**State of North Carolina**

**Department of Environmental Quality**

**Division of Air Quality**

**Air Permits Section**

**INSTRUCTIONS**

**APPLICATION FOR AIR QUALITY PERMIT**

**TO**

**CONSTRUCT AND OPERATE**

****

**AIR QUALITY PERMIT APPLICATION INSTRUCTIONS**

|  |  |
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**INTRODUCTION**

The following are detailed instructions to assist you in completing your application for an air quality permit to construct and operate an emissions source(s) and/or control device(s).

The application forms are comprehensive and designed to cover most facilities. Industry-specific air permit application forms are available as indicated in the application. A typical application will only require the completion of five (5) or six (6) pages. Because the application is not ideally suited for every conceivable operation, applicants are encouraged to submit additional information as attachments to the forms when needed to complete the application and provide adequate explanation of the operations.

Application forms are available on the Division’s webpage at the following URL:

<https://deq.nc.gov/about/divisions/air-quality/air-quality-permits/application-forms-instructions/application-forms-air-quality-permit-construct-operate-non-title-v-title-v-facilities>

Applications must be submitted in hardcopy format only. Applications which are altered in any significant manner will not be accepted.

If you have any questions, please contact the Division of Air Quality, Air Permitting Section, at (919) 707-8738, the appropriate Regional Office listed on the page following the general instructions, or the Department of Environmental Assistance and Customer Service at 1-(877)-623-6748. Identify your inquiry as pertaining to an air permit application.

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**GENERAL INSTRUCTIONS AND APPLICATION FORMS REQUIRED**

1. Application forms are for Title V and non-Title V facilities (A Title V facility is defined on Pages 11-13.) See the listing of Air Permit Application Forms in the Table of Contents above. Review the following Application Matrix to determine which application forms are required for your particular application type and facility classification.

**“X”** Indicates required form

**“XX”** Indicates required only as appropriate

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SMALL/SYNTHETIC MINOR FACILITIES** | | | | | | | | | | | | | | | | | | | | | | | |
|  | **A** | **AA1** | **AA2** | **AA3** | **AA4** | **AA5** | **A2** | **A3** | **B Forms** | **C Forms** | **D1** | **D2** | **D2A** | **D3** | **D4** | **D5** | **D6** | **E1** | **E2** | **E3** | **E4** | **E5** | **E6** |
| Name Change | **X** |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ownership Change | **X** |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Administrative Amendment | **X** |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| New Facility/Unpermitted/Greenfield | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  |  |  |  |  |  |  |
| Modified Existing Facility | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  |  |  |  |  |  |  |
| Renewal With Modification | **X** |  |  |  |  |  | **X** | **X** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  |  |  |  |  |  |  |
| Renewal Without Modification | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Modeling by DAQ |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |
| Modeling by Applicant |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** |  |  |  |  |  |  |
| **TITLE V FACILITIES** | | | | | | | | | | | | | | | | | | | | | | | |
|  | **A** | **AA1** | **AA2** | **AA3** | **AA4** | **AA5** | **A2** | **A3** | **B**  **Forms** | **C**  **Forms** | **D1** | **D2** | **D2A** | **D3** | **D4** | **D5** | **D6** | **E1** | **E2** | **E3** | **E4** | **E5** | **E6** |
| Name Change | **X** |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ownership Change | **X** |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Administrative Amendment | **X** |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| New Facility/Unpermitted/Greenfield | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** |
| “Minor Modification” | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** |  |
| “Minor Modification” Prior to Permit Revision | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **\*** |  | **\*** | **XX** | **X** |  | **X** | **X** |  |  | **X** |  |
| Significant Modification | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** | **XX** |
| Renewal With Modification | **X** |  | **X** |  |  |  | **X** | **X** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** |
| Renewal Without Modification | **X** |  | **X** |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |
| 112(g) “Case by Case MACT” | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** |  |
| Prevention of Significant Deterioration | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** | **XX** |
| Expedited | **X** |  |  |  |  |  | **X** | **XX** | **XX** | **XX** | **X** | **XX** | **XX** | **XX** | **XX** | **X** |  | **X** | **X** | **X** | **X** | **X** | **XX** |
| Modeling by DAQ |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |
| Modeling by Applicant |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** |  |  |  |  |  |  |

\*If netting or modeling is required, the permit must be revised prior to modification

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1. Please print or type only.
2. The following information should be submitted, as appropriate, with each application or the application may be returned as incomplete:
3. A permit application processing fee - see the following web link for current fees: <https://deq.nc.gov/about/divisions/air-quality/air-quality-permitting/modifying-or-applying-air-quality-permit>
4. A Zoning Consistency Determination – see the following web link for additional information:

<https://deq.nc.gov/about/divisions/environmental-assistance-customer-service/deacs-permit-guidance/small-business-environmental-assistance/permit-information/zoning-consistency-determination>

1. The appropriate number of copies of the application (see item 6 below.)
2. The signature of the Responsible Official or Authorized Contact – please use Blue Ink (see item 7 below.
3. A financial qualification or substantial compliance statement (if required.)
4. Submit the following number of copies of the application and other supporting data:
5. Non-Title V Facilities:
6. One (1) copy for applications that do not require modeling or BACT Analysis.
7. Two (2) copies for applications that require modeling.
8. Three (3) copies for applications that require modeling and BACT Analysis.
9. Title V Facilities:
10. Six (6) copies for facilities subject to the requirements of 15A NCAC 02D .0530 (Prevention of Significant Deterioration), 15A NCAC 02D .0531 (Facilities in Non-Attainment Areas), or 15A NCAC 02D .1200 (Incinerators).
11. Three (3) copies for all other Title V applications.

Applications should be mailed to either the Raleigh Central Office Permits Section or the appropriate Regional Office (see the listing of addresses in the table below.)

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|  |  |
| --- | --- |
| **Raleigh Central Office**  NCDEQ – Division of Air Quality  Permitting Section  1641 Mail Service Center  Raleigh, NC 27609-1641  919-707-8738 | **Asheville Regional Office**  2090 U.S. Highway 70 Swannanoa, NC 28778 828-296-4500  FAX 828-299-7043 |
| **Fayetteville Regional Office**  Systel Building, 225 Green St., Suite 714  Fayetteville, NC 28301-5094 910-433-3300  FAX 910-486-0707 | **Mooresville Regional Office**  610 East Center Ave. Mooresville, NC 28115  704-663-1699  FAX 704-663-6040 |
| **Raleigh Regional Office**  3800 Barrett Drive  Raleigh, NC 27609 919-791-4200 FAX 919-571-4718 | **Washington Regional Office**  943 Washington Square Mall  Washington, NC 27889  252-946-6481  FAX 252-975-3716 |
| **Wilmington Regional Office**  127 Cardinal Drive Extension Wilmington, NC 28405  910-796-7215 FAX 910-350-2004 | **Winston-Salem Regional Office**  450 West Hanes Mill Road, Suite 300  Winston-Salem, NC 27105 336-776-9800  FAX 336-776-9797 |

1. Note that because the application is not ideally suited for every conceivable operation, applicants are encouraged to submit additional information when needed to complete the application and provide adequate explanation of the operations.

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**FORM A**

**GENERAL FACILITY INFORMATION**

Form A contains the general information on the facility submitting an Air Permit application. One Form A is to be completed for each Air Permit application. Form A requires general information about the facility and the signature of the Authorized Contact for the facility.

Form A is required with the submittal of an Air Permit Application for the following:

1. New Non-permitted Facility/Greenfield;
2. Renewal of the permit;
3. Renewal of the permit with modification;
4. Modification of the permit;
5. Name Change for the facility;
6. Ownership Change;
7. Administrative Amendment of the permit.

The purpose of administrative Air Permit applications is for revisions of existing Air Permits that do not involve the addition, modification, or deletion of emission sources or the addition, relaxation, or removal of monitoring, record keeping, or reporting requirements. An example of an administrative amendment application would be an application to correct a permit that contains typographical errors.

**GENERAL INFORMATION** – Please fill in all of these blocks of information

**LEGAL CORPORATE/OWNER NAME** – The full business (legal entity) name of the facility as registered with the North Carolina Secretary of State’s Office.

**SITE NAME** – If the facility operates under a different name than the Legal Corporate/Owner Name, enter it in this space.

**SITE ADDRESS (911 ADDRESS)** – The physical location address of the facility, as assigned under the 911 emergency system, including City, County, State, and Zip Code. This is the location where DAQ would go to inspect the equipment.

**CONTACT INFORMATION**

**PERMIT/TECHNICAL CONTACT PERSON** – This is the person at the facility who can be contacted for information concerning technical information required for Air Permit applications, emissions inventories, etc. for the facility.

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**FACILITY/INSPECTION CONTACT PERSON** – This is the person at the facility who is to be contacted for information concerning the facility. This is the person with whom DAQ would normally meet at the facility for an inspection.

**RESPONSIBLE OFFICIAL/AUTHORIZED CONTACT** – For Non-Title V facilities, the person at the facility applying for a permit, preferably an officer or company official. For Title V facilities, the Responsible Official, as defined by 40 CFR Part 70.2, for the facility applying for a permit.

**INVOICE CONTACT** – The person with the company who is to be contacted regarding the payment of annual permit fee invoices for the facility.

**APPLICATION IS BEING MADE FOR** – [Note: (TV) indicates applicability to Title V Facilities only] - mark the appropriate check box to indicate the purpose of this application

**NEW NON-PERMITTED FACILITY/GREENFIELD** - Application is being made for construction and operation of a new plant site (Greenfield facility) for which no Air Quality Permit has been issued.

**MODIFICATION OF FACILITY** - Application is being made for construction and operation of a new emission source(s) or a new emission control(s) at an existing permitted facility, or construction and operation which modifies an existing source(s) or an existing emission control(s) at an existing permitted facility.

**RENEWAL (TITLE V)** – Applies to Title V facilities only. Renewals are processed in accordance with Title 15A NCAC 2Q .0513. These processes should be reviewed by the applicant prior to preparing an application. Title V permit expiration will terminate the facility’s right to operate unless a complete renewal application has been submitted at least nine months before the date of permit expiration.

**RENEWAL (NON-TITLE V)** – Application is being made for the renewal of the permit for a facility that is classified as General, Small, Prohibitory Small, or Synthetic Minor (Non-Title V). Applications for the renewal of Non-Title V permits must be submitted at least 90 days prior to the expiration date for the existing Non-Title V permit.

**NAME CHANGE** – Applies to Non-Title V and Title V facilities that are changing the name of the facility and/or company, but are not changing the ownership of the facility and/or company.

**OWNERSHIP CHANGE** – Applies to Non-Title V and Title V facilities that are changing the name of the facility and/or company and are also changing the ownership of the facility and/or company.

**ADMINISTRATIVE AMENDMENT** – Applies to Non-Title V and Title V facilities who are applying to make any other types of changes to their existing Air Permit that do not involve the addition, modification, or deletion of emission sources or the addition, relaxation, or removal of monitoring, record keeping, or reporting requirements.

**RENEWAL WITH MODIFICATION** – Application is being made for renewal of the current Air Quality Permit, and modification of the facility is also being requested.

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**FACILITY CLASSIFICATION AFTER APPLICATION** – Mark the appropriate check box to indicate the facility’s current classification as follows:

**TITLE V-** A facility is subject to the Title V permitting procedures if the facility falls into any of the categories described below. Note that Title V applicability is based on a facility's potential emissions.

Potential emissions, as defined in Title 15A NCAC 2Q .0103(22), "means the rate of any air pollutant which would occur at the facility's maximum capacity to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a facility to emit an air pollutant shall be treated as a part of its design if the limitation is federally enforceable. Such physical or operational limitations include air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed. Potential emissions include fugitive emissions as specified in the definition of major source in 40 CFR 70.2. Potential emissions do not include a facility's secondary emissions such as those from motor vehicles associated with the facility and do not include emissions from insignificant activities listed in [Title 15A NCAC 2Q .0102(b)(1)]." In determining a facility's potential emissions, two parameters (uncontrolled emissions rate and control efficiency) must be measured, calculated, or estimated:

1. Uncontrolled Emissions Rate - the worst case uncontrolled emissions rate, which is based on the dirtiest fuels, the materials which produce the maximum emissions, and the maximum operating conditions that the facility is permitted to use under federally-enforceable requirements. For example:
2. For boilers that are permitted to combust No. 2 and No.6 fuel oil, the worst-case uncontrolled emission rate is calculated with No. 6 fuel oil.
3. For paint spray booths that use different paints, the worst-case uncontrolled emissions rate is calculated with the paint that produces the highest emission rate.
4. The maximum operating conditions shall be 8,760 hrs/yr unless limited by a federally enforceable condition.
5. Control Efficiency - the minimum control device efficiency or other parameters as specified in a federally enforceable permit limitation.

Pursuant to Title 15A NCAC 02Q .0502 and 40 CFR Part 70, a facility that falls into one of the following categories, is subject to the Title V regulations and must complete a Title V permit application:

1. Major facilities, as defined in 40 CFR Part 70.2, is a facility that has potential emissions of 100 tons per year or more of at least one regulated air pollutant, 10 tons per year or more of at least one hazardous air pollutant, 25 tons per year or more of any combination of all hazardous air pollutants, or such lesser quantities as the EPA may establish by rule. It is important to note that hazardous air pollutants (HAPs), as listed in Section 112(b) of the federal Clean Air Act, are not identical to the toxic air pollutants (TAPs) listed in Title 15A NCAC 02D .1100.

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1. Facilities with an emission source subject to 40 CFR Part 63 or any other standard or other requirement under Section 112 of the federal Clean Air Act, except that a source is not required to obtain a permit solely because it is subject to rules or requirements under Section 112(r) of the federal Clean Air Act;
2. Facilities to which Title 15A NCAC 02D .0517(2), .0528, .0529, or .0534 applies;
3. Facilities with a source subject to Title IV or 40 CFR Part 72; or Part 70.

Note that for purposes of determining Title V applicability to a facility based on the emissions criteria above, the definition of facility is: Any group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person, and belong to a single major industrial grouping (have the same 2-digit SIC code). This includes processes at the facility that support the primary manufacturing function, but may have a different SIC code if viewed alone. For example, industrial boilers that support the manufacturing processes are considered part of the manufacturing facility under that particular SIC code and the boiler emissions are included in determining Title V applicability. The definition of facility for Title V may be more inclusive than this, but not less. This definition, which allows partitioning of a facility by SIC code, is applicable to PSD, nonattainment permitting and Title V permitting only. The definition of facility under the North Carolina air toxics permitting requirements does not recognize SIC code distinctions.

**SYNTHETIC MINOR** – A synthetic minor facility is defined in 15A NCAC 02Q .0503(20) as "a facility that would otherwise be required to follow the procedures of Title V [15A NCAC 02Q .0500 "Title V Procedures"] except that the potential to emit is restricted by one or more federally-enforceable physical or operational limitations, including air pollution control equipment and restrictions on hours of operation, the type or amount of material combusted, stored, or processed, or similar parameters." By checking this box, you have indicated either:

1. Your facility is currently designated as a synthetic minor facility, or
2. You are requesting synthetic minor status for your facility and, as a requirement of federal enforceability, you are requesting that your "draft permit go to public notice with an opportunity to request a public hearing" in accordance with 15A NCAC 02Q .0306(a)(12)A facility which would otherwise be subject to Title V regulations except a limitation(s) in the facility’s permit has been used to avoid Title V requirements.

**SMALL** – A Small or Minor facility is defined in 15A NCAC 02Q .0503(9) as “any facility that is not a major facility.” If your facility does not meet the definition of Synthetic Minor or Title V facilities, then it is likely that the facility is a Small or Minor.

**PROHIBITORY SMALL** – A facility that avoids Title V permitting requirements by requesting evaluation per the 15A NCAC 02Q .0800 rules.

**GENERAL** – A facility that qualifies for a General Air Quality Permit

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**FACILITY (PLANT SITE) INFORMATION**

**DESCRIBE NATURE OF (PLANT SITE) OPERATIONS** – This is a short statement describing what is taking place at the facility (e.g. hot mix asphalt plant, rock quarry, cigarette manufacturing, lumber mill, etc.)

**PRIMARY SIC/NAICS CODE** – This is the Standard Industrial Code and North American Industry Classification System code for the facility. If there are multiple processes at the facility which have different SIC/NAICS codes, list the code or codes which best represent the primary activity at this facility.

**FACILITY COORDINATES** – This can be determined using Google Maps. Provide both the longitude and latitude for the facility.

**FACILITY ID NO** – This is the ID Number assigned by DAQ for this facility location. If this is a New Non-permitted Facility/Greenfield application, leave this section blank.

**CURRENT/PREVIOUS AIR PERMIT NO** – If this facility currently has an Air Quality Permit or had an Air Quality Permit at one time, list the assigned Air Quality Permit number. If the facility has never had an Air Quality Permit, leave this section blank.

**EXPIRATION DATE** – List the expiration date of the current Air Quality Permit. If the facility does not have a current Air Quality Permit, leave this section blank.

**DOES THIS APPLICATION CONTAIN CONFIDENTIAL DATA**? – Mark the appropriate check box. Note that all information in this application and the attachments thereto are considered public information unless the applicant can demonstrate that specific information qualifies for confidential treatment under the provisions of North Carolina General Statute 143-215.3(C) and 15A NCAC 02Q .0107.

**More information on confidential treatment of information is available at the following URL:**

[https://deq.nc.gov/about/divisions/air-quality/air-quality-permitting/permitting-procedures-memos-and-guidance](https://deq.nc.gov/about/divisions/air-quality/air-quality-permitting/permitting-procedures-memos-and-guidance%20)

***Any request for confidential treatment must be made at the time the information is FIRST submitted to the Division and under separate cover and shall state in writing why the information should be held confidential.*** Requests for confidentiality made at a later date will not be considered. Additionally, for each copy of the application required to be submitted, the following must be submitted:

1. One complete application form, stamped confidential on each page and containing the confidential and non-confidential information; and
2. One application form containing only the non-confidential information.

***Note: Please check with the DAQ Regional Office permitting staff or the Raleigh Central Office permitting staff prior to submitting the application if confidential status is requested for information in this application.***

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***Please note that for Title V permits, all application forms, including those deemed confidential by the Division, may be submitted to EPA. Because EPA has different guidelines for confidentiality, what may be deemed confidential by the Division may be released as public information by EPA. Therefore, it is advised that both the North Carolina General Statutes and the federal laws concerning confidentiality be reviewed prior to submitting proprietary information to the Division.***

**PERSON OR FIRM THAT PREPARED APPLICATION** - Enter the name, mailing address, telephone number, fax number, email address, and company affiliation of the person who prepared the application.

**SIGNATURE OF RESPONSIBLE OFFICIAL/AUTHORIZED CONTACT** – For Title V facilities, the Responsible Official, as defined by 40 CFR 70.2, for the facility applying for a permit. For Non-Title V facilities, the person at the facility applying for a permit, preferably an officer or company official. [see 15A NCAC 02Q .0304(j)]

**SECTION AA1** – Application for Non-Title V Permit Renewal

**COMPANY NAME**– The name of the company that is requesting permit renewal, as it appears on the existing Air Permit.

**AIR PERMIT NUMBER**– The existing permit number of the Air Permit for the facility for which permit renewal is being requested.

This Section also contains additional facility information related to the applicability of 40 CFR Part 68 “Prevention of Accidental Releases” – Section 112(r) of the Federal Clean Air Act Amendments of 1990. Information related to this regulation can be found at the following URL:

<https://deq.nc.gov/about/divisions/air-quality/air-quality-enforcement/chemical-accident-prevention> or call your Regional Office.

**SECTION AA2** – Application for Title V Permit Renewal

**COMPANY NAME** – The name of the company that is requesting permit renewal, as it appears on the existing Title V Air Permit.

**AIR PERMIT NUMBER** – The existing permit number of the Air Permit for the facility for which permit renewal is being requested.

**SECTION AA3** – Application for Name Change

**NEW FACILITY NAME** – The new name of the facility for which the application is made as it should appear on the revised Air Permit

**FORMER FACILITY NAME** – The name of the facility for which the application is made as it currently appears on the existing Air Permit.

**SECTION AA4** – Application for an Ownership Change

**AIR PERMIT NUMBER** – The existing permit number of the Air Permit for the facility for which ownership has changed and permit transferal is being requested.

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**PERMIT RESPONSIBILITY DATE** – The proposed date on which the responsibility, coverage, and liability of compliance with the revised Air Permit shall be transferred to the new owner of the facility to which the revised Air Permit applies.

**OWNERSHIP CHANGE DATE** – The date on which the legal ownership of the facility has been or will be transferred from the Former Owner to the New Owner.

**NOTE:** For Title V facilities, it shall be the responsibility of the new owner to submit an annual compliance certification pursuant to the terms and conditions of the air permit for the entire calendar year regardless of who owned the facility during the year. The new owner should obtain compliance information from the former owner prior to the transfer of ownership.

**SECTION AA5** – Application for Administrative Amendment

This section should be completed for any amendment to the existing Air Permit that is not one of the administrative amendments covered by Sections AA1 through AA4 and that does not involve the addition, modification, or deletion of emissions sources or the addition, relaxation, or removal of monitoring, record keeping, or reporting requirements. Please give a description of the administrative amendments for which the application is being made, including any additional documents that are necessary to complete the description.

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**FORM A2/A3**

**EMISSION SOURCE LISTING FOR THIS APPLICATION (A2)**

**112(r) APPLICABILITY INFORMATION (A3)**

**FORM A2 - EMISSION SOURCE LISTING: NEW, MODIFIED, PREVIOUSLY UNPERMITTED, REPLACED, DELETED** – All proposed emission sources and control devices (equipment) for which application is made should be listed in the appropriate section of this form. It is important that this form be completed as accurately as possible.

**EQUIPMENT TO BE ADDED BY THIS APPLICATION (NEW, PREVIOUSLY UNPERMITTED, OR REPLACEMENT)** – List all equipment being added to the permit for which application is made. This would include newly purchased equipment, equipment existing at the facility but previously unpermitted, or equipment being installed as replacement for existing equipment. Use the same emission source ID number indicated on the equipment being replaced in the EQUIPMENT MODIFIED section below

**EMISSION SOURCE ID NO.** – Enter a unique emission source ID number for each emission source for which application is made. The choice of ID numbers is at the discretion of the applicant, with the exception that exempt/insignificant source number must start with the letter “I”, and only exempt/insignificant sources may start with the letter “I”. It is recommended that each emission source ID number start with ES-\_\_.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**CONTROL DEVICE ID NO.** – Enter a unique control device ID number for each control device for which application is made. For multiple control devices on the same emission source, list the configuration of the controls (e.g. “cyclone in series with fabric filter”). For multiple emission sources controlled by the same control device, list the control device associated with each emission source and use the same control device ID number for each.

**CONTROL DEVICE DESCRIPTION** – Describe each control device for which application is made.

**EXISTING PERMITTED EQUIPMENT TO BE MODIFIED BY THIS APPLICATION** – List all equipment for which any modification is being requested requiring modification on the air permit. Such changes may be a new ID Number, change in requested process rate, change to accompanying control device, etc. All equipment listed should be existing permitted equipment only.

**EQUIPMENT TO BE DELETED BY THIS APPLICATION** – List all equipment being deleted from the permit by this application. Only list control devices if they are being deleted also. All equipment listed will be removed from the permit.

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**FORM A3 – 112(r) APPLICABILITY INFORMATION**

Mark the appropriate check box as to whether the facility is subject to 40 CFR 68 “Prevention of Accidental Releases.” If not subject to 112(r), specify in detail how the facility avoided applicability (e.g. Facility does not use or store any 112(r)-subject chemicals, the amounts of chemicals stored on site do not exceed 112(r) threshold quantities, etc.)

If the facility is subject to the requirements of 40 CFR 68, complete the information requested regarding a written Risk Management Plant (RMP), administrative controls, and processes and chemicals subject to the regulation.

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**FORM B – SPECIFIC EMISSION SOURCE INFORMATION**

Form B must be completed for each emission source or group of identical sources listed on Form A1. Identical sources with identical control devices should be grouped together in the application if they are subject to the same applicable requirements. Form B provides detailed information on the emission source(s) for which application is made. The term “emission source” is sometimes referred to as a “permit unit,” “emissions unit,” or “process,” but is basically equipment from which regulated air pollutants emanate or are emitted, either directly or indirectly, to the outdoor atmosphere and is subject to an applicable emissions control standard. It is very important that the emission sources be identified correctly prior to beginning any application.

Form B provides general information, criteria pollutant emission information (PM, PM10, PM2.5, SO2, NOx, CO, VOC, Lead), Hazardous Air Pollutant (HAP) emission information, and Toxic Air Pollutant (TAP) emission information.

Note that a Form B **MUST** be completed for each proposed emission source. In addition, each source **MUST** have one of the Forms B1 through B9, as appropriate to the type of emission source (e.g. a Form B and Form B6 are required for a storage silo or bin.) For those sources for which there is no specific source type Form B1 through B8, used the Form B9 “OTHER”.

There are several things to keep in mind when completing the emission source form. Each emission source and control device should be unique. These must be the same ID numbers carried over from Form A2 and must be used to reference these same items on all application pages.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a boiler will be permitted to combust natural gas, No. 2 fuel oil, and No. 6 fuel oil, there will be one Form B for each of these operating scenarios.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number for each emission source or numbers for identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack vent, etc.) associated with each emission source Emission sources with a common emission point will have the same emission point ID No. This ID No. must correspond to the ID No. used for this emission source on all other forms and all other references in the application.

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**DESCRIBE IN DETAIL THE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM)** – Enter a brief description of the process occurring in this emission source (e.g. Natural gas-fired boiler, 25 million Btu/hr maximum heat input.) For more complex processes, attach either a full process flow diagram or a simplified block flow diagram. This is to provide the permit writer information about the process in order to determine the applicable regulations and requirements.

**TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1 – B9 ON THE FOLLOWING PAGES)** – Mark the appropriate check box for the type of emission source. For sources that do not fall into one of the categories covered by Forms B1 through B8, use the Form B9 “Other”.

**COAL, WOOD, OIL, GAS, OTHER FUEL-FIRED BURNER (FORM B1)** – Use this form for sources which combust various fuels. This would include boilers, kilns, dryers, process heaters, etc. Do not use this form for internal combustion engines or generators.

**INTERNAL COMBUSTION ENGINES/GENERATORS (FORM B2)** – Use this form for internal combustion engines (e.g. fire pumps, electrical generators, air compressors, or engines used for conveyors, crushers, etc.)

**LIQUID STORAGE TANKS (FORM B3)** – Use this form for either underground or above-ground tanks storing liquid materials.

**WOODWORKING (FORM B4)** – Use this form for woodworking operations

**COATING/FINISHING/PRINTING (FORM B5)** – Use this form for processes which apply coatings and finishes or for printing operations.

**STORAGE SILOS/BINS (FORM B6)** – Use this form for storage silos and bins storing solid materials.

**MANUFACTURING OF CHEMICALS/COATINGS/INKS (FORM B7)** – Use this form for a source which produces chemicals, coatings, or inks.

**INCINERATION (FORM B8)** – Use this form for sources used to eliminate waste or other materials through thermal incineration.

**OTHER (FORM B9)** – Use this form for sources which are not covered by other emission source sections listed above.

**OTHER GENERAL INFORMATION ABOUT THE SOURCE**

**START CONSTRUCTION DATE –** Enter the proposed date that construction will commence

**DATE MANUFACTURED** – Enter the date of manufacture for the equipment

**MANUFACTURER MODEL NO**. – Enter the model number

**EXPECTED OP. SCHEDULE** – Enter the expected schedule of operation

**NSPS/NESHAP APPLICABILITY** – Check the check box if subject to either NSPS or NESHAP regulations, and enter the subparts as appropriate

**PERCENTAGE ANNUAL THROUGHPUT** - Enter the proposed percentage of the operating time that will occur in each quarter of the year

**CRITERIA AIR POLLUTANT EMISSIONS INFORMATION –** For each pollutant, enter the following information:

**SOURCE OF EMISSION FACTOR –** Enter the code which corresponds to the source of the emission factor from the table below:

|  |  |
| --- | --- |
| EMISSION FACTOR  CODE | DESCRIPTION |
| 01 | CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) |
| 02 | ENGINEERING JUDGEMENT WITH DOCUMENTATION |
| 03 | MATERIAL BALANCE |
| 04 | NC DAQ-APPROVED & REPRESENTATIVE STACK TESTS |
| 08 | USEPA/AP-42 EMISSION FACTOR NOT IN NC SPREADSHEETS |
| 09 | NC/LOCAL APPROVED EMISSION FACTOR (e.g., NC. SPREADSHEETS) |
| 10 | NC APPROVED SITE-SPECIFIC EMISSION FACTOR |

**EMISSIONS ESTIMATES** – Enter the estimates of the emissions from this emission source

**EXPECTED ACTUAL** – Enter the emission rate that is expected for normal operation including any pollution controls, operational limitations, or permit limitations, in lb/hr and tons/yr

**POTENTIAL EMISSIONS BEFORE CONTROLS/LIMITS** – Enter the maximum potential emissions of the emission source, based on operation 24 hours per day, 365 days per year (8,760 hours/yr), prior to applying any pollution controls, operational limitations, or permit limitations, in lb/hr and tons/yr

**POTENTIAL EMISSIONS AFTER CONTROLS/LIMITS** – Enter the maximum potential emissions of the emission source after the application of any pollution control devices, operational limitations, or permit limitations, in lb/hr and tons/yr

**HAZARDOUS AIR POLLUTANT EMISSION INFORMATION** – Enter information for each Hazardous Air Pollutant (HAP) expected to be emitted from this source, including name, CAS Number, and expected/actual emissions. “Hazardous Air Pollutant" means any pollutant that has been listed pursuant to Section 112(b) of the federal Clean Air Act. Pollutants listed only in 15A NCAC 02D .1104 (Toxic Air Pollutant Guidelines), but not pursuant to Section 112(b), are not be included in this definition.

**TOXIC AIR POLLUTANT EMISSION INFORMATION** – Enter information for the expected actual emissions after controls of each air pollutant designated as a Toxic Air Pollutant, in lb/hr, lb/day, and lb/yr. "Toxic Air Pollutant" means any of the carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants that are listed in 15A NCAC 02D .1104.

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**FORM B1 – EMISSION SOURCE (WOOD, COAL, OIL, GAS, OTHER FUEL-FIRED BURNER)**

This form is for burners which combust wood, coal, oil, gas, or other fuels. Other fuels would include tire-derived fuel, biomass, or bio-fuels, etc.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a boiler will be permitted to combust natural gas, No. 2 fuel oil, and No. 6 fuel oil, there will be one Form B for each of these operating scenarios.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the applicant, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B1 if all the emission source IDs are also listed on that Form B1 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**DESCRIBE USE** – Mark the check box for how the heat generated from this combustion is used. Check all that are applicable.

**PROCESS HEAT** – Source used to produce heat for some type of process.

**SPACE HEAT** – Source is used to produce heat for human comfort or to maintain facility temperatures.

**ELECTRICAL GENERATION** – Source is used for the generation of electrical power.

**CONTINUOUS USE** – Source is intended to be used without interruption

**STANDBY/EMERGENCY** – Sources is only used for standby purposes (e.g. when electrical power goes off or another boiler shuts off.) It is not used on a routine or regular basis and is not used to handle peak loads.

**OTHER** – Describe in comments.

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**HEATING MECHANISM** – Mark the appropriate check box for the type of heating. Indirect heating utilizes the fuel to heat a heat transfer medium (e.g. steam or Dowtherm®), while direct heating utilizes the combustion gases in direct contact with the process materials (e.g. a kiln operation or fabric drying operation.)

**MAXIMUM FIRING RATE (MMBTU/HR)** – Enter the maximum design heat input rating, in millions of Btu per hour (generally provided by themanufacturer of the equipment).

**WOOD-FIRED BURNER INFORMATION**

**WOOD TYPE** – Mark the applicable check boxes.

**BARK** – Check if combusting bark only.

**WOOD/BARK** – Check if combusting both wood and bark.

**WOOD** – Check if combusting wood only.

**OTHER** – Describe in comments.

**PERCENT MOISTURE OF FUEL** – Enter the percent moisture of the fuel.

**UNCONTROLLED/CONTROLLED** – Mark the appropriate check box for this source.

**UNCONTROLLED** – Check if there is not boiler emissions control device.

**CONTROLLED WITH FLYASH REINJECTION** – Check if boiler flyash is returned to the boiler combustion area to be burned a second time.

**NO FLYASH REINJECTION** – Check if a mechanical control device (e.g. multicyclone, scrubber, electrostatic precipitator, etc.) removes particulate from particulate laden gas streams.

**FUEL FEED METHOD** – Describe the fuel feed method (e.g. spreader stoker, overfeed stocker, underfeed stocker, suspension firing, fluidized bed, cone shaped pile on a flat sloping grate, fuel dropped onto a suspended fixed grate, etc.)

**HEAT TRANSFER MEDIA** – Mark the appropriate check box for the type of heat transfer media employed.

**COAL-FIRED BURNER INFORMATION**

**TYPE OF BOILER** – Mark the appropriate check box for the applicable fuel feed method. If a combination of feed methods, check all that apply.

**PULVERIZED COAL** – Any source utilizing coal which has been crushed to coal dust and is burned in suspension.

**PULVERIZED WET BED** – A source in which the ash is removed in a molten form.

**PULVERIZED DRY BED** – A source in which the ash is removed in a solid dry form.

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**OVERFEED STOKER** – A source continually feeding the coal by mechanically distributing the coal on the upper side of the burning bed.

**UNCONTROLLED** – Mark this check box if there are no boiler emission control devices.

**CONTROLLED** – Mark this check box if there are boiler emission control devices (multicyclone, fabric filter, scrubber, electrostatic precipitator, etc.)

**UNDERFEED STOKER** – A source continually mechanically feeding the coal from the underside of the burning fuel.

**UNCONTROLLED** – Mark this check box if there are no boiler emission control devices.

**CONTROLLED** – Mark this check box if there are boiler emissions control devices (multicyclone, fabric filter, scrubber, electrostatic precipitator, etc.)

**SPREADER STOKER** – A source continually mechanically spreading the coal onto a moving or stationary fuel bed. Combustion occurs in suspension as well as on the bed.

**UNCONTROLLED** – Mark this check box if there are no boiler emission control devices.

**FLYASH REINJECTION** – Mark this check box if the boiler flyash is collected from a mechanical control device (e.g. multicyclone or fabric filter) and returned to the boiler combustion area to be burned a second time.

**NO FLYASH REINJECTION** – Mark this check box if the boiler flyash is collected from a mechanical control device (e.g. multicyclone, fabric filter, scrubber, electrostatic precipitator, etc.) and is not returned to the boiler combustion area.

**FLUIDIZED BED** – A source which combusts the coal in a fluidized bed.

**CIRCULATING** – A circulating fluidized bed boiler.

**RECIRCULATING** - A recirculating fluidized bed boiler.

**OIL/GAS FIRED BURNER INFORMATION**

**TYPE OF BOILER** – Mark the appropriate check box for the type of boiler.

**UTILITY** – A source used primarily for generation of steam for production of electricity. These sources are generally greater than 100 million Btu/hr maximum heat input.

**INDUSTRIAL** – A source used primarily in an industrial operation. These sources are generally between 10 and 100 million Btu/hr maximum heat input.

**COMMERCIAL** – A source used primarily in a commercial operation. These sources are generally between 0.5 and 10 million Btu/hr maximum heat input.

**RESIDENTIAL** – A source used primarily for residential type operation only. These sources are generally less than 0.5 million Btu/hr maximum heat input.

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**TYPE OF FIRING** – Mark the appropriate check box for the type of firing in the source.

**NORMAL** – Mark this check box for a source which has normal firing methods and standard burners.

**TANGENTIAL** – Mark this check box for a source which is fired tangentially.

**LOW NOX BURNERS** – Mark this check box for those combustion sources that utilized specially designed burners which limit NOx production.

**NO LOW NOX BURNERS** – Mark this check box for those combustion sources that do not utilize low NOx burner designs.

**OTHER FUEL-FIRED BURNER INFORMATION**

**TYPE OF FUEL** – Enter the type of fuel combusted in this burner.

**PERCENT MOISTURE** – Enter the percent moisture of the fuel, if applicable.

**TYPE OF BOILER** – Mark the check box corresponding to the type of boiler.

**UTILITY** – A source used primarily for generation of steam for production of electricity. These sources are generally greater than 100 million Btu/hr maximum heat input.

**INDUSTRIAL** – A source used primarily in an industrial operation. These sources are generally between 10 and 100 million Btu/hr maximum heat input.

**COMMERCIAL** – A source used primarily in a commercial operation. These sources are generally between 0.5 and 10 million Btu/hr maximum heat input.

**TYPE OF FIRING** – Enter the type of firing, as listed under the Oil-Fired Burners above.

**TYPE OF CONTROL (IF ANY)** – Enter the type of pollution control devices, if any.

**FUEL USAGE INFORMATION** – Enter the information on the fuel used in the burner, including startup/backup fuels.

**FUEL TYPE** – Enter the type of fuel combusted in the burner. List each fuel type separately.

**UNITS** – Enter the unit of measure for the fuel listed (e.g. gallons, mcf, tons, pounds, etc.)

**MAXIMUM DESIGN** – Enter the manufacturer’s maximum design rating for the burner (nameplate rating), and list the units/hr for this rating.

**REQUESTED CAPACITY LIMITATION** – Enter any requested capacity limitation which might be required to avoid regulatory thresholds (e.g. a capacity limitation to avoid Title V permitting thresholds for a Synthetic Minor limitation.)

**FUEL CHARACTERISTICS INFORMATION** – Enter the information for each fuel used.

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**FUEL TYPE** – Enter the fuel type.

**SPECIFIC BTU CONTENT** – Enter the Btu content of the fuel, in appropriate units (Btu/cf, Btu/gallon, Btu/ton, etc.)

**SULFUR CONTENT (% BY WEIGHT)** – Enter the Sulfur content of the fuel, in percent by weight.

**ASH CONTENT (% BY WEIGHT)** – Enter the ash content of the fuel, in percent by weight.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B2 – EMISSION SOURCE (INTERNAL COMBUSTION ENGINES/TURBINES/GENERATORS)**

This form is for internal combustion engines which combust natural gas, fuel oil, liquefied petroleum gas (LPG), biofuels, landfill gas, biogas, or other fuels.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if an engine will be permitted to combust natural gas, and biogas, there will be one Form B for each of these operating scenarios.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical engines/turbines/generators can be listed on a single Form B2 if all the emission source IDs are also listed on that Form B2 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**ENGINE SERVICE** – Mark the applicable check boxes for the type of service for the engine.

**EMERGENCY** – Mark this check box if the engine is in emergency service (e.g. fire pump, emergency generator, etc.)

**SPACE HEAT** – Mark this check box if the engine provides space heating.

**ELECTRICAL GENERATION** – Mark this check box if the engine drives an electrical generator.

**PEAK SHAVER** – Mark this check box if the engine drives an electrical generator used for peak shaving.

**OTHER** – Mark this check box if the engine is in a service other than those listed above and describe the service.

**GENERATOR OUTPUT (kW)** – If this engine drives an electrical generator, enter the rated kW output of the generator.

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**ANTICIPATED ACTUAL HOURS OF OPERATION AS PEAK SHAVER** – Enter the number of hours per year that the source is anticipated to operate in peak shaving service.

**ENGINE OUTPUT** – Enter the maximum rated engine output in horsepower.

**TYPE OF ICE (INTERNAL COMBUSTION ENGINE)** – If this source is an internal combustion engine, mark the check box which corresponds to the type of engine.

**GASOLINE ENGINE** – Mark this check box if the engine is fueled with gasoline.

**DIESEL ENGINE UP TO 600 HP** – Mark this check box if the engine is fueled by diesel fuel and the output rating is 600 horsepower or less.

**DIESEL ENGINE GREATER THAN 600 HP** – Mark this check box if the engine is fueled by diesel fuel and the output rating is greater than 600 horsepower.

**DUAL FUEL ENGINE** – Mark this check box if the engine is a dual fuel engine.

**OTHER** – Mark this check box if the engine is a type other than those listed above and describe the type of engine.

**ENGINE TYPE** – Mark the appropriate check box for the type of engine.

**RICH BURN** – Mark this check box if the engine is a rich burn engine.

**LEAN BURN** – Mark this check box if the engine is a lean burn engine.

**EMISSION REDUCTION MODIFICATIONS** – Mark the appropriate check box for any emission reduction modifications on the engine.

**INJECTION TIMING RETARD** – Mark this check box if the engine is equipped with injection timing retard controls.

**PREIGNITION CHAMBER COMBUSTION** – Mark this check box if the engine has pre-ignition chamber combustion.

**OTHER** – Mark this check box if the engine is equipped with other emission reduction modifications other than those listed above, and describe the modification.

**STATIONARY COMBUSTION TURBINE INFORMATION** – If the source is a stationary combustion turbine, mark the appropriate check boxes.

**FUEL TYPE** – Mark the check boxes for the type of fuel combusted

**NATURAL GAS** – Mark this check box if the turbine combusts natural gas.

**OIL** – Mark this check box if the turbine combusts fuel oil.

**OTHER** – Mark this check box if the turbine combusts a fuel other natural gas or fuel oil, and describe the fuel.

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**CYCLE** – Mark the appropriate check box for the type of operation of the turbine.

**COGENERATION** – Mark this check box if the turbine is used for both electrical generation and process heat.

**SIMPLE** – Mark this check box if the turbine is used only for electrical generation.

**REGENERATIVE** – Mark this check box if the turbine is used as a regenerative cycle unit.

**COMBINED** – Mark this check box if the turbine is used as a combined cycle unit.

**CONTROLS** – Mark the appropriate check box for any controls installed on the turbine.

**WATER-STEAM INJECTION** – Mark this check box if the turbine has water or steam injection installed to limit emissions.

**UNCONTROLLED** – Mark this check box if the turbine has no additional emission controls installed.

**LEAN-PREMIX** – Mark this check box if the turbine has lean-premix controls

**ENGINE TYPE INFORMATION** – Mark the appropriate check boxes for the type of internal combustion engine or turbine.

**2-CYCLE LEAN BURN** – Mark this check box if the source is a 2-cycle lean burn engine.

**4-CYCLE LEAN BURN** – Mark this check box if the source is a 4-cycle lean burn engine.

**4-CYCLE RICH BURN** – Mark this check box if the source is a 4-cycle rich burn engine.

**TURBINE** – Mark this check box if the source is a turbine.

**OTHER (DESCRIBE)** – Mark this box if the source does not fit in one of the categories above, and describe the engine type further.

**CONTROLS** – Mark the appropriate check boxes for the type of emission controls installed on the engine/turbine.

**COMBUSTION MODIFICATIONS (DESCRIBE)** – Mark this check box if there have been modifications to the combustion mechanism, and describe further.

**NONSELECTIVE CATALYTIC REDUCTION** – Mark this check box if nonselective catalytic reduction is used to reduce pollutant emissions.

**SELECTIVE CATALYTIC REDUCTION** – Mark this check box if selective catalytic reduction is used to reduce pollutant emissions.

**CLEAN BURN AND PRECOMBUSTION CHAMBER** – Mark this check box if clean burn/pre-combustion chamber is used.

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**UNCONTROLLED** – Mark this check box if the source does not have any add-on controls for pollutant emission reduction.

**FUEL USAGE INFORMATION (INCLUDING STARTUP/BACKUP FUEL)** – Input information for engine/turbine fuel usage for each fuel type

**FUEL TYPE** – Enter the fuel type (e.g. gasoline, LPG, natural gas, No. 2 fuel oil, etc.)

**UNITS** – Enter the units of measure for the fuel (e.g. million cubic feet (mcf), gallons, etc.)

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** – Enter the maximum design fuel usage capacity (manufacturer’s rating or nameplate rating) and the units/hr for this rating (e.g. gallons/hr, cf/hr, etc.)

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** – Enter any requested capacity limitation which might be required to avoid regulatory thresholds (e.g. a capacity limitation to avoid Title V permitting thresholds for a Synthetic Minor limitation.)

**FUEL CHARACTERISTICS** – Enter information as applicable regarding the fuels used in the engine/turbine.

**FUEL TYPE** – Enter the type of fuel (e.g. Natural Gas, LPG, No. 2 Fuel oil, landfill gas, etc.)

**BTU/UNIT** – Enter the fuel high heating value, in Btu per unit of fuel (e.g. Btu/gallon, Btu/cf, etc.)

**UNITS** – Enter the units of measure for the fuel (mcf, gallons, etc.)

**SULFUR CONTENT (% BY WEIGHT)** – Enter the sulfur content of the fuel, in percent by weight.

**MANUFACTURER’S SPECIFIC EMISSION FACTORS (IF AVAILABLE)** – Enter the manufacturer’s emissions data for each pollutant if available for the engine or turbine.

**EMISSION FACTOR (LB/UNIT)** – Enter the emission factor in pounds per unit of fuel (e.g. lb/gallon fuel oil, lb/million Btu for natural gas, etc.)

**UNIT** – Enter the unit of measure for the fuel (e.g. gallons, cubic feet (cf), etc.)

**DESCRIBE METHODS TO MINIMIZE VISIBLE EMISSIONS DURING IDLING OR LOW-LOAD OPERATIONS** – Enter information on any methods employed to minimize visible emissions.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B3 – EMISSION SOURCE (LIQUID STORAGE TANK)**

This form is for storage tanks for liquids.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a storage tank bay be used to store two different chemicals, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical storage tanks can be listed on a single Form B3 if all the emission source IDs are also listed on that Form B3 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**GENERAL INFORMATION FOR EACH STORAGE TANK** – Enter information regarding the storage tank in the individual sections. This information should be entered no matter what the tank configuration.

**DESCRIBE IN DETAIL THE STORAGE TANK (ATTACH FLOW DIAGRAM)** – Describe the storage tank, what it stores, materials of construction, dimensions, etc. Attach a flow diagram of how this connects to the process at the facility.

**LIQUID STORED** – Enter the name of the liquid stored in the tank.

**LIQUID MOLECULAR WEIGHT (LB/LB-MOLE)** – Enter the molecular weight of the liquid, in pounds per pound-mole.

**TANK CAPACITY (GALLONS)** – Enter the maximum capacity of the tank, in gallons.

**VAPOR MOLECULAR WEIGHT (LB/LB-MOLE)** – Enter the vapor molecular weight, in pounds per pound-mole.

**AVERAGE LIQUID SURFACE TEMPERATURE (oF)** – Enter the average liquid surface temperature, in degrees Fahrenheit.

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**VAPOR PRESSURE AT AVERAGE LIQUID SURFACE TEMPERATURE (PSIA)** – Enter the vapor pressure of the liquid at the average liquid surface temperature, in pounds per square inch absolute.

**MAXIMUM LIQUID SURFACE TEMPERATURE (oF)** – Enter the maximum liquid surface temperature, in degrees Fahrenheit.

**MAXIMUM TRUE VAPOR PRESSURE (PSIA)** – Enter the maximum true vapor pressure of the liquid, in pounds per square inch absolute.

**BREATHER VENT SETTINGS (PSIG)** – Enter the vent settings, in pounds per square inch gauge, for vacuum or for pressure, as applicable.

**SHELL DIAMETER (FT)** – Enter the shell diameter, in feet.

**SHELL CONDITION** – Enter the shell condition, as applicable.

**IS TANK HEATED? (YES/NO)** – Mark the applicable check box.

**SHELL COLOR** – Enter the color of the shell of the tank.

**MAXIMUM THROUGHPUT (GALLONS/YR)** – Enter the maximum throughput in gallons per year.

**MAXIMUM TURNOVERS PER YEAR** – Enter the maximum number of turnovers per year for this tank.

**WORKING VOLUME (GALLONS)** – Enter the normal working volume of the tank, in gallons.

**ACTUAL THROUGHPUT (GALLONS/YR)** – Enter the expected actual throughput in gallons per year.

**ACTUAL TURNOVERS PER YEAR** – Enter the expected actual number of turnovers per year.

**MAXIMUM FILLS PER DAY** – Enter the maximum number of times per day this tank will be filled.

**MAXIMUM FILLING RATE (GALLONS/MINUTE)** – Enter the maximum filling rate, in gallons per minute.

**MINIMUM DURATION OF FILL (HR/FILL)** – Enter the minimum amount of time to fill this tank, in hours.

**VERTICAL FIXED ROOF TANK INFORMATION** – Enter information in this section if the tank is vertical with a fixed roof.

**SHELL HEIGHT (FT)** – Enter the height of the tank shell, in feet.

**ROOF TYPE (CONE OR DOME)** – Mark the appropriate check box for the type of roof.

**ROOF HEIGHT (FT)** – Enter the height of the roof. This is the height from the top of the shell to the topmost point of the roof, in feet.

**AVERAGE LIQUID HEIGHT (FT)** – Enter the average height of the liquid in the tank, in feet.

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**ROOF CONDITION (GOOD/POOR)** – Mark the appropriate check box.

**MAXIMUM LIQUID HEIGHT (FT)** – Enter the maximum liquid height in the tank, in feet.

**ROOF COLOR** – Enter the color of the roof.

**HORIZONTAL TANK INFORMATION** – Enter information in this section if the tank is a horizontal tank.

**SHELL LENGTH (FT)** – Enter the length of the shell of the tank, in feet.

**IS THE TANK UNDERGROUND? (YES/NO)** – Mark the appropriate check box.

**FLOATING ROOF TANK INFORMATION** – Enter information in this section if the tank is equipped with a floating roof.

**DESCRIBE PERTINENT TANK DATA SUCH AS DECKS, RIM SEALS, LIQUID DENSITY @ 60oF** – Enter any pertinent data regarding the tank in this section.

**FOR ALL TANKS – DESCRIBE ANY MONITORING OR WARNING DEVICES (SUCH AS LEAK ANDF FUME DETECTION INSTRUMENTATION)** – Enter pertinent information.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B4 – EMISSION SOURCE (WOODWORKING)**

Use this form to identify particulate emission sources from the sawing, sanding, planning, etc. of wood and wood products. Woodworking operations co-located and venting to the same control device or group of control devices can be grouped together (e.g. Machine Room #1 venting to two Bagfilters). Larger woodworking facilities should separate rough end, machine rooms, and sanding on separate forms. Sources venting to different control devices should not be grouped together (e.g. sources venting to a bagfilter should not be grouped with sources venting to a cyclone.)

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a combustion source may fire both natural gas and fuel oil, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B4 if all the emission source IDs are also listed on that Form B4 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**WOODWORKING OPERATING GENERAL INFORMATION** – Describe the woodworking operation in detail. In this description, include the types of woodworking and amount of each (e.g. five band saws, two abrasive planers and one turning lathe). Attach a process flowchart or block diagram of the system(s).

**TYPE OF WOOD** – Mark the appropriate check box(es).

**GREEN WOOD OR DRY WOOD** – Mark the appropriate check box(es).

**% MOISTURE** – Enter the percent moisture in the wood being processed.

**IS THIS OPERATION CONTROLLED?** – Mark the appropriate check box. If you checked “Yes”, indicate whether the operation is controlled by a cyclone, a bagfilter, or another type of control device by marking the appropriate check box.

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**% OF ANNUAL HOURS VENTING INDOORS** – If the source can vent indoors, enter the percentage of the annual operating hours that it vents inside the building.

**LOSS (% WASTE)** – Enter the overall percent loss of wood during the woodworking process.

**AVERAGE LB/BD-FT** – Enter the average pounds per board foot of wood processed.

**ACTUAL BD-FT/YEAR** – Enter the expected board feet of wood processed per year in the woodworking operation.

**MAXIMUM BD-FT/YR** – Enter the maximum amount of board feet of wood that could be processed in the woodworking operation at maximum capacity of the equipment.

**QUANTIFY THE AMOUNT OF WOODWASTE GENERATED** – Enter information on the quantity of woodwaste that is generated by the woodworking operation.

**TOTAL WASTE** – Enter the amount of waste generated, in pounds per hour, from the woodworking operation (including blocks, dust, and material vented to the control device ductwork), assuming the equipment is operated at its maximum capacity. Calculate the potential amount of total waste using the supplied equation and enter the total in the box.

**WASTE VENTED TO THE DUCTWORK (MAXIMUM)** – Enter the expected total waste generated, in pounds per hour, including ONLY the material vented to the control device ductwork (DO NOT include blocks), assuming the equipment is operated at its maximum capacity. Calculate the potential amount of waste vented to the ductwork using the supplied equation and enter the total in the box.

**WASTE VENTED TO THE DUCTWORK (ACTUAL)** – Enter the expected actual amount of waste that will be vented to the control device ductwork, in tons per year.

**CHARACTERIZE THE “IN DUCT” WOODWASTE** – Enter information on the % of woodwaste from each type of operation at this source and calculate potential and actual tons of woodwaste to the ductwork from each type of operation by using the potentials previously calculated above.

**THE WASTE VENTED TO THE DUCTWORK IS FROM (ENTER %)** - Enter the percentages, by weight, of the woodwaste in the ductwork that is generated from each type of woodworking operation in this source. The total of all percentages should be 100%.

**POTENTIAL TONS TO DUCTWORK** – Calculate the potential tons from each type of operation by multiplying the Total Potential Waste Vented to the Ductwork (Value A from the calculation above) times the % waste vented to the ductwork for this type of operation. The total of all entries in this column should add up to Value A above.

**ACTUAL TONS TO DUCTWORK** – Calculate the actual tons from each type of operation by multiplying the Actual Amount of Waste Expected (Value B from the calculation above) time the % waste vented to the ductwork for this type of operation. The total of all entries in the column should add up to Value B above.

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**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B5 – EMISSION SOURCE (COATING/FINISHING/PRINTING)**

A printing operation would be a single operation where inks and/or coatings are applied to a material. Multiple presses or printing sources of the same type would NOT be considered a single emission source. As specified in 15A NCAC 2Q .0102(c)(2)(D)(i), graphic arts operations without air pollution control devices are exempted from permitting if they are located at a facility whose facility-wide actual emissions of (1) volatile organic compounds are less than five tons per year (Graphic Arts operations are defined in Rule 15A NCAC 2Q .0803.)

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a combustion source may fire both natural gas and fuel oil, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B5 if all the emission source IDs are also listed on that Form B5 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**GENERAL INFORMATION FOR THE OPERATION** – Enter general information for this source.

**TYPE OF OPERATION** – Mark the check box for the type of operation.

**PRINTING** – Mark this check box for printing operations. Printing operations apply various inks on a substrate and may include the application of coatings for the materials as well.

**COATING** – Mark this check box for coating operations, where various coatings may be applied, including paints, polymeric coatings, etc.

**OTHER FINISHING** – Mark this check box for sources that involve other finishing operations that do not fit into the printing and coating categories.

**IS THIS OPERATION CONTINUOUS OR NON-CONTINUOUS (BATCH) –** Mark the check box for the appropriate type of operation.

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**PROCESS DESCRIPTION** – Describe in detail the process, and attach a process flow diagram or block flow diagram.

**WHAT IS BEING PRINTED/COATED/FINISHED**? – Describe the materials that are being printed, coated, or finished (e.g. rolled paper, paper sheets, cardboard boxes, t-shirts, floor laminate, etc.)

**CONTINUOUS OPERATION GENERAL INFORMATION** – For continuous operations, enter information on the type of printing/coating and general information about the process.

**TYPE OF PRINTING/COATING** – Mark the appropriate check box for the type of operation.

**FLEXOGRAPHIC** – Mark this check box for operations that utilize flexographic printing, or printing using a flexible relief plate.

**ROTOGRAVURE** – Mark this check box for operations that utilize rotary printing operations that use an engraved printing carrier.

**LITHOGRAPHIC** – Mark this check box for operations that employ lithographic techniques.

**OFFSET** – Mark this check box for operations that employ offset lithographic techniques.

**OTHER (PLEASE SPECIFY)** – Mark this check box for those operations that do not fall into one of the four categories above. Specify details of the type of operation in the comments.

**NON-CONTINUOUS OPERATION GENERAL INFORMATION** – For non-continuous (batch) operations, enter information on the type of source and general information about the process.

**TYPE OF SOURCE** – Mark the check box for the applicable type of operation.

**STATION** – Mark this check box if this is a separate station in a larger printing operation

**BOOTH** – Mark this check box if this is enclosed in a booth (e.g. paint spray booth).

**WASH-OFF TANK** – Mark this check box if the coatings/solvents are used in a wash-off tank.

**OFFSET** – Mark this check box if this is an offset printing application.

**DIP TANK** – Mark this check box if this coating is applied in a dip tank.

**OTHER (PLEASE SPECIFY)** – Mark this check box if the source does not fall into one of the five categories listed above. Specify more details about the source in comments.

**SPRAY OPERATIONS GENERAL INFORMATION** – For spray coating operations, mark the appropriate check box for the method of spraying the material and enter the transfer efficiency.

**AIRLESS** – Mark this check box if the spray application is done using airless spray. This is generally high pressure, low volume spraying.

**AIR ATOMIZATION** – Mark this check box if the spray application is done using pressurized air atomization.

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**ELECTROSTATIC** – Mark this check box if the spray application is done using electrostatic methods.

**HVLP (HIGH VOLUME LOW PRESSURE)** – Mark this check box if the spray application is done using HVLP spraying.

**OTHER (SPECIFY)** – Mark this check box if the spray application is done using a method which does not fall into one of the four methods listed above. Specify additional information about the process in the comments.

**TRANSFER EFFICIENCY** – Enter the percent of solid which actually is applied to the item being sprayed, taking into consideration solid lost due to overspray, etc.

**EXHAUST CONTROLS GENERAL INFORMATION** - Mark the appropriate check box for the type of controls installed and enter the particulate capture efficiency.

**NONE** – Mark this check box if there are no emissions controls installed on this source.

**DRY FILTER** – Mark this check box if the control is a dry filter.

**WATER WASH** – Mark this check box if the control is a water wash.

**BAFFLES** – Mark this check box if discharge baffles are used for control.

**OTHER (SPECIFY)** – Mark this check box if the control does not fit into one of the four categories listed above and specify the type of control employed.

**PARTICULATE CAPTURE EFFICIENCY** – Enter the percent of overspray which is captured from the process and sent to the exhaust stream. The capture efficiency will generally approach 100% for three-sided spray booths operating under sufficient negative pressure.

**COATING/SOLVENT USAGE INFORMATION** – Enter information about the coatings/solvents/inks used in this source. Attach material data sheets for each coating, solvent, or ink used. Use additional sheets as necessary.

**STATION NO.** – Enter the station number where this material is being used.

**COATING/SOLVENT/INK PRODUCT NAME AND FORMULA NUMBER APPLIED AT THIS STATION/SOURCE** – Enter information about each coating/solvent/ink used.

**ACTUAL USAGE** – Enter the projected actual usage of each individual coating, solvent, or ink in units per hour and units per year.

**MAXIMUM DESIGN CAPACITY** – Enter the maximum design capacity for each individual coating, solvent, or ink in units per hour and units per year.

**UNITS** – Specify the units of measure for the product used (e.g. gallons, etc.)

**CLEAN-UP** – Enter the same information as above for clean-up chemicals.

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**METHOD OF HEATING** – Mark the appropriate check box for the type of heating employed in this source.

**STEAM** – Mark this check box if heat is supplied with steam

**DIRECT FIRED** – Mark this check box if the unit is direct fired (e.g. with natural gas).

**ELECTRIC** – Mark this check box if the unit is electrically heated.

**OTHER (SPECIFY)** – Mark this check box if the method of heating does not fit into one of the three categories above and specify the method of heating in comments.

**FUEL USED** – Enter the type of fuel used for heating.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR**) – Enter the manufacturer’s rated maximum firing rate of all the burners in this source, in million Btu per hour.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B6 – EMISSION SOURCE (STORAGE SILO/BINS)**

Many industries use storage tanks, silos and bins to store ingredients and final products. The material stored is usually bulk solids. Use this form for those sources that store solid materials. (Use Form B3 for Liquid Storage Tanks.)

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a storage silo/bin may be used to store different materials, there will be one Form B for each of these operating scenarios.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission silos/bins can be listed on a single Form B6 if all the emission source IDs are also listed on that Form B6 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**DESCRIBE IN DETAIL THE PROCESS** – Describe what this storage silo/bin stores and how the tank connects to other processes at the facility. Attach a flow diagram of the process.

**MATERIAL STORED** – Enter the material that is stored in the silo/bin (e.g. cement, wood pellets, sand, etc.)

**DENSITY OF MATERIAL** – Enter the bulk density of the material, as stored, in pounds per cubic foot.

**CAPACITY OF SILO/BIN** – Enter the capacity of the silo/bin in cubic feet and in tons of material stored.

**DIMENSIONS OF SILO/BIN** – Enter the dimensions of the silo/bin, in feet. If cylindrical, enter the height and diameter. If rectangular, enter the length, width, and height.

**ANNUAL PRODUCT THROUGHPUT** – Enter the amount of product that passes through the silo/bin annually, in tons.

**ACTUAL** – Enter the projected actual throughput.

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**MAXIMUM DESIGN THROUGHPUT** – Enter the maximum design throughput.

**FILLING METHOD INFORMATION** – Mark check boxes for the type of filling mechanism for the silo/bin and enter data as appropriate.

**PNEUMATICALLY FILLED SILO/BIN**

**BLOWER** – Mark this check box if a blower is used for the pneumatic filling.

**COMPRESSOR** – Mark this check box if compressed air is used for the pneumatic filling.

**OTHER (SPECIFY)** – Mark this check box if the method of pneumatic filling does not fit into one of the two methods listed above. Specify the method of filling in comments.

**NO. FILL TUBES** – Enter the number of pneumatic fill tubes used at one time for the filling of the silo/bin.

**MAXIMUM ACFM** – Enter the volumetric capacity of the system while filling, in actual cubic feet per minute.

**MECHANICALLY FILLED**

**SCREW CONVEYOR** – Mark this check box if material is conveyed to the silo/bin with a screw conveyor.

**BELT CONVEYOR** – Mark this check box if material is conveyed to the silo/bin with a belt conveyor.

**BUCKET ELEVATOR** – Mark this check box if material is conveyed to the silo/bin with a bucket elevator.

**OTHER (SPECIFY)** – Mark this check box if material is conveyed to the silo/bin by another means that does not fit into one of the three methods listed above. Specify the method of filling in comments.

**MOTOR HP** – Enter the motor horsepower for the conveyor drive system.

**FILLED FROM** – Mark the check box for the source of the material being conveyed to the silo/bin.

**RAILCAR** – Mark this check box if the material is being unloaded from a railcar.

**TRUCK** – Mark this check box if the material is being unloaded from a truck.

**STORAGE PILE** – Mark this check box if the material is being unloaded from a storage pile.

**OTHER (SPECIFY)** – Mark this check box if the source of the material does not fit into one of the three categories listed above. Specify the source of the material in comments.

**MATERIAL IS UNLOADED TO** – Describe where the material goes when it is discharged from the silo/bin (e.g. process, truck loadout, railcar loadout, etc.)

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**BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO/BIN**? – Enter the method that material is unloaded from the silo/bin (e.g. gravity, pneumatically, screw conveyor, etc.)

**MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR)** – Enter the maximum rate, in tons per hour, that you plan to fill the silo/bin.

**MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR)** – Enter the maximum rate, in tons per hour, that you plan to discharge material from this silo/bin.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B7 – EMISSION SOURCE (MANUFACTURING OF CHEMICALS/COATINGS/INKS)**

This form is used for any process that manufactures chemicals, coatings, or inks. This emission source may be either a batch operation or a continuous process.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g. a chain of reaction vessels.) However, this description should specify the number of individual pieces of equipment that make up this emission source. Attach a process flow diagram with information on the processes, mixtures, and chemical reactions in this source.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a combustion source may fire both natural gas and fuel oil, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B7 if all the emission source IDs are also listed on that Form B7 (e.g. ID Nos. ES1, ES2, and ES3.) Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**DESCRIBE THE PROCESS IN DETAIL** – Describe what this process does and how it connects to other processes at the facility. Describe what materials are mixed together, what chemical reactions occur, etc. Attach a flow diagram of the process. **SEE THE NOTE ON FORMS AA AND A1 REGARDING CONFIDENTIAL INFORMATION.**

**DETAILED PROCESS AND EQUIPMENT INFORMATION** – For each piece of equipment in the process enter the following information:

**DESCRIPTION OF MATERIAL USED** – Enter the name of the chemical or substance used in that process equipment.

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**MAXIMUM VOC CONTENT** – enter the maximum VOC content of the chemical or substance, in pounds per gallon.

**EVAPORATION RATE (% THRU)** – Enter the evaporation rate, in percent of the throughput, for this process.

**PRODUCTION THROUGHPUT (GALLONS)** – Enter production capacities, in gallons.

**MAXIMUM CAPACITY** – Enter the maximum throughput capacity of the process, in gallons per hour and gallons per year.

**ACTUAL CAPACITY** – Enter the projected actual throughput of the process, in gallons per hour and gallons per year.

**PRODUCT DESCRIPTION (ATTACH MDS)** – Enter a description of the substance and attach a material data sheet for each substance.

**METHOD FOR DETERMINING EVAPORATION RATE** – Detail the method used for determining the evaporation rate for these substances.

**NO. OF HEATERS** – Enter the number of heating devices for this process.

**METHOD OF HEATING** – Enter the type of heating employed in the process.

**STEAM** – Mark this check box if the process is heated with steam.

**DIRECT FIRED** – Mark this check box if the process is heated by direct firing

**ELECTRIC** – Mark this check box if the process is electrically heated.

**OTHER (SPECIFY)** – Mark this check box if the type of process heating does not fit into one of the three methods listed above. Specify the heating method in comments.

**FUEL USED** – Enter the type of fuel used in the heaters, if applicable.

**TOTAL MAXIMUM FIRING RATE (Million BTU/HR)** – Enter the maximum firing rate for fuel-burning heaters, in million Btu per hour.

**DESCRIBE DEVICES USED TO REDUCE EVAPORATION AND/OR LEAKS** – Provide a description of methods and devices used to reduce evaporation of materials into the atmosphere.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B8 – EMISSION SOURCE (INCINERATION)**

This form is used for any process that eliminates waste material thermally. Note that if the material being combusted has been determined to be a non-hazardous secondary material under the solid waste rules in 40 CFR 241, and is being used as a fuel, the process is not subject to the Commercial and Industrial Solid Waste Incineration (CISWI) rules, and the process is not considered incineration. Such a process would be considered fuel combustion, requiring a Form B1.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g. a chain of reaction vessels). However, this description should specify the number of individual pieces of equipment that make up this emission source. Attach a process flow diagram with information on the processes, mixtures, and chemical reactions in this source.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a combustion source may fire both natural gas and fuel oil, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B7 if all the emission source IDs are also listed on that Form B7 (e.g. ID Nos. ES1, ES2, and ES3). Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.). For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**DESCRIBE IN DETAIL THE PROCESS** – Describe the process, including the types of material to be incinerated, process throughputs and heat inputs, pollution controls, etc. Attach a process flow diagram.

**TYPE** – Mark the check box for the applicable type of incineration process.

**HAZARDOUS WASTE** – Mark this check box if hazardous waste is being incinerated.

**SEWAGE SLUDGE** – Mark this check box if sewage sludge is being incinerated.

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**OTHER SLUDGE** – Mark this check box if sludge waste from other process is being incinerated.

**MUNICIPAL WASTE** – Mark this check box if the process incinerates municipal waste.

**CONICAL** – Mark this check box if the process is a conical incinerator.

**CREMATORY** – Mark this box if the process is a crematory incinerator.

**HOSPITAL, MEDICAL, OR INFECTIOUS WASTE** – Mark this check box if the material being incinerated is hospital, medical, or infectious waste.

**OTHER (SPECIFY)** – Mark this check box if the material being incinerated does not fall into one of the seven categories or waste listed above. Specify the type of waste in comments.

**GENERAL INFORMATION ABOUT THE INCINERATOR** – Enter information about the incinerator unit.

**PRIMARY CHAMBER** – Enter information about the primary chamber of the incinerator

**FIRING RATE (MMBTU/HR)** – Enter the manufacturer’s maximum rated firing rate, in million Btu per hour.

**OPERATING TEMPERATURE (oF)** – Enter the operating temperature of the primary chamber, in degrees Fahrenheit.

**RESIDENCE TIME (SEC)** – Enter the residence time in the primary chamber, in seconds.

**CHAMBER VOLUME (FT3)** – Enter the volume of the primary chamber, in cubic feet.

**SECONDARY CHAMBER** – Enter information about the secondary chamber of the incinerator.

**FIRING RATE (MMBTU/HR)** – Enter the manufacturer’s maximum rated firing rage, in million Btu per hour.

**OPERATING TEMPERATURE (oF)** – Enter the operating temperature of the primary chamber, in degrees Fahrenheit.

**RESIDENCE TIME (SEC)** – Enter the residence time in the primary chamber, in seconds.

**CHAMBER VOLUME (FT3)** – Enter the volume of the primary chamber, in cubic feet.

**EXCESS AIR (%)** – Enter the percent excess air for the combustion process.

**AIR DISTIBUTION** – Mark the appropriate check box for the type of air distribution in the incinerator.

**OVERFIRED** – Mark this check box if the air enters the combustion chamber above the incinerated material. Overfired air is usually applied above the burning bed and directed through openings in the charging door or incinerator walls.

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**UNDERFIRED** – Mark this check box if the air enters the combustion chamber below the incinerated material. Underfired air is usually directed through air inlets located near the floor or hearth of the primary chamber.

**AIR FLOW ENTERING THE UNIT (ACFM)** – Enter the volumetric flow rate of ambient air that is introduced into the incinerator, in actual cubic feet per minute.

**TYPE OF CHARGING** – Enter the type of charging of the material to be incinerated (e.g. manual, automatic charge, continuous, etc.)

**MAXIMUM FIRING RATE (MMBTU/HR)** – Enter the manufacturer’s rated maximum firing rate, in million Btu per hour.

**QUANTITY OF WASTE BURNED** – Enter information regarding the amounts of waste burned in the incinerator.

**HOURLY CHARGE RATE (LB/HR)** – Enter the maximum charging rate, in pounds per hour.

**MAXIMUM REQUESTED CHARGE RATE (TONS/YR)** – Enter any requested charging rate limitation in order to avoid regulatory thresholds.

**DESIGNED MAXIMUM QUANTITY WASTE BURNED (LBS/HR)** – Enter the manufacturer’s rated maximum design capacity of the incinerator, in pounds per hour.

**DESIGNED MAXIMUM QUANTITY WASTE BURNED (TONS/YR)** - Enter the manufacturer’s rated maximum design capacity of the incinerator, in tons per year.

**WASTE COMPOSITION INFORMATION** – Enter information on the waste incinerated.

**AVERAGE BTU/LB** – Enter the average Btu content of the material charged in Btu per pound.

**AVERAGE % MOISTURE CONTENT** – Enter the average moisture content of the material charged, in percent.

**WASTE TYPES AND PERCENTAGES** – Enter the various types of wastes incinerated and the percent of the total amount of waste incinerated represented by this type of waste.

**FUEL CHARACTERISTICS** – Enter information regarding the fuel(s) used in the incinerator, as appropriate.

**FUEL TYPE** – Enter the type of fuel used (e.g. natural gas, LPG, No. 2 fuel oil, etc.).

**BTU CONTENT** – Enter the Btu content of the fuel, and the appropriate units (Btu per cubic foot, Btu per gallon, etc.).

**SULFUR CONTENT (%)** – Enter the sulfur content of the fuel, in percent by weight.

**ASH CONTENT (%)** – Enter the ash content of the fuel, in percent by weight.

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**FINAL DISPOSITION OF ASH** – What is the ultimate disposition of the ash produced in the incinerator (e.g. Ash is stored on site and disposed of once per month. It is disposed of as hazardous waste by ABC Company in the XYZ Landfill.).

**ADDITIONAL INFORMATION TO ATTACH TO THE PERMIT APPLICATION** – Attach the following information (mark the check box if enclosed). Attach additional sheets if necessary.

**STARTUP PROCEDURES**

**DESCRIPTION OF AUTOMATIC AND MANUAL CONTROLS**

**MAINTENANCE PROCEDURES**

**SCHEMATIC OF INCINERATOR**

**ALL MANUFACTURER’S LITERATURE/SPECIFICATIONS**

**DESCRIPTION OF ALL MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

**SUMMARY OF RCRA APPLICABILITY**

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM B9 – EMISSION SOURCE (OTHER)**

This form is used for any emission source that does not fall into one of the eight emission source categories (Forms B1 through B8) listed above.

**EMISSION SOURCE DESCRIPTION** – Describe each emission source for which application is made. Emission source is defined as any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly. Groups of equipment that are interconnected as a single continuous process can be labeled a single emission source (e.g. a chain of reaction vessels). However, this description should specify the number of individual pieces of equipment that make up this emission source. Attach a process flow diagram with information on the processes, mixtures, and chemical reactions in this source.

**OPERATING SCENARIO \_\_ OF \_\_** - If this source may be operated in different modes, list which mode this form describes. For example, if a combustion source may fire both natural gas and fuel oil, there will be one Form B for each of these operating scenarios firing different fuels.

**EMISSION SOURCE ID NO** – Enter a unique emission source ID number or numbers for each emission source or group of identical emission sources for which application is made. The choice of ID numbers is at the discretion of the application, with the exception that only an insignificant/exempt activity may start with the letter “I”. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical emission sources can be listed on a single Form B7 if all the emission source IDs are also listed on that Form B7 (e.g. ID Nos. ES1, ES2, and ES3). Emission source number should be the same as listed on Form A2.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each.

**EMISSION POINT (STACK) ID NO** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**DESCRIBE IN DETAIL THE PROCESS** – Describe the process, what materials are used, products or chemicals that are produced, emissions controls, etc. Attach process flow diagrams. **SEE THE NOTE ON FORMS AA AND A1 REGARDING CONFIDENTIAL INFORMATION.**

**MATERIALS ENTERING THE PROCESS - CONTINUOUS PROCESSES** – List the materials that are used in the process to make the end product leaving the process. List the following information for each material:

**TYPE** – Describe each material used in the process.

**UNITS** – How much of the material is used, and what is the unit of measure?

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**MAXIMUM DESIGN CAPACITY (UNIT/HR)** – Enter the maximum usage of the material based on the constraints of the process.

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** – Enter any requested usage restrictions in order to avoid regulatory thresholds.

**MATERIALS ENTERING THE PROCESS - BATCH OPERATION** – List the materials that are used in the process to make the end product leaving the process.

**TYPE, UNITS, MAXIMUM DESIGN CAPACITY, REQUESTED CAPACITY LIMITATION** – Enter the same type of information as listed for a continuous process above.

**MAXIMUM DESIGN (BATCHES/HR)** – Enter the maximum number of batches that may be produced per hour based on the manufacturer’s design and any production constraints (specify any constraints in comments).

**REQUESTED LIMITATION (BATCHES/HR, BATCHES/YR)** – Enter any requested limitation to the number of batches run per hour in order to avoid regulatory thresholds, either in batches per hour or in batches per year.

**FUEL USED** – Enter the type(s), if any, of fuel used to heat the process.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** – Enter the manufacturer’s maximum design firing rate, in million Btu per hour, for the heating source for the process.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Add additional sheets if necessary.

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**FORM C1 – CONTROL DEVICE (FABRIC FILTER)**

This form should be completed for any fabric filter control devices listed on Form A2. Form C1 allows for the entering of general information about an individual fabric filter control device or group of identical control devices followed by more specific information about the control device(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C1 should be completed for every fabric filter control device listed on Form A2. In addition, specific information about the particular fabric filter should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C1 if all the control device IDs are also listed on that Form C1 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this fabric filter.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the fabric filter would be device No. 1 of 2 units).

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. PM, PM10, PM2.5, SO2, VOC, NOx, etc.).

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**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**GENERAL INFORMATION ABOUT THE CONTROL DEVICE AND MATERIAL CONTROLLED** – Enter information or mark the appropriate check box.

**PRESSURE DROP (IN. H2O)** – Enter the normal minimum and maximum operating pressure drops across the fabric filter, in inches water.

**GAUGE?** – Is there a differential pressure gauge on the unit? Mark the appropriate check box.

**BULK PARTICLE DENSITY (LB/FT3)** – Enter the bulk particle density of the material collected, in pounds per cubic foot.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected temperatures of the exhaust stream entering the fabric filter, in degrees Fahrenheit.

**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected temperatures of the exhaust stream exiting the fabric filter, in degrees Fahrenheit.

**POLLUTANT LOADING RATE** – Enter the expected pollutant loading rate, either in pounds per hour or grains per cubic foot. Mark the appropriate check box for the units of measure.

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**AIR INLET FLOW RATE (ACFM)** – Enter the flow rate of air into the fabric filter, in actual cubic feet per minute.

**FILTER MAX OPERATING TEMPERATURE (oF)** – Enter the maximum operating temperature for the filter material, in degrees Fahrenheit.

**NUMBER OF COMPARTMENTS** – Enter the number of separate compartments in the fabric filter housing.

**NUMBER OF BAGS PER COMPARTMENT** – For bagfilters, enter the number of bags in each compartment.

**LENGTH OF BAGS** – For bagfilters, enter the length of the bags.

**DIAMETER OF BAGS** – For bagfilters, enter the diameter of the bags.

**NUMBER OF CARTRIDGE** – For cartridge-type filters, enter the number of cartridges in the unit.

**FILTER SURFACE AREA PER CARTRIDGE (FT2)** – For cartridge-type filters, enter the filter surface area for each of the cartridges, in square feet.

**TOTAL FILTER SURFACE AREA (FT2)** – Enter the total surface area of the filter media, in square feet.

**AIR TO CLOTH RATIO** – Enter the air-to-cloth ratio (air inlet flow rate divided by total filter surface area).

**DRAFT** – Mark the check box for the type of air flow in the filter.

**INDUCED (NEGATIVE PRESSURE)** – Mark this check box if the air mover is located between the filter and the atmospheric discharge, and the unit is operated under a negative pressure.

**FORCED (POSITIVE PRESSURE)** – Mark this check box if the air mover is located between the emission source and the filter, and the unit is operated under a positive pressure.

**DESCRIBE CLEANING PROCEDURES** – Mark the appropriate check box for the type of filter media cleaning procedure used.

**DESCRIBE THE INCOMING AIR STREAM** – Enter a description of the air stream that is controlled by the filter.

**PARTICLE SIZE DISTRIBUTION** – Enter information on the size distribution of particles being collected by the filter for the size ranges listed. Enter the percent of the particles in each size range as well as the cumulative total percent (total of all size ranges should add to 100%.)

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Attach additional sheets if necessary.

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**FORM C2 – CONTROL DEVICE (ELECTROSTATIC PRECIPITATOR)**

An electrostatic precipitator (ESP) removes particulate matter from a gas stream by passing the gas stream through discharge electrodes and collection plates. Most particulates become charged and are collected on the plates.

This form should be completed for any electrostatic precipitator control devices listed on Form A2. Form C2 allows for the entering of general information about an individual electrostatic precipitator control device or group of identical control devices followed by more specific information about the control device(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C2 should be completed for every electrostatic precipitator control device listed on Form A2. In addition, specific information about the particular electrostatic precipitator should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C2 if all the control device IDs are also listed on that Form C2 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this fabric filter.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.)

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

**P.E. SEAL REQUIRED (PER 2Q .0112)?** – If the inlet air flow rate exceeds 10,000 ACFM, then a P.E. Seal is required.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

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**EQUIPMENT SPECIFICATIONS** – Enter information or mark appropriate check boxes for specific information regarding this electrostatic precipitator.

**TYPE OF PRECIPITATOR** – Mark the appropriate check boxes for wet or dry precipitator, and for single-stage or two-stage precipitator.

**OTHER EQUIPMENT SPECIFICATIONS** – Enter the data as required, or mark the appropriate check box.

**OPERATING PARAMETERS** – Enter the operating parameters for the precipitator.

**PRESSURE DROP (IN. H2O)** – Enter the minimum and maximum pressure drop across the precipitator, in inches water.

**WARNING ALARM** – Is the unit equipped with a warning alarm when operating parameters fall outside normal operation?

**RESISTIVITY OF POLLUTANT (OHM-CM)** – Enter the pollutant resistivity.

**GAS CONDITIONING** – Mark the appropriate check box and enter the type of conditioning agent used, if applicable.

**INLET GAS TEMPERATURE (oF)** – Enter the minimum and maximum inlet gas temperature, in degrees Fahrenheit.

**OUTLET GAS TEMPERATURE (oF)** – Enter the minimum and maximum outlet gas temperature, in degrees Fahrenheit.

**VOLUME OF GAS HANDLED (ACFM)** – Enter the gas flow rate, in actual cubic feet per minute.

**INLET MOISTURE PERCENT** – Enter the moisture content, in percent, of the inlet air.

**POWER REQUIREMENTS** - Mark the appropriate check box and enter the data required.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. PM, PM10, PM2.5, SO2, VOC, NOx, etc.).

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

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**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PARTICLE SIZE DISTRIBUTION** – Enter information on the size distribution of particles being collected by the filter for the size ranges listed. Enter the percent of the particles in each size range as well as the cumulative total percent (total of all size ranges should add to 100%).

**STARTUP PROCEDURES** – Describe startup procedures.

**MAINTENANCE PROCEDURES** – Describe relevant maintenance procedures and schedules.

**AUXILIARY MATERIALS USED** – Describe any auxiliary materials introduced into the control system.

**MONITORING DEVICES, GAUGES, TEST PORTS** – Describe these items as appropriate if included in the control system.

**COMMENTS** – Enter any comments here to include additional information or clarify information on this form. Attach additional sheets if necessary. Attach a diagram of the top view of the ESP including dimensions, to include at a minimum the plate spacing and wire spacing and indicating electrode type. Show the relationship of the control device to its emission source(s).

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**FORM C3 – CONTROL DEVICE (THERMAL OR CATALYTIC)**

**NOTE THAT IF A THERMAL OR CATALYTIC CONTROL DEVICE IS UTILIZED, A P.E. SEAL (FORM D5) IS REQUIRED WITH THE FORM C3**

A thermal control device or thermal oxidizer destroys VOCs and most hazardous pollutants through high temperature combustion. A catalytic control device destroys these pollutants with a combination of temperature and contact with a suitable catalyst. The proper combination of temperature, residence time, and catalyst contact determine the extent of destruction.

This form should be completed for any thermal or catalytic control devices listed on Form A2. Form C3 allows for the entering of general information about an individual thermal or catalytic control device or group of identical control devices followed by more specific information about the control device(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C3 should be completed for every thermal or catalytic control device listed on Form A2. In addition, specific information about the particular thermal or catalytic control device should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C3 if all the control device IDs are also listed on that Form C3 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this fabric filter.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.)

**MANUFACTURER** – Enter the name of the manufacturer of the control device.

**MODEL NUMBER** – Enter the manufacturer’s model number of the control device.

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**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

**TYPE** – Mark the check box for the specific type of control device.

**EXPECTED LIFE OF CATALYST** – Enter the expected life of the catalyst, in years, assuming normal operation and proper maintenance and inspection.

**METHOD OF DETECTING WHEN CATALYST NEEDS REPLACEMENT** – Describe the method of determining when the catalyst needs to be replaced.

**CATALYST MASKING AGENT IN AIR STREAM** – Mark the appropriate check box for the type(s) of pollutant(s) that would poison the catalyst and render it ineffective. If the specific masking agent is not listed, check the box marked “OTHER” and list the agent.

**TYPE OF CATALYST** – List the type of catalyst used in the control device.

**CATALYST VOLUME (FT3)** – List the volume of the catalyst bed, in cubic feet.

**VELOCITY THROUGH THE CATALYST (FT/SEC)** – List the velocity of the exhaust gases through the catalyst bed, in feet per second.

**SCFM THROUGH CATALYST** – List the volumetric flowrate of exhaust gases through the catalyst bed, in standard cubic feet per minute.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… natural gas-fired regenerative thermal oxidizer controlling VOC and HAP emissions from rubber mixing operations…”, or “…catalytic oxidizer controlling HAP emissions from batch resin operations…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. PM, PM10, PM2.5, SO2, VOC, NOx, etc.).

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

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**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%.)

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined

1. Calculated (Attach all calculations.)
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate.)
3. Source Test (Attach documentation or reference test already submitted to DAQ.)
4. Other (Describe.)

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit.

**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

**RESIDENCE TIME (SECONDS)** – Enter the residence time of the gases in the control device, in seconds.

**INLET AIR FLOW RATE** – Enter the inlet air flow rate, in Actual Cubic Feet per Minute (ACFM) and in Standard Cubic Feet per Minute (SCFM).

**COMBUSTION TEMPERATURE (oF)** – Enter the combustion temperature, in degrees Fahrenheit.

**COMBUSTION CHAMBER VOLUME (FT3)** – Enter the volume of the combustion chamber, in cubic feet.

**INLET MOISTURE CONTENT (%)** - Enter the percent moisture in the inlet exhaust stream.

**% EXCESS AIR** – Enter the percent excess air used in the combustion chamber.

**CONCENTRATION (PPMV)** – Enter the concentration of the destroyed VOC/HAP, in parts per million on a volume basis, for both the inlet and outlet exhaust streams.

**AUXILIARY FUEL USED** – Enter the type of auxiliary fuel used in the control device.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** – Enter the maximum heat input rate for the auxiliary fuel, in million Btu per hour.

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**DESCRIBE MAINTENANCE PROCEDURES** –Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**DESCRIBE ANY AUXILIARY MATERIALS INTRODUCED INTO THE CONTROL DEVICE** – Enter a description.

**COMMENTS** - Enter any comments here to include additional information or clarify information on this form. Attach additional sheets if necessary.

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**FORM C4 – CONTROL DEVICE (CYCLONE, MULTICYCLONE, OR OTHER MECHANICAL)**

Cyclones, multicyclones, and other mechanical collectors such as settling chambers or inertial separators utilize gravity or inertial energy to separate particulates from a gas stream.

This form should be completed for any cyclone, multicyclone, or other mechanical control device listed on Form A2. Form C4 allows for the entering of general information about an individual cyclone, multicyclone, or other mechanical control device or group of identical control devices followed by more specific information about the control device(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C4 should be completed for every cyclone, multicyclone, or other mechanical control device listed on Form A2. In addition, specific information about the particular cyclone, multicyclone, or other mechanical control device should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units).

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

**P.E. SEAL REQUIRED (PER 02Q .0112)?** – Mark the appropriate check box. If the inlet air flow rate exceeds 10,000 ACFM, then a P.E. Seal is required.

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**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. PM, PM10, PM2.5).

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit.

**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

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**INLET AIR FLOW RATE** – Enter the inlet air flow rate, in Actual Cubic Feet per Minute (ACFM).

**BULK PARTICLE DENSITY (LB/FT3)** – Enter the bulk density of the particulate being collected, in pounds per cubic feet.

**POLLUTANT LOADING RATE (GR/FT3)** – Enter the particulate loading rate in the inlet gas stream, in grains per cubic feet.

**SETTLING CHAMBER INFO** – Enter specific information about the settling chamber, if applicable, including the length, width, and height in inches, the inlet air velocity in feet per second, the number of trays, and the number of baffles.

**CYCLONE INFORMATION** – Enter specific measurement information about a cyclone, if applicable. Refer to the diagram below for a description of these variables for a typical top inlet cyclone. For other types of cyclones (such as bottom inlet, axial inlet, or straight-through designs), provide a diagram labeling the dimensions of the analogous parts.

|  |
| --- |
| [https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRp8Z3kqsMipQ9oy_zFEpbB0uBbSPBOWUw7WJ-O1vrGQF3lBMn5](https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwju5PfSprjJAhXM5yYKHXKbCMIQjRwIBQ&url=https://engineering.dartmouth.edu/~d30345d/courses/engs37/Cyclones.pdf&bvm=bv.108194040,d.eWE&psig=AFQjCNEM5e4mcpDZg5q_TjAduCeQPk-qeQ&ust=1448978176082960) |

In addition, for simple cyclones, enter the inlet velocity of the exhaust gases in feet per second and mark the appropriate check box denoting the configuration of the inlet (circular or rectangular). If a wet spray is utilized, enter the liquid used, flow rate in gallons per minute, and make up rate in gallons per minute. Also, mark the appropriate check box for the type of cyclone (conventional, high efficiency, or other type).

**MULTICYCLONE INFORMATION** – Enter information about the multicyclone, if applicable, including the number and diameter of tubes and whether there is a hopper aspiration system or louvers.

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**MAINTENANCE PROCEDURES** – Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**INCOMING AIR STREAM DESCRIPTION** – Enter a description of the incoming air stream including source and any characteristics not already described in the previous information on the form.

**PARTICLE SIZE DISTRIBUTION** – Enter information on the size distribution of particles being collected by the filter for the size ranges listed. Enter the percent of the particles in each size range as well as the cumulative total percent (total of all size ranges should add to 100%).

**MONITORING DEVICES, GAUGES, TEST PORTS, ETC** – Enter a description of these items, if applicable.

**ATTACH A DIAGRAM OF THE PROCESS, SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S)**

**COMMENTS** – Add any additional comments here. Attach additional sheets if necessary.

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**FORM C5 – CONTROL DEVICE (ADSORBER)**

**NOTE THAT IF YOUR APPLICATION INCLUDES THIS TYPE OF CONTROL DEVICE, THE FORM C5 MUST BE REVIEWED BY A PROFESSIONAL ENGINEER (P.E.) LICENSED IN NORTH CAROLINA, AS REQUIRED BY 15A NCAC 2Q .0112, AND A PROPERLY SEALED AND SIGNED FORM D5 MUST BE INCLUDED WITH THE APPLICATION.**

An adsorber is a control device used to extract gaseous pollutants from an exhaust air stream and concentrate them at the surface of a solid. As an example, activated carbon is commonly used to remove VOC from an airstream.

This form should be completed for any adsorber listed on Form A2. Form C5 allows for the entering of general information about an individual adsorber or group of identical adsorbers followed by more specific information about the adsorber(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C5 should be completed for every adsorber listed on Form A2. In addition, specific information about the particular adsorber should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3). Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.).

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

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**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. SO2, NOx, CO, VOC).

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**INLET AIR FLOW RATE (ACFM)** – Enter the inlet air flow rate to the adsorber, in actual cubic feet per minute.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit.

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**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

**SIZE OF COMPARTMENTS (FT)** – Enter the dimensions of the adsorber compartments, in feet.

**METHOD OF ADSORPTION** – Mark the appropriate check box for the method used. If “Other” is checked, enter the type of adsorption used.

**TYPE OF ADSORPTION MATERIAL** – Enter the type of material used for the adsorption process.

**NUMBER OF COMPARTMENTS** – Enter the number of compartments in the adsorber.

**REGENERATIVE METHOD** – Mark the appropriate check box for the method used to regenerate the adsorption material. If “Other” is checked, enter the type of regeneration used.

**REGENERATIVE SCHEDULE** – Enter the maximum expected time for desorption and the maximum expected time to reach maximum saturation of the adsorption material.

**HOW ARE EMISSIONS CONTROLLED DURING REGENERATION**? **–** Describe the method that will be used to control emissions while the adsorption material is being regenerated.

**VOLATILE CONCENTRATIONS (PPMV)** – Enter the expected concentration of the materials being adsorbed entering and leaving the unit, in parts per million based on volume.

**RELATIVE HUMIDITY OF AIR STREAM ENTERING UNIT (%)** – Enter the expected relative humidity of the inlet air stream, in percent.

**ORIENTATION OF BEDS** – Describe the orientation of the adsorption material beds (vertical, horizontal, etc.).

**BREAKTHROUGH CAPACITY (LB. VAPOR/LB. ADSORBENT)** – Enter the breakthrough capacity of the adsorber, in pounds of vapor per pound adsorbent.

**BREAKTHROUGH ALARM?** – Mark the appropriate check box.

**CYCLE TIME** – Enter the cycle time for the unit.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the adsorber.

**DESCRIBE ANY FIRE DETECTION DEVICES AND ANY MEANS OF FIRE SUPPRESSION** – Enter a description of any detection devices and suppression systems.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC**. **–** Enter a description of monitoring devices and test ports that are used with this adsorber.

**DESCRIBE HOW REGENERATION CYCLE IS INITIATED** – Enter a description of how the regeneration cycle for the adsorber is initiated (e.g. on a fixed-time basis, using a continuous ppm monitor, etc.).

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**ATTACH A DIAGRAM OF THE PROCESS, SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S)**.

**COMMENTS** – Add any additional comments here. Attach additional sheets if necessary.

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**FORM C6 – CONTROL DEVICE (GASEOUS ABSORBER)**

**NOTE THAT IF YOUR APPLICATION INCLUDES THIS TYPE OF CONTROL DEVICE, THE FORM C5 MUST BE REVIEWED BY A PROFESSIONAL ENGINEER (P.E.) LICENSED IN NORTH CAROLINA, AS REQUIRED BY 15A NCAC 2Q .0112, AND A PROPERLY SEALED AND SIGNED FORM D5 MUST BE INCLUDED WITH THE APPLICATION.**

A gaseous absorber is a control device used to remove gaseous pollutants from an exhaust air stream by absorbing them into a liquid with which the gas stream is brought into contact.

This form should be completed for any adsorber listed on Form A2. Form C6 allows for the entering of general information about an individual gaseous absorber or group of identical gaseous absorbers followed by more specific information about the absorber(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C6 should be completed for every adsorber listed on Form A2. In addition, specific information about the particular adsorber should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3). Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units).

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

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**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. SO2, NOx, CO, VOC)

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water. Also indicate whether a warning alarm is installed by marking the appropriate check box.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit.

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**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

**INLET AIR FLOW RATE (ACFM)** – Enter the inlet air flow rate to the adsorber, in actual cubic feet per minute.

**GAS VELOCITY (FT/SEC)** – Enter the velocity of the gas through the absorber, in feet per second.

**TOTAL GAS PRESSURE (PSIG)** – Indicate the pressure of the gas stream, in pounds per square inch gauge.

**GAS DEW POINT (oF)** – Enter the gas dew point, in degrees Fahrenheit.

**SYSTEM INFORMATION** –

**PACKED COLUMN ABSORBER** – Enter the type of packing, the length of the packed column, in feet, and the column diameter, in feet.

**PLATE COLUMN ABSORBER** – Enter the plate spacing, in inches, the column length, in feet, and the column diameter, in feet.

**ADDITIVE LIQUID SCRUBBING MEDIUM** – Specify what kind of liquid is used. Include the name(s) of the additive(s) used.

**PERCENT RECIRCULATED** – If the absorber is operated with recirculating slurries, specify what percentage of the liquid is returned to the system.

**MINIMUM LIQUID INJECTION RATE (GAL/MIN)** – Enter the total volumetric flow rate of the liquid, in gallons per minute.

**MAKE UP RATE (GAL/MIN)** – Specify the amount of new liquid that must be added to the system due to evaporation or discharge to a disposal system.

**pH RANGE** – Specify the normal operating pH range of the liquid in the absorber.

**METHOD OF pH MONITORING** – Specify how the pH of the system liquid is monitored.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**DESCRIBE ANY FIRE DETECTION DEVICES AND ANY MEANS OF FIRE SUPPRESSION** – Enter a description of any detection devices and suppression systems.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC**. **–** Enter a description of monitoring devices and test ports that are used with this adsorber.

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**FORM C7 – CONTROL DEVICE (CONDENSER)**

**NOTE THAT IF YOUR APPLICATION INCLUDES THIS TYPE OF CONTROL DEVICE, THE FORM C5 MUST BE REVIEWED BY A PROFESSIONAL ENGINEER (P.E.) LICENSED IN NORTH CAROLINA, AS REQUIRED BY 15A NCAC 2Q .0112, AND A PROPERLY SEALED AND SIGNED FORM D5 MUST BE INCLUDED WITH THE APPLICATION.**

Condensers are generally used to remove VOC by cooling the pollutant to below its saturation temperature and thereby affecting a phase change from gas to liquid. Separating the gas from the liquid removes a portion of the VOC in the gas stream. The amount of the pollutant that remains in the gas stream is a function of the temperature and the vapor-liquid equilibrium of the pollutant.

This form should be completed for any adsorber listed on Form A2. Form C7 allows for the entering of general information about an individual condenser or group of identical condensers followed by more specific information about the condenser(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C7 should be completed for every condenser listed on Form A2. In addition, specific information about the particular adsorber should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.)

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

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**CONDENSER TYPE** – Mark the appropriate check box(s) for the type of condenser.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. VOC or specific chemical).

**CORRESPONDING EFFICIENCY** – Enter the efficiency of the control device for removal of the specific pollutant listed.

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**BEFORE CONTROL CONCENTRATION (PPMV)** – Enter the concentration of the pollutant in the inlet gas stream, in parts per million by volume.

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.)

**AFTER CONTROL CONCENTRATION (PPMV)** – Enter the concentration of the pollutant in the outlet gas stream, in parts per million by volume.

**AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions exiting the control device for each pollutant listed, in pounds per hour.

**BOILING POINT OF COLLECTED POLLUTANT (oF)** – Enter the boiling point of the pollutant, in degrees Fahrenheit.

**HEAT OF VAPORIZATION OF COLLECTED POLLUTANT (BTU/LB-MOL)** – Enter the heat of vaporization of the pollutant, in Btu per pound-mol.

**SPECIFIC HEAT OF POLLUTANT COLLECTED (BTU/LB-MOL oF) –** Enter the specific heat of the pollutant in Btu per pound-mol-degree Fahrenheit.

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**EMISSION STREAM FLOW RATE (ACFM)** – Enter the flow rate of the emission stream into the condenser, in actual cubic feet per minute.

**INLET EMISSION STREAM TEMPERATURE (oF)** – Enter the inlet temperature of the emission stream, in degrees Fahrenheit.

**OUTLET EMISSION STREAM TEMPERATURE (oF)** – Enter the outlet temperature of the emission stream, in degrees Fahrenheit.

**COOLANT USED** – Enter the specific coolant used in the condenser.

**TEMPERATURE OF INLET COOLANT (oF)** – Enter the inlet temperature of the coolant used in the condenser.

**TEMPERATURE OF OUTLET COOLANT (oF)** – Enter the outlet temperature of the coolant used in the condenser.

**TEMPERATURE OF CONDENSATION (oF)** – Enter the temperature of the condensed pollutant, in degrees Fahrenheit.

**COOLANT FLOW RATE (LB/HR)** – Enter the flow rate of the coolant, in pounds per hour.

**REFRIGERATION CAPACITY (TONS)** – Enter the refrigeration capacity of the system, in standard tons rating.

**CONDENSER SURFACE AREA (FT2)** – Enter the total surface area available for condensation of the pollutant, in square feet.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC**. **–** Enter a description of monitoring devices and test ports that are used with this adsorber.

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**FORM C8 – CONTROL DEVICE (WET PARTICULATE SCRUBBER)**

Wet scrubbers are commonly used to separate particulates and sometimes gases from an exhaust stream. Scrubber liquids are introduced for particle collection or absorption of gases. The system performance depends on the particle size of the pollutant being collected and the efficiency of the contact between the particles or gas and the liquid.

This form should be completed for any adsorber listed on Form A2. Form C8 allows for the entering of general information about an individual wet scrubber or group of identical scrubbers followed by more specific information about the scrubber(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C8 should be completed for every wet scrubber listed on Form A2. In addition, specific information about the particular adsorber should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.)

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

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**P.E. SEAL REQUIRED (PER 2Q .0112)?** – Mark the appropriate check box. If the inlet air flow rate exceeds 10,000 ACFM, then a P.E. Seal is required.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. SO2, NOx, CO, VOC).

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.).

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%).

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations).
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate).
3. Source Test (Attach documentation or reference test already submitted to DAQ).
4. Other (Describe).

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit.

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**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

**INLET AIR FLOW RATE** – Enter the inlet air flow rate, in Actual Cubic Feet per Minute (ACFM).

**MOISTURE CONTENT** – Enter the moisture content of the inlet and outlet gas streams, in percent.

**THROAT VELOCITY (FT/SEC)** – Enter the velocity of the gas stream in the throat area, if applicable.

**THROAT TYPE** – Mark the applicable check box. If not applicable to this type of scrubber, leave these unchecked.

**TYPE OF SYSTEM** – Specify the type of scrubber system used (e.g. spray tower, cyclone spray tower, packed bed scrubber, tray type scrubber, mechanically aided scrubber, venturi scrubber, orifice scrubber.)

**TYPE OF PACKING USED, IF ANY** – Specify the type of packing used if this is a packed bed system.

**ADDITIVE LIQUID SCRUBBING MEDIUM** – Specify what type of liquid is used. Include the name of the additives.

**PERCENT RECIRCULATED** – If the scrubber is operated with recirculated slurries, specify the percentage of the liquid returned to the system.

**MINIMUM LIQUID INJECTION RATE (GAL/MIN)** – Specify the minimum volumetric flow rate of the scrubbing liquid, in gallons per minute.

**MAKE UP RATE (GAL/MIN)** – Specify the amount of new liquid that must be added to the system due to evaporation or discharge to a disposal system, in gallons per minute. Also include the makeup rate for the additive used.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC**. **–** Enter a description of monitoring devices and test ports that are used with this scrubber.

**PARTICLE SIZE DISTRIBUTION** – Enter information on the size distribution of particles being collected by the filter for the size ranges listed. Enter the percent of the particles in each size range as well as the cumulative total percent (total of all size ranges should add to 100%.)

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**FORM C9 – CONTROL DEVICE (OTHER)**

This form should be completed for any control device listed on Form A2 that does not conform to one of the control devices described on Forms C1 through C8. Form C9 allows for the entering of general information about an individual control device or group of identical control devices followed by more specific information about the control device(s). Identical control devices associated with identical emission sources should be grouped together in the application if they are subject to the same applicable regulations. The general information on Form C9 should be completed for every control device listed on Form A2 that does not conform to one of the control devices described by Forms C1 through C8. In addition, specific information about the particular control device should be completed in the appropriate sections.

**CONTROL DEVICE ID NO** – Enter a unique ID number for each control device for which application is made. For multiple control devices on the same emission source, list in series according to the exhaust air stream direction (i.e., from the emission source to the final emission point.) For multiple emission sources on the same control device, list the control device associated with each emission source and use the same control device ID No. for each. The choice of ID numbers is at the discretion of the applicant. It is recommended that each emission source ID No. start with ES\_\_, control device ID No. start with CD\_\_, and emission point ID No. start with EP\_\_. Groups of identical control devices can be listed on a single Form C4 if all the control device IDs are also listed on that Form C4 (e.g. ID Nos. CD1, CD2, and CD3.) Control Device number should be the same as listed on Form A2.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S)** – List all emission source IDs whose emissions are controlled by this cyclone, multicyclone, or other mechanical control device.

**EMISSION POINT (STACK) ID NO.** – Enter a unique ID number for each emission point (e.g. stack, vent, etc.) associated with each emission source. Emission sources with a common emission point will have the same Emission Point ID No. This ID No. must correspond to the ID No. used for the emission source on all other forms and all other references in the application.

**POSITION IN SERIES OF CONTROLS** – Indicate the position in the control scheme, with the first control device nearest the emission source and the last control device discharging to atmosphere (e.g. for a fabric filter in series with an electrostatic precipitator the precipitator would be device No. 2 of 2 units.)

**OPERATING SCENARIO \_\_ OF \_\_** - If this control device may be operated in different modes, list which mode this form describes. For example, if a control device may be operated in two different modes, there will be one Form C for each of these different operating scenarios.

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**P.E. SEAL REQUIRED (PER 02Q .0112)?** – Mark the appropriate check box. If the inlet air flow rate exceeds 10,000 ACFM, or if the design, applicability, or appropriateness, or a determination of performance of the control device is involved, then a P.E. Seal is required.

**DESCRIBE CONTROL SYSTEM** – Enter a description of each control system for which application is made, including the emission source being controlled. For example, “… fabric filter controlling particulate matter emissions from sand screening operation…”, or “…fabric filter in series with wet electrostatic precipitator controlling particulate matter emissions from biomass-fired boiler…” Attach a process flow diagram with information on the relationship of the control devices to the emission sources.

**POLLUTANT INFORMATION** – Enter information about the air pollutants that are controlled by this control device.

**POLLUTANT(S) COLLECTED** – List the specific air pollutant collected or controlled by this control device (e.g. SO2, NOx, CO, VOC)

**BEFORE CONTROL EMISSION RATE (LB/HR)** – Enter the estimate of the emissions entering the control device for each pollutant listed, in pounds per hour. Note in the comments section how these emissions were estimated (e.g. manufacturer’s information, AP42 emission factors, stack testing data, etc.)

**CAPTURE EFFICIENCY** – Enter the estimated capture efficiency of the control device for the specific pollutant listed.

**CONTROL DEVICE EFFICIENCY** – Enter the estimated control efficiency of the control device for the specific pollutant listed.

**CORRESPONDING OVERALL EFFICIENCY** – Enter the estimated overall efficiency of the control device for the specific pollutant listed (e.g. if capture efficiency is 80% and control device efficiency is 90%, the corresponding overall efficiency would be 72%.)

**EFFICIENCY DETERMINATION CODE** – Enter the code to represent how the efficiency was determined.

1. Calculated (Attach all calculations.)
2. Manufacturer’s specifications or guarantees (Enclose documentation as appropriate.)
3. Source Test (Attach documentation or reference test already submitted to DAQ.)
4. Other (Describe.)

**TOTAL AFTER CONTROL EMISSION RATE (LB/HR)** – Enter the total after control emission rate in pounds per hour. This is calculated by multiplying the Before Control Emission Rate by the Corresponding Overall Efficiency.

**PRESSURE DROP (IN H2O)** – Enter the minimum and maximum expected pressure drop across the control device, in inches of water.

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**BULK PARTICLE DENSITY (LB/FT3)** – Enter the bulk particle density of the material collected, in pounds per cubic foot.

**INLET TEMPERATURE (oF)** – Enter the minimum and maximum expected inlet temperature of the exhaust gases, in degrees Fahrenheit

**OUTLET TEMPERATURE (oF)** – Enter the minimum and maximum expected outlet temperature of the exhaust gases, in degrees Fahrenheit.

**INLET AIR FLOW RATE (ACFM)** – Enter the inlet air flow rate, in Actual Cubic Feet per Minute (ACFM).

**OUTLET AIR FLOW RATE (ACFM)** – Enter the outlet air flow rate, in Actual Cubic Feet per Minute (ACFM).

**INLET AIR FLOW VELOCITY (FT/SEC)** – Enter the inlet air flow velocity, in feet per second.

**OUTLET AIR FLOW VELOCITY (FT/SEC)** – Enter the outlet air flow velocity, in feet per second.

**INLET MOISTURE CONTENT (%)** – Enter the moisture content of the inlet gas stream, in percent.

**FORCED/INDUCED AIR** – Mark the appropriate check box for this control device.

**COLLECTION SURFACE AREA (FT2)** – Specify the surface area on which the pollutant is collected, if applicable.

**FUEL USED** – Specify the fuel used, if this control device involves combustion.

**FUEL USAGE RATE** – Enter the maximum fuel usage rate on an hourly or an annual basis or specify the maximum fuel firing rate in million Btu per hour.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe the manufacturer’s recommendations for the type and frequency of maintenance and inspection for the control device.

**DESCRIBE ANY AUXILIARY MATERIALS INTRODUCED INTO THE CONTROL SYSTEM** – Specify any materials introduced into the system for pollutant control.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC**. **–** Enter a description of monitoring devices and test ports that are used with this control device.

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**FORM D1 – FACILITY-WIDE EMISSIONS SUMMARY**

This form must be completed for all new/greenfield applications and applications for modifications. It is not required for renewals, name changes, ownership changes, or administrative amendments.

Note that potential emissions before controls/limitations are calculated using maximum rated throughput or maximum rated heat inputs for emission sources, without accounting for any pollution controls or production or emission limitations.

Potential emissions after controls/limitations are calculated by taking into account any production or emission limitations and any pollution control devices.

**CRITERIA AIR POLLUTANT EMISSION INFORMATION** – Indicate the expected actual emissions, the potential emissions before controls/limitations, and the potential emissions after controls/limitations for Particulate Matter (PM), Particulate Matter < 10 microns (PM10), Particulate Matter < 2.5 microns (PM2.5), Sulfur Dioxide (SO2), Nitrogen Oxides (NOx), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Lead, and Greenhouse Gases (GHG), in short tons per year. Greenhouse Gas emissions are listed as the Carbon Dioxide Equivalent (CO2e).

**HAZARDOUS AIR POLLUTANT EMISSION INFORMATION** – Indicate the expected actual emissions, the potential emissions before controls/limitations, and the potential emissions after controls/limitations for all HAP, in tons per year.

**TOXIC AIR POLLUTANT EMISSION INFORMATION** – Indicate the expected actual emissions of all toxic air pollutants after controls/limitations, in pounds per hour, pounds per day, and pounds per year. For each toxic air pollutant, indicate whether modeling is required for each toxic air pollutant. Modeling is required if the expected actual emission rate exceeds the corresponding Toxic Air Pollutant Permitting Emissions Rate (TPER) as listed in 15A NCAC 2Q .0711.

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**FORM D2 – AIR POLLUTANT NETTING WORKSHEET AND FACILITY-WIDE EMISSION SUMMARY**

This form is used as a netting analysis worksheet and as a facility-wide emissions summary for each toxic air pollutant (TAP). Therefore, one Form D2 should be completed for each TAP. Items (4) through (6) below need only be completed if the applicant is attempting to avoid a toxics evaluation by demonstrating that the proposed modification will not result in a net facility-wide increase in toxic air pollutant emissions [Ref: 15A NCAC 02Q .0703]. Items (7), (8), and (9) below must be completed if a toxics evaluation is required.

**Note that all** **calculations, assumptions, analysis and other information used to support this form must be** **included.**

**TOXIC AIR POLLUTANT -** List the TAP that will be addressed by this form.

**EMISSION SOURCE ID NOS. -** List the ID Nos. of the sources that emit this TAP.

**SECTION A - EMISSION OFFSETTING ANALYSIS FOR MODIFIED/NEW SOURCES**

1. **MODIFICATION INCREASE -** Calculate the total TAP increases from all the proposed modifications.
2. **MODIFICATION DECREASE -** Calculate the total TAP decreases from the proposed modification.
3. **NET CHANGE FROM MODIFICATION -** Subtract (2) from (1) to determine the net change in TAP emissions as a result of the proposed modifications.

If this number is zero (0) or negative (-), there is no net increase in TAP emissions from the

proposed modification and no further toxics evaluation is required (i.e., items (4) through (9)

should not be completed for this TAP).

If this number is positive (+), there is a net increase in emissions of this TAP and further review is necessary. Items (4) through (6) below should be completed if the applicant is attempting to avoid a toxics evaluation by demonstrating that the proposed modification will not result in a net overall increase in toxic air pollutant emissions. Otherwise, go directly to items (7), (8), and (9) below.

**SECTION B - FACILITY-WIDE EMISSION NETTING ANALYSIS**

1. **CREDITABLE INCREASE -** Calculate the total creditable TAP increases. Regulation 15A NCAC 2Q. 0703 should be reviewed for guidance on determining creditable increases. Provide documentation on a separate page. Contact the Air Quality Analysis Branch for further guidance.
2. **CREDITABLE DECREASE -** Calculate the total creditable TAP decreases. Regulation 15A NCAC 2Q .0703 should be reviewed for guidance on determining creditable decreases. Provide documentation on a separate page. Contact the Air Quality Analysis Branch for further guidance.

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1. **NET CREDITABLE CHANGE -** Subtract (5) from the sum of (3) and (4) to determine the net creditable change.

If this number is negative (-), there is no net overall increase in emissions of this TAP and no

further toxics evaluation is required (i.e., items (7), (8), and (9) should not be completed for this

TAP).

If this number is positive (+), there is a net overall increase in emissions of this TAP and further

review is necessary. Items (7), (8), and (9) should be completed to determine whether an air

dispersion modeling analysis is required.

**SECTION C - FACILITY-WIDE EMISSIONS:**

1. **TOTAL FACILITY EMISSIONS -** If a facility-wide evaluation is required for this TAP, a form D3-1 is required to be completed for each emission source of this TAP. The total facility-wide emissions of this TAP are calculated by summing the emissions from each emission source for which a form D3-1 was completed.
2. **2Q .0711 Level -** The emission level for each pollutant as listed in 15A NCAC 02Q .0711.
3. **ARE THE TOTAL FACILITY-WIDE EMISSIONS LESS THAN THE TPER LEVELS?** Mark the appropriate check box. Air dispersion modeling analysis is required if the total facility-wide emission level (7) is greater than the 02Q .0711 level (8) and the source emitting the toxic air pollutant is not exempted by 15A NCAC 02Q .0702(a)(27) “Exemptions”. If this modeling analysis is required, complete stack parameters section of form D3-1 for each emission source that emits this TAP. Review the modeling plan requirements.

**MODELING PLAN REQUIREMENTS -**

Air toxic modeling requirements are contained in Title 15A NCAC 02D .1100 and 02Q .0711. Applicants

submitting an air dispersion modeling analysis must first submit a modeling plan. The plan should be

officially approved prior to the submittal of the modeling analysis. Contact the Air Quality Analysis Branch

(AQAB) for further modeling guidance. The modeling plan should include the following information:

1) a diagram of the plant site, including locations of all existing and proposed stacks and

associated building;

2) a list of on-site building dimensions (height, width, and length);

3) a diagram showing property boundaries, including a scale, key, and a North indicator;

4) the location of the site on a United State Geological Survey (USGS) map;

5) calculation of Good Engineering Practice Stack Height for each stack;

6) discuss all aspects of the project not accounted for in a simple flat terrain model. These

include cavity calculations, impact on rolling and complex terrain, building wake affects,

and urban/rural considerations;

7) discuss reason for model selections;

8) discuss meteorological data to be used; and

9) any other pertinent information.

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**FORM D2A – AIR POLLUTANT “PROJECT ONLY” NETTING WORKSHEET**

This form is used as a “project netting” analysis worksheet for each Prevention of Significant Deterioration (PSD) pollutant. Therefore, one form D2A should be completed for each pollutant.

Items (1) through (3) below need only be completed if the applicant is attempting to avoid the PSD process by demonstrating that the proposed “project” modification will not result in an emissions increase of a PSD air pollutant which exceeds the PSD Significance level associated with that pollutant.

**PSD AIR POLLUTANT -** List the PSD pollutant that will be addressed by this form.

**EMISSION SOURCE ID NOS. AND DESCRIPTIONS -** List the ID Nos. and Descriptions of the sources that emit this pollutant.

**EMISSION OFFSETTING ANALYSIS FOR MODIFIED/NEW SOURCES IN PROJECT:**

1. **MODIFICATION INCREASE -** Calculate the total potential emission increase (after control equipment) from all the proposed “project” modification(s) for this pollutant.
2. **MODIFICATION DECREASE -** Calculate the total baseline actual emission decrease from the proposed “project” modification(s) for this pollutant [Ref. 15A NCAC 02D .530(b)(1)].
3. **“PROJECT” NET CHANGE FROM MODIFICATION -** Subtract (2) from (1) to determine the net change in emissions of this pollutant as a result of the proposed “project” modifications.

If this number is less than the PSD Significance level for the specific pollutant, a further PSD evaluation is not required.

If this number is greater than the PSD Significance level for the specific pollutant, further review is necessary. Contemporaneous netting for facility-wide emissions from sources not associated with the current project may need to be performed.

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**FORM D3 – MODELING REQUEST FORMS (3 PAGES)**

This form is used to provide the North Carolina Division of Air Quality (NCDAQ) / Air Quality Analysis Branch (AQAB) modelers with the necessary information to conduct an initial modeling evaluation of facility toxic emissions. This form should only be completed if the NCDAQ / AQAB modelers are requested by the applicant to conduct dispersion modeling. The AQAB modelers will perform screening, and if necessary and where possible, refined modeling. If the model results indicate the facility will be unable to demonstrate compliance with the applicable AAL for one or more pollutants at the requested emission rates, the applicant will be notified and will be required to perform the compliance demonstration using established modeling protocol and modeling analysis requirements as defined in the NCAC 15A 2D .1100 and 15A 2D .0600 and as discussed in the ***Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina.***

Although the information requests in the modeling worksheets are mostly self-explanatory, additional comments are provided below.

**INTRODUCTION** - Provide enough information to allow the modeler to understand the purpose of the new or modified source(s) affected by the proposed changes.

**EMISSIONS DATA** - Source emissions by pollutant should represent the maximum emissions (expected or desired) after controls and should match the emissions data given in the permit application. These emissions may become permit limits for each pollutant for each source. **Note:** If facility-wide pollutant emission limits are desired, NCDAQ will evaluate compliance assuming all the pollutant emissions are being emitted from the worst case stack, i.e., the emission point which would result in the highest ambient concentrations.

**SOURCE DATA** - List all the sources which emit pollutants affected by the proposed changes or modifications. Contact AQAB on specific parameters for area and volume sources.

* ***Point source*** examples include stacks, vents, chimneys, etc.
* ***Area source*** examples include ponds, storage piles, open pits, etc.
* ***Volume sources*** are generally a collection or multitude of small sources very close together such as emissions from the doors, windows, roof, and miscellaneous vents of a building or from numerous valves and flanges where defining each source separately as a point source would be difficult or unfeasible. Another example would be a large-diameter storage tank with no lid or top or with a top that has numerous vents along the circumference.
* Based on model input requirements, source emission data should be provided in metric units of measurement; however, if you are unable to provide metric emission characteristics, NCDAQ will convert from English units, as necessary.
* Although UTM coordinates are preferred, source location can also be provided in Latitude / Longitude coordinates.

**SITE DATA** - Although the site map does not have to be a detailed blue print of the site and may be hand drawn, the map is critical for conducting modeling, screen or refined, and should be drawn with care to accurately depict the information requested.

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**BUILDING DATA** - The building data is used to determine which building, building tier, or structure has the greatest influence on each of the emission sources identified. That structure is then used in the model to evaluate wake effects and downwash which can have a significant impact on offsite pollutant concentrations.

**MISCELLANEOUS DATA** - This section is intended to provide any miscellaneous data pertinent to conducting the modeling exercise for a given facility; however, since modeling details are case-specific, much of this information will be gained through the initial review of this worksheet and communication with your facility point of contact.

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**FORM D4 – EXEMPT AND INSIGNIFICANT ACTIVITIES SUMMARY**

This form is used to generate a listing of activities exempt from permitting under 15A NCAC 2Q .0102 for Small or Synthetic Minor facilities or insignificant activities under 15A NCAC 2Q .0503 for Title V facilities.

Links to these rules are listed below:

02Q .0102: <https://deq.nc.gov/media/10525/download>

2Q .0503: <https://deq.nc.gov/media/31243/open>

For each emission source that qualifies as insignificant or exempt, list a description of the emission source, the size, design production throughput capacity, or maximum design heat input capacity, and the relevant rule under which this source is designated as insignificant or exempt.

An example might be as follows:

|  |  |  |
| --- | --- | --- |
| Description of Emission Source | Size or Production Rate | Basis for Exemption or Insignificant Activity |
| IES-1  No. 2 oil-fired asphalt cement heater | 2 million Btu/hr maximum heat input | 2Q .0102(h)(1)(B) |
| IS-FB  Flyash Silo | 50 tons capacity | 2Q .0503(8) |

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**FORM D5 – TECHNICAL ANALYSIS TO SUPPORT PERMIT APPLICATION**

This form shall be completed and submitted with the permit application when it is required under 15A NCAC 2Q .0112 “Applications Requiring Professional Engineering Seal.”

Provide detailed technical calculations to support all emission, control, and regulatory demonstrations made in the application. Include a comprehensive process flow diagram as necessary to support and clarify calculations and assumptions.

Complete the attestation and affix the Professional Engineer’s seal. Complete the contact information and sign the form in BLUE INK.

15A NCAC 2Q .0112 requires that:

*(b)* *…A professional engineer registered in North Carolina shall be required to seal technical portions of air permit applications for new sources and modifications of existing sources as defined in Rule .0103 of this Section that involve:*

* 1. *design;*
  2. *determination of applicability and appropriateness; or*
  3. *determination and interpretation of performance; of air pollution capture and control systems.*

*(c) The requirements of Paragraph (b) of this Rule do not apply to the following:*

1. *any source with non-optional air pollution control equipment that constitutes an integral part of the process equipment as originally designed and manufactured by the equipment supplier;*
2. *sources that are permitted under Rule .0310 or .0509 of this Subchapter;*
3. *paint spray booths without air pollution capture and control systems for volatile organic compound emissions;*
4. *particulate emission sources with air flow rates of less than or equal to 10,000 actual cubic feet per minute;*
5. *nonmetallic mineral processing plants with wet suppression control systems for particulate emissions; or*
6. *permit renewal if no modifications are included in the permit renewal application…”*

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**FORM D6 – NORTH CAROLINA MODELING PROTOCOL CHECKLIST**

This form may be used in lieu of developing the traditional written modeling plan for North Carolina toxics and criteria pollutant modeling. It is designed to provide the same level of information as requested in a modeling protocol, as discussed in Chapter 2 of the ***Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina*.** The modeling protocol checklist is submitted with the modeling analysis. The above referenced ***Guidelines*** can be found at the following web link:

<https://deq.nc.gov/media/10692/download>

Most of the information requested in the modeling protocol checklist is self-explanatory. References to sections, tables, figures, appendices, etc. in the checklist are found in the toxics modeling ***Guidelines*** referenced above.

If you have questions concerning this form, call the DAQ Raleigh Central Office and ask to speak to one of the Air Quality Analysis Branch modelers.

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**FORM E1 – TITLE V GENERAL INFORMATION**

If your facility is classified as “Major” for Title V you must complete Form E1 and all other required “E” forms (E2 through E5) as applicable.

The form lists information pertaining to why the facility is subject to Title V requirements (mark the appropriate check boxes), and applicability of federal NESHAP standards to the emission sources at the facility (fill in the appropriate information).

In addition, the Applicant should list any additional regulation(s) which are being requested to be included in the permit shield and the associated emission source ID(s). Provide a detailed explanation as to why the shield should be granted.

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**FORM E2 – EMISSION SOURCE APPLICABLE REGULATION LISTING**

List on this form each emission source, the operating scenario (if more than one), the pollutant emitted, and all applicable state regulations. This list should include all emission sources as listed on the Form A2.

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**FORM E3 – EMISSION SOURCE COMPLIANCE METHOD**

This form includes information about the methods to be used for compliance with the applicable regulations, and whether a Compliance Assurance Monitoring (CAM) plan is required. This form must be completed for each pollutant from each permitted emission source. The applicant must indicate the monitoring requirements, test methods, recordkeeping requirements, and reporting requirements for each air pollutant listed on Form B for each emission source listed on Form A2.

**EMISSION SOURCE ID NO.** – Enter the emission source ID No. as listed on Form(s) B.

**REGULATED POLLUTANT** – Identify the pollutants listed on Form E2 for this emission source.

**APPLICABLE REGULATION** – Enter the regulation to which this emission source/pollutant is applicable from Form E2.

**ALTERNATE OPERATING SCENARIO (AOS) NO.** – If this is an alternative operating scenario rather than the primary operating scenario, specify the AOS number you assigned to this alternative operating scenario on Form E2.

**MONITORING REQUIREMENTS** - As required by 40 CFR 70.5(c)(3)(v), the permit shall contain monitoring requirements to assure compliance with the permit terms and conditions. Where the applicable requirements to not require periodic testing or instrumental or non-instrumental monitoring, periodic monitoring sufficient to yield reliable data indicating compliance with the permit condition may be required. Such monitoring requirements should be summarized in the appropriate areas below.

**IS COMPLIANCE ASSURANCE MONITORING (CAM) 40 CFR Part 64 APPLICABLE?** – Mark the appropriate check box.

**IF YES, IS CAN PLAN ATTACHED?** – Mark the appropriate check box.

**DESCRIBE MONITORING DEVICE TYPE** – Indicate the type of device which will be used to monitor the emission rate of this pollutant (if applicable).

**DESCRIBE MONITORING LOCATION** – Indicate the location of the monitoring device for this pollutant (e.g. “inlet to emission point ID No. EP254”, or “exit from baghouse ID No. CD423”).

**OTHER MONITORING METHODS (DESCRIBE IN DETAIL)** – Describe those monitoring methods or procedures for which a specific monitoring device is not required (e.g. fuel sampling, visual inspection, supplier certification, etc.) which demonstrates compliance with the applicable requirement.

**DESCRIBE THE FREQUENCY AND DURATION OF MONITORING AND HOW THE DATE WILL BE RECORDED** – Describe, per the appropriate test method if applicable, the frequency of data collection for the pollutant.

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**RECORDKEEPING REQUIREMENTS** – Where applicable, the permit may require the recording and retaining of the date, place, and time of the sampling measurement, the date(s) the sampling was performed, the company which performed the sampling, the analytical techniques used, the results of the analyses, and the operating conditions at the time of sampling. All records of required monitoring data and support information must be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application.

**DATA (PARAMETER) BEING RECORDED:** Enter all data and/or parameters to be recorded for this pollutant to ensure compliance with applicable regulations.

**FREQUENCY OF RECORDKEEPING:** Indicate the frequency of recordkeeping for the information described above.

**REPORTING REQUIREMENTS:** Generally describe the information to be reported and the frequency of submittal sufficient to comply with the applicable requirements.

**FREQUENCY:** Mark the applicable check box for the proposed frequency of report submittal.

**TESTING:** Complete this section when testing will be required to demonstrate compliance with application requirements.

**PROPOSED REFERENCE TEST METHOD:** Briefly describe the test method(s) procedures to be used to ensure compliance with emission limits. ***NOTE: The proposed test method is subject to approval and possible change during the test protocol submittal and review process.***

**REFERENCE TEST METHOD RULE AND CITATION:** Indicate the specific test method(s) as defined in the Code of Federal Regulations (40 CFR 60, Appendix A) to be used to ensure compliance with the emission limits or alternative test method(s) as may be approved by the EPA.

**TESTING FREQUENCY:** Indicate the frequency of the testing to be performed.

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**FORM E4 – EMISSION SOURCE COMPLIANCE SCHEDULE**

This form is to be used for any requirement to which the facility does not comply. The applicant must describe how compliance will be achieved. The applicant must also outline a schedule of compliance by listing the steps through which compliance will be achieved and the anticipated dates of completion for each step. This must be done for both promulgated and future regulations for which the facility may not be in compliance. If the facility is in compliance with all applicable requirements, this must be indicated on the form.

**COMPLIANCE STATUS WITH RESPECT TO ALL APPLICABLE REQUIREMENTS:** - Mark the applicable check boxes regarding the status of compliance with current and future requirements.

**IF THE FACILITY IS NOT CURRENTLY IN COMPLIANCE WITH EXISTING REQUIREMENTS OR WILL NOT BE IN COMPLIANCE WITH FUTURE REQUIREMENTS, COMPLETE SECTIONS A THROUGH F OF THE FORM.**

* + 1. **EMISSION SOURCE DESCRIPTION (INCLUDE ID NO.)** – Identify by ID No. and description the emission source(s) for which compliance will not occur at the time of permit issuance. Attach additional sheets as required if multiple sources will not be in compliance.
    2. **IDENTIFY APPLICABLE REQUIREMENT FOR WHICH COMPLIANCE IS NOT ACHIEVED:** - Identify by specific regulation number the applicable requirement for which this emission source will not be in compliance.
    3. **NARRATIVE DESCRIPTION OF HOW COMPLIANCE WILL BE ACHIEVED WITH THIS APPLICABLE REQUIREMENT** – Describe in general the plan to bring the listed emission source into compliance with the applicable requirements.
    4. **DETAILED SCHEDULE OF COMPLIANCE** – List the specific steps to be taken to bring the emission source into compliance with the applicable requirements. For each step, indicate the date of expected completion. The proposed schedule should resemble any judicial consent decree or administrative order to which the source is subject.
    5. **FREQUENCY FOR SUBMITTAL OF PROGRESS REPORTS (6 MONTH MAXIMUM)** – Reports on the progress of the compliance schedule must be submitted semiannually or more frequently. Indicate the submittal rate of progress reports for the previously described schedule of compliance.
    6. **STARTING DATE FOR SUBMITTAL OF PROGRESS REPORTS** – Indicate the initial date of submittal of the first progress report.[Return to Table of Contents](#TABLE_OF_CONTENTS)

**FORM E5 – TITLE V COMPLIANCE CERTIFICATION**

A Compliance Certification must be completed for each Title V permit application (not once for each emission source). If this information is not supplied, the application will be considered incomplete.

**SITE INFORMATION** – Indicate the site name, address, city, county, and permit number (if existing). The name of the company must the Site Name as shown on Form A1.

**CERTIFICATION** – Mark the check box for the appropriate statement.

**THE UNDERSIGNED CERTIFIES UNDER PENALTY OF LAW THAT ALL INFORMATION AND STATEMENTS PROVIDED IN THE APPLICATION, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, ARE TRUE, ACCURATE, AND COMPLETE** – This Compliance Certification must be signed and dated by a “Responsible Official” as defined in Title 15A NCAC 02Q .0520(b). Type or print the name and title of the responsible company official in the blank provided under the signature line. 40 CFR Part 70.2 defines a responsible official as meaning one of the following:

1. For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
2. The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or
3. The delegation of authority to such representative is approved in advance by the permitting authority;
4. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
5. For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. A principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. a Regional Administrator of EPA).

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**FORM E6 – COMPLIANCE ASSURANCE MONITORING (CAM) PLAN**

Complete this form for all Initial Applications, Renewal Applications, and Significant Modifications to Large Pollutant Specific Emission Units (PSEUs). For CAM-affected emission units, the applicant must submit addition information in the form of a CAM Plan as required under 40 CFR 64.

**SOURCE INFORMATION** – Enter the Facility Name, Permit Number (if existing), and the Date the form was prepared.

**BASIS OF CAM SUBMITTAL** – Mark the appropriate check box for the type of application.

**CAM APPLICABILITY DETERMINATION** – Review the criteria for CAM applicability. If the PSEU does not meet ALL the criteria listed, then Pages 2 through 4 of the form do not need to be completed.

**BACKGROUND DATA AND INFORMATION** – Complete the information in the table for each PSEU subject to CAM requirements.

**CAM MONITORING APPROACH CRITERIA** – Includes information for how monitoring is to be accomplished for each pollutant under the CAM plan. Complete the information in the table for each PSEU subject to CAM requirements.

**RATIONALE AND JUSTIFICATION** – Complete the information regarding the rationale and justification for the selection of the compliance indicators and the monitoring approach.