to performance tests for capture system and add-on control device efficiency at sources using these to comply with the standard.
§63.8(a)(1)– (3)	Monitoring Requirements— Applicability	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standard. Additional requirements for monitoring are specified in Permit Condition 8.27.
§63.8(a)(4)	Additional Monitoring Requirements	No	Subpart MMMM does not have monitoring requirements for flares.
§63.8(b)	Conduct of Monitoring	Yes	
§63.8(c)(1)– (3)	Continuous Monitoring Systems (CMS) Operation and Maintenance	Yes	Applies only to monitoring of capture system and add-on control device efficiency at sources using these to comply with the standard. Additional requirements for CMS operations and maintenance are specified in Permit Condition 8.27.
§63.8(c)(4)	CMS	No	Permit Condition 8.27 specifies the requirements for the operation of CMS for capture systems and add-on control devices at sources using these to comply.
§63.8(c)(5)	COMS	No	Subpart MMMM does not have opacity or visible emission standards.
§63.8(c)(6)	CMS Requirements	No	Section Permit Condition 8.27 specifies the requirements for monitoring systems for capture systems and add-on control devices at sources using these to comply.

§63.8(c)(7)	CMS Out-of-Control Periods	Yes	
§63.8(c)(8)	CMS Out-of-Control Periods and Reporting	No	§63.3920 requires reporting of CMS out-of-control periods.
§63.8(d)–(e)	Quality Control Program and CMS Performance Evaluation	No	Subpart M MMM does not require the use of continuous emissions monitoring systems.
§63.8(f)(1)–(5)	Use of an Alternative Monitoring Method	Yes	
§63.8(f)(6)	Alternative to Relative Accuracy Test	No	Subpart M MMM does not require the use of continuous emissions monitoring systems.
§63.8(g)(1)–(5)	Data Reduction	No	Sections 63.3967 and Permit Condition 8.27 specify monitoring data reduction.
§63.9(a)–(d)	Notification Requirements	Yes	
§63.9(e)	Notification of Performance Test	Yes	Applies only to capture system and add-on control device performance tests at sources using these to comply with the standard.
§63.9(f)	Notification of Visible Emissions/Opacity Test	No	Subpart M MMM does not have opacity or visible emissions standards.
§63.9(g)(1)–(3)	Additional Notifications When Using CMS	No	Subpart M MMM does not require the use of continuous emissions monitoring systems.
§63.9(h)	Notification of Compliance Status	Yes	Section 63.3910 specifies the dates for submitting the notification of compliance status.
§63.9(i)	Adjustment of Submittal Deadlines	Yes	
§63.9(j)	Change in Previous Information	Yes	
§63.10(a)	Recordkeeping/Reporting—Applicability and General Information	Yes	
§63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in Permit Condition 8.12 and 8.13.

§63.10(b)(2)(i)–(v)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS	Yes	Requirements for startup, shutdown, and malfunction records only apply to add-on control devices used to comply with the standard.
§63.10(b)(2)(vi)–(xi)		Yes	
§63.10(b)(2)(xii)	Records	Yes	
§63.10(b)(2)(xiii)		No	Subpart M MMM does not require the use of continuous emissions monitoring systems.
§63.10(b)(2)(xiv)		Yes	
§63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations	Yes	
§63.10(c)(1)–(6)	Additional Recordkeeping Requirements for Sources with CMS	Yes	
§63.10(c)(7)–(8)		No	The same records are required in §63.3920(a)(7).
§63.10(c)(9)–(15)		Yes	
§63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in §63.3920.
§63.10(d)(2)	Report of Performance Test Results	Yes	Additional requirements are specified in §63.3920(b).
§63.10(d)(3)	Reporting Opacity or Visible Emissions Observations	No	Subpart M MMM does not require opacity or visible emissions observations.
§63.10(d)(4)	Progress Reports for Sources With Compliance Extensions	Yes	
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	Yes	Applies only to add-on control devices at sources using these to comply with the standard.
§63.10(e)(1)–(2)	Additional CMS Reports	No	Subpart M MMM does not require the use of continuous

			emissions monitoring systems.
§63.10(e) (3)	Excess Emissions/CMS Performance Reports	No	Section 63.3920 (b) specifies the contents of periodic compliance reports.
§63.10(e) (4)	COMS Data Reports	No	Subpart M MMMM does not specify requirements for opacity or COMS.
§63.10(f)	Recordkeeping/Reporting Waiver	Yes	
§63.11	Control Device Requirements/Flares	No	Subpart M MMMM does not specify use of flares for compliance.
§63.12	State Authority and Delegations	Yes	
§63.13	Addresses	Yes	
§63.14	Incorporation by Reference	Yes	
§63.15	Availability of Information/Confidentiality	Yes	

Table 8-3 to Subpart M MMMM of Part 63—Default Organic HAP Mass Fraction for Solvents and Solvent Blends

The owner or operator may use the mass fraction values in the following table for solvent blends for which the owner or operator do not have test data or manufacturer's formulation data and which match either the solvent blend name or the chemical abstract series (CAS) number. If a solvent blend matches both the name and CAS number for an entry, that entry's organic HAP mass fraction must be used for that solvent blend. Otherwise, use the organic HAP mass fraction for the entry matching either the solvent blend name or CAS number, or use the organic HAP mass fraction from table 4 to this subpart if neither the name or CAS number match.

Solvent/solvent blend	CAS. No.	Average organic HAP mass fraction	Typical organic HAP, percent by mass
1. Toluene	108-88-3	1.0	Toluene.
2. Xylene(s)	1330-20-7	1.0	Xylenes, ethylbenzene.
3. Hexane	110-54-3	0.5	n-hexane.
4. n-Hexane	110-54-3	1.0	n-hexane.
5. Ethylbenzene	100-41-4	1.0	Ethylbenzene.
6. Aliphatic 140		0	None.

7. Aromatic 100		0.02	1% xylene, 1% cumene.
8. Aromatic 150		0.09	Naphthalene.
9. Aromatic naphtha	64742– 95–6	0.02	1% xylene, 1% cumene.
10. Aromatic solvent	64742– 94–5	0.1	Naphthalene.
11. Exempt mineral spirits	8032–32– 4	0	None.
12. Ligroines (VM & P)	8032–32– 4	0	None.
13. Lactol spirits	64742– 89–6	0.15	Toluene.
14. Low aromatic white spirit	64742– 82–1	0	None.
15. Mineral spirits	64742– 88–7	0.01	Xylenes.
16. Hydrotreated naphtha	64742– 48–9	0	None.
17. Hydrotreated light distillate	64742– 47–8	0.001	Toluene.
18. Stoddard solvent	8052–41– 3	0.01	Xylenes.
19. Super high-flash naphtha	64742– 95–6	0.05	Xylenes.
20. Varsol [®] solvent	8052–49– 3	0.01	0.5% xylenes, 0.5% ethylbenzene.
21. VM & P naphtha	64742– 89–8	0.06	3% toluene, 3% xylene.
22. Petroleum distillate mixture	68477– 31–6	0.08	4% naphthalene, 4% biphenyl.

Table 8-4 to Subpart MMMM of Part 63—Default Organic HAP Mass Fraction for Petroleum Solvent Groups^a

The owner or operator may use the mass fraction values in the following table for solvent blends for which the owner or operator do not have test data or manufacturer's formulation data.

Solvent type	Average organic HAP mass fraction	Typical organic HAP, percent by mass
Aliphatic ^b	0.03	1% Xylene, 1% Toluene, and 1% Ethylbenzene.
Aromatic ^c	0.06	4% Xylene, 1% Toluene, and 1% Ethylbenzene.

^aUse this table only if the solvent blend does not match any of the solvent blends in Table 3 to this subpart by either solvent blend name or CAS number and the owner or operator only know whether the blend is aliphatic or aromatic.

^bMineral Spirits 135, Mineral Spirits 150 EC, Naphtha, Mixed Hydrocarbon, Aliphatic Hydrocarbon, Aliphatic Naphtha, Naphthol Spirits, Petroleum Spirits, Petroleum Oil, Petroleum Naphtha, Solvent Naphtha, Solvent Blend.

^cMedium-flash Naphtha, High-flash Naphtha, Aromatic Naphtha, Light Aromatic Naphtha, Light Aromatic Hydrocarbons, Aromatic Hydrocarbons, Light Aromatic Solvent.

9.0 MACT Requirements – Subpart DDDDD

9.1 Date to comply

In accordance with ARSD 74:36:08:41, as referenced in 40 CFR §63.7495(b), the owner or operator shall comply with the requirements in this chapter by no later than January 31, 2016.

9.2 Notification of compliance status

In accordance with ARSD 74:36:08:41, as referenced in 40 CFR §§63.7530(d) and 63.9(h), the owner or operator shall submit a notification of compliance status no later than March 31, 2016. The notification of compliance status report shall contain the following:

1. Name of the facility;
2. A signed statement that indicates the owner or operator conducted a tune-up of Unit #3;
3. A signed certification that the energy assessment was completed and is an accurate depiction of Unit #3 at the time of the assessment.

9.3 One-time energy assessment

In accordance with ARSD 74:36:08:41, as referenced in 40 CFR §§63.7500 and 63.7575, the owner or operator shall conduct a one-time energy assessment on Unit #3. The one-time energy assessment shall be performed by a qualified energy assessor and include the following:

1. A visual inspection of Unit #3;
2. An evaluation of operating characteristics of Unit #3, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints;

3. An inventory of major energy use systems consuming energy from Unit #3 and which are under the control of the owner or operator of Unit #3;
4. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage;
5. A review of the owner's or operator's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified;
6. A list of cost-effective energy conservation measures that are within the owner's or operator's control;
7. A list of the energy savings potential of the energy conservation measures identified; and
8. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

If Unit #3 is operated under an energy management program compatible with ISO 50001 satisfies the one-time energy assessment requirement. The one-time energy assessment shall consist of 8 on-site technical labor hours in length maximum, unless otherwise determined by the Secretary. Unit #3 and any on-site energy use system(s) accounting for at least 50 percent of Unit #3 energy shall be evaluated to identify energy savings opportunities during the one-time energy assessment.

9.4 Biennial tune-up

In accordance with ARSD 74:36:08:41, as referenced in 40 CFR §§63.7500 and 63.7540, the owner or operator shall conduct a biennial tune-up of Unit #3. The biennial tune-up shall meet the following specifications:

1. As applicable, inspect the burner, and clean or replace any components of the burner as necessary. The owner or operator may delay the burner inspection until the next scheduled shutdown. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The owner or operator may delay the inspection until the next scheduled unit shutdown;
4. Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject;
5. Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made. Measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made. Measurements may be taken using a portable carbon monoxide analyzer; and

6. Maintain on-site and submit, if requested by the Secretary, an annual report containing the following information:
 - a. The concentrations of carbon monoxide in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; and
 - b. A description of any corrective actions taken as a part of the tune-up.

If Unit #3 is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. Each biennial tune-up shall be conducted no more than 25 months after the previous tune-up.

9.5 Biennial report

In accordance with ARSD 74:36:08:41, as referenced to 40 CFR §7550, the owner or operator shall submit a biennial tune-up compliance report. The biennial tune-up compliance report should contain the following information:

1. Company name and address;
2. Process unit information, emissions limitations, and operating parameter limitations;
3. Date of report and beginning and ending dates of the reporting period;
4. The total operating time during the reporting period; and
5. The date of the most recent Unit #3 tune-up.

The first tune-up compliance report shall cover the period beginning on the compliance date and ending December 31. The report shall be postmarked no later than January 31. Each subsequent report and postmark date shall be biennially after the dates noted above.

9.6 Recordkeeping for Unit #3

In accordance with ARSD 74:36:08:41, as referenced to 40 CFR §§63.7555(a)(1) and 63.7560, the owner or operator shall maintain records of each notification, report, and supporting documentation required by this chapter. All records shall be in a form suitable and readily available for expeditious review and maintained for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Each record shall be maintained on site, or accessible from on site, for at least 2 years. Records may be maintained off site for the remaining 3 years.