

**APPLICATION FOR AIR QUALITY PERMIT  
TO  
CONSTRUCT AND OPERATE  
  
INSTRUCTIONS**



Revised June 26, 2012

**OFFICE OF ENVIRONMENTAL ASSISTANCE AND PROTECTION  
FORSYTH COUNTY GOVERNMENT CENTER  
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**<http://www.forsyth.cc/EAP/>**

## **GENERAL AIR PERMIT APPLICATION SUBMITTAL REQUIREMENTS**

### **NON-TITLE V**

1. An application fee as required under FCAQTC 2Q .0200.
2. A financial qualification or substantial compliance statement (if required).
3. The appropriate application forms (refer to the matrix below)
4. Application forms signed as required by FCAQTC 2Q .0304(j)
5. The appropriate number of copies of the application as stated in the application general instructions and FCAQTC 2Q .0305(b).
6. Calculations and other supporting information Section D6.
7. Dispersion modeling report (if required).

### **TITLE V**

1. An application fee as required under FCAQTC 2Q .0200.
2. A financial qualification or substantial compliance statement (if required).
3. The appropriate application forms (refer to the matrix below)
4. Application forms signed by a Responsible Official as required by FCAQTC 2Q .0520.
5. The appropriate number of copies of the application as stated in the application general instructions. More may be requested pursuant to FCAQTC 2Q .0507(a) and (e)
6. Calculations and other supporting information Section D6.
7. Dispersion modeling report (if required).
6. Calculations and other supporting information Section D6

**If any of the required information is not contained in the permit application package, the application may be returned as incomplete.**

### **ADDITIONAL RESOURCES**

Information on fees emission estimation and other helpful information is available at::

[http://www.forsyth.cc/EAP/air\\_quality\\_regulation.aspx](http://www.forsyth.cc/EAP/air_quality_regulation.aspx)

FORSYTH COUNTY APPLICATION FOR AIR QUALITY PERMIT TO CONSTRUCT AND OPERATE  
**REQUIRED AIR PERMIT APPLICATION FORMS MATRIX**

**Revised 6/26/2012**

"X" INDICATES REQUIRED FORM  
 "XX" INDICATES REQUIRED ONLY AS APPROPRIATE

**NON-TITLE V APPLICATIONS**

	A1	A2	A3	A4	A5	A6	Section B	Section C	D1	D2	D3	D4	D5	D6
INITIAL FACILITY	X				XX		XX	XX	XX		X	X	X	X
NEW FACILITY	X			X	XX		XX	XX	XX	XX	X	X	X	X
ADMINISTRATIVE AMENDMENT	X	X												
RENEWAL	X	X					XX	XX	XX		X	X	X	X
NON-ATTAINMENT	X		X		XX		XX	XX	XX	XX	X	X	X	X
LIKE-FOR-LIKE REPLACEMENT	X	X	X											
CHANGE IN OWNERSHIP	X	X												
RELOCATION (WITHIN FACILITY)	X	X												
TAX CERTIFICATION	X					X								

**TITLE V APPLICATIONS**

	A1	A2	A3	A4	A5	A6	Section B	Section C	D1	D2	D3	D4	D5	D6	E1	E2	E3	E4	E5	E6	E7	E8	E9
INITIAL FACILITY	X				XX		XX	XX	XX		X	X	X	X	X	XX	X	X	X	X			
NEW FACILITY	X			X	XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X	X			
ADMINISTRATIVE AMENDMENT	X	X																	X	X			
SECTION 502(B)(10) CHANGE NOTIFICATION																						X	
MINOR MODIFICATION	X		X		XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X		X		
SIGNIFICANT MODIFICATION	X		X		XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X	X			
RENEWAL							XX	XX			XX	X	X	XX				XX	X	XX			X
112(g)	X		X		XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X	X			
PSD	X		X		XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X	X			
NON-ATTAINMENT	X		X		XX		XX	XX	XX	XX	X	X	X	X	X	XX		X	X	X			
LIKE-FOR-LIKE REPLACEMENT	X	X	X																				
CHANGE IN OWNERSHIP	X	X																	X	X			
RELOCATION (WITHIN FACILITY)	X	X																					
TAX CERTIFICATION	X					X																	

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## A1 - FACILITY (General Information)

Form A1 contains the general information on the facility being permitted. One Form A1 is to be completed for each permit application.

**FACILITY NAME** – The full business name of the facility as registered with the Secretary of State's Office.

**SITE ADDRESS, CITY** – The physical location where the agency would go to inspect the equipment.

**MAILING ADDRESS, CITY, STATE, ZIP CODE** – The address at which the facility receives mail.

**FACILITY LATITUDE AND LONGITUDE** – Geographic coordinates of the facility's general entrance. Common ways for determining lat/longs are by using Google Earth (<http://earth.google.com>) or Forsyth County's Geo-Data Explorer website (<http://www.forsyth.cc/tax/geodata.aspx>), or similar GIS websites. Please report latitude and longitude in decimal degrees, *not* in degrees, minutes and seconds. Latitude coordinates in Forsyth County should be between 35.972730 and 36.261614. Longitude coordinates should be between -80.035433 and -80.516445.

**HORIZONTAL COLLECTION METHOD:** Code for the method used to determine the lat/long coordinates. If you use the County's Geo-Data Explorer or other aerial photo-based method to determine lat/longs, the proper code is "019". If you use Google Earth or some other satellite photo-based online mapping site, the code is "020". If you use a standard hand held GPS to locate your facility, the code would be "016". Refer to the table at the end of this section for other options.

**HORIZONTAL REFERENCE DATUM CODE:** Code that represents the reference datum used in determining the lat/long coordinates. The county's Geo-Data Explorer utilizes the North American Datum of 1983, the code for which is "002". The code for World Geodetic System 1984, which is used by Google Earth, is 003. Refer to the table at the end of this section for other options.

**GEOGRAPHIC REFERENCE POINT CODE:** Code that represents the place for which geographic coordinates were established. FCEAD prefers that the coordinates for the general plant entrance are specified, the code for which is "101". For other options, see Geographical Reference Point Code in the code table spreadsheet. Refer to the table at the end of this section for other options.

**ON-SITE CONTACT PERSON, TITLE, PHONE, FAX, EMAIL** – The person at the facility who is responsible for providing information concerning the facility.

**LEGAL CORPORATE OWNER** – If the facility is wholly or partly owned by another entity, identify that entity.

**TECHNICAL CONTACT MAILING ADDRESS, CITY, STATE, ZIP CODE** – The person at the facility to contact for information about the permit application.

**RESPONSIBLE OFFICIAL** – The person authorized to sign permit applications. For non-Title V facilities this is defined in FCAQTC 3Q .0304(j):

- (1) for corporations, by a principal executive officer of at least the level of vice-president, or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the emissions described in the permit application form originates;
- (2) for partnership or limited partnership, by a general partner;
- (3) for a sole proprietorship, by the proprietor;
- (4) for municipal, State, federal, or other public entity, by a principal executive officer, ranking elected official, or other duly authorized employee.

For Title V facilities this is defined in 40 CFR 70.2:

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- 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:
  - i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - ii) The delegation of authority to such representatives is approved in advance by the permitting authority;
- 2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- 3) 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).

**MAILING ADDRESS, CITY, STATE, ZIP CODE** – Contact Information for the Responsible Official.

**CURRENT/PREVIOUS PERMIT NO.** – If the facility currently has a permit or had a permit at one time, please list the number.

**EXPIRATION/DISCONTINUED DATE** – If the facility currently has a permit, list the expiration date. If the facility had a permit at one time but is not now active please list the date it was discontinued or voided.

**TYPE OF OPERATION** – This is a short statement describing what is taking place at the facility (e.g., asphalt batch plant, rock quarry, cigarette manufacturing, etc.).

**PRIMARY 6 DIGIT NAICS CODE** – North American Industry Classification System (NAICS) Code (2002). The NAICS code system is a means for classifying business activity in North America. The codes can be found online at <http://www.naics.com/search.htm>.

**PRIMARY SIC CODE** – This is the Standard Industrial Classification which can be found in the Standard Industrial Classification Manual. If there are multiple processes at the facility which have different SIC codes, list the code or codes which best represent the primary activity at the facility.

**FACILITY CLASSIFICATION** – Please check the appropriate classification of the facility. In most cases a facilities classification is based on potential annual emissions. Refer to **CALCULATING POTENTIAL EMISSIONS** at end of this section for more information about potential annual emissions.

Title V - Major sources and other facilities subject to FCAQTC Section 3Q .0500 pursuant to FCAQTC 3Q .0502 and 40 CFR Part 70. (Refer to **TITLE V APPLICABILITY** below.)

Synthetic Minor - A synthetic minor facility is one where the controlled potential annual emissions of the facility are less than the major source thresholds because of one or more federally-enforceable physical or operational limitations requested by the facility. Note: Restriction on the potential annual emissions from federally enforceable emissions standards, e.g. NSPS, FCAQTC Section 3D .0500, may be included in determining potential annual emissions for Title V applicability before considering requested synthetic minor limits.

Exclusionary Small – An exclusionary small facility is one where the potential to emit of the facility is defined by rules in FCAQTC Section 3Q .0800 to be less than the major source thresholds such as graphic arts operations.

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Small – A small facility is one where the uncontrolled potential to emit of the facility is less than the major source thresholds.

**TITLE V APPLICABILITY** – Check all of the categories that apply to the facility.

CAP EMISSIONS (Criteria Air Pollutants) – Major Sources with potential annual emissions of criteria pollutants (Nitrogen Oxides, Volatile Organic Compounds, or any pollutant for which a national ambient air quality standard, NAAQS, has been promulgated) equal to or greater than the major source threshold. The major source threshold for pollutants in attainment areas for the associated NAAQS is 100 tons per year. The major source threshold for pollutants in nonattainment areas for the associated NAAQS is defined in 40 CFR 51.165(a)(1)(iv)(A).

HAP EMISSIONS (Hazardous Air Pollutants) – Major sources with potential annual emissions of a single HAP equal to or greater than or equal to 10 tons per year or potential annual of total HAP emissions equal to or greater than 25 tons per year.

OTHER EMISSIONS – Major sources with potential annual emissions of any regulated air pollutant as determined by rule equal to or greater than 100 tons per year. These include:

- a. Pollutants subject to any standard under section 111 of the Clean Air Act, e.g. NSPS,
- b. Any class I or II substance subject to a standard under Title VI of the Clean Air Act, Stratospheric Ozone Protection,
- c. Any pollutant that otherwise is subject to regulation under the Act, and
- d. Greenhouse gas emissions (GHG) except the major source threshold for GHG emissions is 100,000 tons per year of CO<sub>2</sub> equivalent emissions.

CATEGORY – Facilities in a source category designated by EPA as subject to Title V permitting requirements, 40 CFR Part 70.

**APPLICATION IS BEING MADE FOR** (Note: (TV) indicates applicability to Title V Facilities only) – Check all that are applicable.

NEW FACILITY – Application is made for construction/operation of a new facility (greenfield facility) or for a currently unpermitted facility

MODIFICATION – Check this item for construction of new emissions sources at an existing permitted facility, or for construction and/or change in operation which modifies existing sources at an existing permitted facility.

DISPERSION MODELING – Check this item if dispersion modeling is submitted with the application.

INITIAL TITLE V PERMIT – Check this item for first time Title V applications. Facilities are required to submit a Title V operating permit application within 12 months after beginning operation as a major facility.

SIGNIFICANT MODIFICATION (TV) – Applies to Title V facilities only. Significant modifications are processed in accordance with FCAQTC 3Q .0516. These procedures should be reviewed by the applicant prior to preparing an application.

MINOR MODIFICATION (TV) – Applies to Title V facilities only. Checking this item signifies that the proposed change qualifies as a minor modification in accordance with FCAQTC 3Q .0515.

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NEW SOURCE REVIEW PSD/NAA – Facilities subject to the requirements of FCAQTC 3D .0530 (PSD) and/or FCAQTC 3D .0531 (Nonattainment Areas). Contact the Forsyth County Office of Environmental Assistance and Protection (FCOEAP) for further instructions.

CASE-BY-CASE MACT – Facilities subject to Section 112(g) of the Federal Clean Air Act. Contact FCEAD for further instructions.

TAX CERTIFICATION – Check this item if requesting a tax certification an air cleaning device or equipment, facilities or land using form A6.

ADMINISTRATIVE AMENDMENT – Administrative amendments are those which do not change any substantive wording of the permit. Typically these are corrections of typographical errors, changes in the name, address or telephone numbers of any person identified in the permit, etc. Applicant must file form A1, A2. Requests for administrative amendments may also be made by letter as specified in FCAQTC 3Q .0305(a)(5) or FCAQTC 3Q .0514.

RELOCATION (WITHIN FACILITY) – Notification of the movement of an emission source from one physical location to another location within the same facility is only required if that emission source has been included in an ambient modeling demonstration

LIKE-FOR-LIKE REPLACEMENT – The replacement of existing permitted emission sources with equipment of the same size, type, and function that does not result in an increase in the emissions of regulated air pollutants, and that does not affect the compliance status, and that is described in the current permit, including the application, is not required to obtain a permit. However, sufficient information must be provided to this Office to verify that the replacement equipment meets the criteria specified in FCAQTC 3Q .0102(c)(1)(A)(vi).

RENEWAL – Check this item if requesting renewal. Title V facilities should refer to form E9. In lieu of using this form, non-Title V facilities may request renewal in a letter stating that there have been no changes in the permitted facility since the permit was last issued as specified in FCAQTC 3Q .0305(a)(2).

OWNERSHIP CHANGE – Check this item if requesting an ownership change. Form A2 requires letters be attached sent by each the seller and the buyer indicating the change or sent by either bearing the signature of both the seller and buyer. Refer to rule FCAQTC 3Q .0304 (d) and .0305(a)(4), or .0524.

OFF-PERMIT NOTIFICATION (TV) – Notification is required with no revision to the permit for changes meeting the criteria in FCAQTC 3Q .0523(b). Insignificant activities mentioned in this section are defined in Subchapter 3Q sections .0503(7) and .0503(8).

**HAVE YOU INCLUDED THE FOLLOWING?** – Pursuant to FCAQTC 3Q .0304(b) and (k) all applicants, whether Title V or Non-Title V, are required to submit the following with each permit application or the application may be returned as incomplete:

SOURCE REDUCTION & RECYCLING FORM - For a new facility or modification of an existing facility, a source reduction and recycling description (use form D3-3), and

APPLICATION FEE - The appropriate, non-refundable application processing fee in accordance with FCAQTC 3Q .0200. Refer to [http://www.forsyth.cc/EAP/Air\\_Quality\\_Regulation.aspx](http://www.forsyth.cc/EAP/Air_Quality_Regulation.aspx).

FLOW CHART/ROOF DIAGRAM/PLANT LAYOUT/PLOT PLAN/AREA PLAN - These items must be completed on separate pages and submitted as part of the application package. Two or more of these items can be placed on the same page as long as all of the elements are included and they are easily distinguished. For modifications to a facility or equipment, submit only that part of the above information which is needed to completely identify the change being made.

FLOW CHART - A flow chart of each emission source must be included. The flow chart

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will be a very useful reference for completing the permit application package and should be prepared first. It must include the flow of materials, all gas streams, control devices, emission points, fugitive emissions, etc. Solid/liquid material flow should be denoted by a solid line, while gas streams are denoted by a dotted/dashed line. One or more emission sources can be included on one page of the flow chart as long as they are easily followed.

**ROOF DIAGRAM** - Provide a roof diagram (to scale) of the facility which accurately locates all emission points, vents or outlets for which there is an assigned emission point ID. Each emission point must be labeled with the appropriate emission point ID. If the applicant opts to use a single ID No. for groups of co-located or similar emission points, each emission point in this group should be listed and assigned the common emission point ID No. The emission point ID is a unique number assigned to each emission point and the same ID must be used to reference the emission point throughout the application.

**PLANT LAYOUT** - The purpose of the PLANT LAYOUT is to identify the location of all emission sources within a facility. Provide a diagram of each floor of the facility which accurately locates all emission sources. Identify each emission source by emission source ID. The emission source

ID is a unique number assigned to each emission source which must be used to reference the source throughout the application.

**PLOT PLAN** - Provide a diagram (to scale) which includes all facility buildings and their exterior dimensions, all facility property boundaries (denote which are fenced to prevent public access), all facility roads and vehicle travel areas (denote whether paved or unpaved), surrounding public streets or roads and all outdoor storage tanks and piles. The building heights above grade must also be included. If a building has several tiers, the height of each tier must also be included.

**AREA DIAGRAM** - Provide a diagram (to scale) showing all surrounding buildings and roads within 1500 feet of the facility. Indicate the locations and types of buildings off-site (e.g., churches, residences, schools). Show roads as lines representing the road edges. Indicate street names and highway numbers. Show wooded or cleared areas by approximate boundary lines and the words "woods", "cleared", etc..

**SCHEDULE DATES** – Only complete those sections which are applicable.

PROPOSED CONSTRUCTION DATE – The date that construction will actually begin. For a new facility for which a building is being constructed this would be the date that the first permanent construction will be started, such as the footings being poured for the foundation.

COMPLETE CONSTRUCTION DATE – Anticipated date that construction will be complete.

STARTUP DATE – Anticipated date of actual "putting in motion" of any permitted equipment for any reason.

DATE BEGINNING OPERATION - This is the date that all permitted equipment would be completely debugged and operational.

**DO YOU CLAIM CONFIDENTIALITY OF DATA?** – 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 FCAQTC 3Q .0107. Any request for confidential treatment must be made **at the time the information is FIRST submitted to this Office and under separate cover** and shall state in writing why the information should be held confidential. Requests for confidentiality made at a later date may not be considered. Additionally, for each copy of the application required to be submitted, the following must be submitted: One public copy of the application form, separate those pages that are confidential and stamp confidential on each of those pages. Please note that the all application forms, including those deemed confidential by this Office, may

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be submitted to EPA. Because EPA has different guidelines for confidentiality, what may be deemed confidential by this Office may be released as public information by EPA. Therefore, it is advised that the Forsyth County Air Quality Technical Code, the North Carolina General Statutes (affected state review), and the federal laws concerning confidentiality be reviewed prior to submitting proprietary information to this Office.

**SIGNATURE OF RESPONSIBLE PERSON OR COMPANY OFFICIAL, TITLE, DATE** – The application must be signed and dated by a "responsible official" as defined in FCAQTC 3Q .0304(j) or 40 CFR Part 70.2.

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**Horizontal Collection Method Codes**

Code	Description
001	address matching-house number
002	address matching-block face
003	address matching-street centerline
004	address matching-nearest intersection
005	address matching-primary name
006	address matching-digitized
007	address matching-other
008	census block-1990-centroid
009	census/group-1990-centroid
010	census/tract-1990-centroid
011	census-other
012	GPS carrier phase static relative positioning technique
013	GPS carrier phase kinematic relative positioning technique
014	GPS code measurements (pseudo range) differential (DGPS)
015	GPS code measurements (pseudo range) precise positioning service
016	GPS code measurements (pseudo range) standard positioning service (SA Off)
017	GPS code measurements (pseudo range) standard positioning service (SA On)
018	interpolation-map
019	interpolation-photo
020	interpolation-satellite
021	interpolation-other
022	Loran C
023	public land survey quarter of a section
024	public land survey section
025	classical surveying techniques
026	zip code 5-digit-centroid
027	Unknown
028	GPS with unspecified parameters
029	GPS code measurements (pseudo range) Standard Positioning Service Corrected using Canadian Active Control System
030	interpolation-digital map source (TIGER)
031	interpolation-SPOT (Système Probatoire d'Observation de la Terre)
032	interpolation-Multi-Spectral Scanner (MSS)
033	interpolation-Thematic Mapper (TM)
034	public land survey eighth of a section
035	public land survey sixteenth of a section
036	public land survey footing
037	zip code 5-digit and its 4-digit geographic segment extension
038	zip code 5-digit and its 2-digit geographic segment extension

**Horizontal Reference Datum Codes**

Code	Description	
001	North American Datum of 1927	if the system you use to determine Lat/Long utilizes NAD27, please choose another method
002	North American Datum of 1983	utilized by Forsyth County's Geo-Data Explorer
003	World Geodetic System of 1984	utilized by Google Earth

**Geographic Reference Point Codes**

Code	Description
101	Entrance Point of a Facility, System, or Station.
102	Center of a Facility/System.
103	Boundary point for a facility or System (Facility boundary points can be singular, or part of a series of boundary points).
104	Point where water or other substance could be drawn from environment for delivery to a facility or distribution system (substance destination could range from a single residence to a large facility).
105	Point where substance is processed, treated, stored (point from which substance could be released into the environment).
106	Point where substance is released (point where substance is directly released into the environment).
107	Point where substance is monitored or sampled.
108	Points not represented by general codes 101-107, 109 or their specific codes.
109	The point where one discharge point goes directly into an intake point.

**CALCULATING POTENTIAL EMISSIONS**

Potential emissions as defined in FCAQTC 3Q .0103(29), "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 because of category defined under Rule .0503 of this section."

In determining a facility's potential emissions, three quantities (uncontrolled emissions rate, control efficiency, and operational restrictions) must be measured, calculated, or estimated. In addition, emissions from some exempt sources and fugitive emissions sources must be included in determining a facilities potential annual emissions rate.

A. Uncontrolled Potential Annual Emissions Rate - the worst case uncontrolled annual emissions rate (assuming no emissions control or operational limitations). This is determined based on the fuels, materials, etc. which produce the greatest emissions and the maximum operating conditions that the emission source is capable of operating with out operational restrictions. For example:

- i. For boilers which are permitted to combust No. 2 and No.6 fuel oil, the worst case uncontrolled emission rate is calculated with No. 6 fuel oil.
- ii. For paint spray booths which use different paints, the worst case uncontrolled emissions rate is calculated with the paint which produces the highest emission rate.

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iii. The maximum annual operation is assumed to be 8,760 hrs/yr unless it can be demonstrated that the emission source is only capable of operating for fewer hours per year, e.g. the source must be shut down on a regular schedule for required maintenance.

B. Controlled Potential Annual Emissions Rate – the annual emissions rate considering emissions control efficiency and operational limitations specified in federally enforceable permit conditions. If there are no federally enforceable permit limitations, controlled potential annual emissions are equal to the uncontrolled potential annual emissions.

Control Efficiency - the minimum control device efficiency or other parameters as specified in a federally enforceable permit limitation. If your facility's permit does not contain a federally enforceable permit condition for your control device, then the uncontrolled emission rate determines your applicability. If this application is for a new facility or a modification of an existing non-Title V facility, you may use this application as a means to establish synthetic minor limitations in order to avoid Title V permitting.

Operational Restrictions - the limitations on the operation of an emissions source as specified in a federally enforceable permit limitation. If your facility's permit does not contain a federally enforceable permit condition limiting the hours of operation or another parameter, then the uncontrolled emission rate determines your applicability. If this application is for a new facility or a modification of an existing non-Title V facility, you may use this application as a means to establish synthetic minor limitations in order to avoid Title V permitting.

C. Exempt Emissions Sources - Emissions from sources exempted from permitting because of category (FCAQTC Rule 3Q .0102 (c)(1)) are not required to be included when determining the facility-wide potential emissions for Title V applicability purposes. However, potential emissions from emission sources exempted from permitting because of size or production rate (FCAQTC Rule 3Q .0102 (c)(2)) must be included when determining the facility-wide potential emissions for Title V applicability purposes.

D. Fugitive Emissions – fugitive emissions are required to be included in the calculation of facility-wide potential annual emissions rate for Title V applicability purposes if:

- (1) the fugitive emissions consist of criteria pollutants and the facility belongs to one of the 26 stationary source categories listed in 40 CFR 70.2, or
- (2) the fugitive emissions are from stationary source categories regulated by a standard promulgated under Section 111 (NSPS) or 112 (NESHAP, including Maximum Achievable Control Technology (MACT)) of the federal Clean Air Act, but only with respect to those air pollutants that have been regulated for that category, or
- (3) the fugitive emissions are HAPs (Hazardous Air Pollutants listed in Section 112(b) of the Clean Air Act).

## A2 - NOTIFICATION/CHANGE FORM

This form must be submitted along with form A1 for the following changes:

**ADMINISTRATIVE AMENDMENT -For Non-Title V facilities**, administrative amendments are those which do not change any substantive wording of the permit. Typically these are corrections of typographical errors, changes in the name, address or telephone numbers of any person identified in the permit, etc.

**For Title V facilities**, administrative amendments are those which do not change any substantive wording of the permit. These changes are further outlined in FCAQTC 3Q .0514.

**RENEWAL -For Non-Title V facilities**, renewal is a request by the applicant to renew an existing operating permit prior to its expiration. All requests for renewal must be accompanied by a signed statement indicating that no modifications or changes in operation have occurred since the last permit issuance.

**Title V facilities** must follow the renewal procedures as outlined in FCAQTC 3Q .0513.

**CHANGE IN OWNERSHIP -Non-Title V facilities** - Applicant must file form A1, A2, and the required information specified in FCAQTC 3Q .0304 (d) and 3Q .0305(a)(4).

**Title V facilities** - Applicant must file form A1, A2, and the required information specified in FCAQTC 3Q .0524.

**RELOCATION (WITHIN FACILITY)-(BOTH TITLE V AND NON-TV FACILITIES)** -Notification of the movement of an emission source from one physical location within a facility to another is only required if that emission source has been included in an ambient modeling demonstration. Layout drawings showing the new location of the equipment as well as any changes to emission points must also be included.

### **LIKE-FOR-LIKE REPLACEMENT (BOTH TITLE V AND NON-TV FACILITIES)**

- The replacement of existing permitted emission sources with equipment of the same size, type, and function that does not result in an increase in the emissions of regulated air pollutants, and that does not affect the compliance status, and that is described in the current permit, including the application, is not required to obtain a permit. However, sufficient information must be provided to this Office to verify that the replacement equipment meets the criteria specified in FCAQTC 3Q .0102(C)(1)(A)(vi).

## A3 - EMISSION SOURCE LISTING (EXISTING FACILITY)

(New, Modified, Previously Unpermitted, Replaced, Deleted)

All emission sources (TV and non-TV) and control devices (equipment) being affected by this application must be listed in the appropriate section of this form as accurately as possible.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or co-located fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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, and for which a single process rate can be determined, 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.

**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.

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

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**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 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 ID No. indicated on the equipment being replaced listed below.

**EQUIPMENT TO BE DELETED BY THIS APPLICATION** - List all equipment(including control devices) being deleted from the permit by this application. All equipment listed will be removed from the permit.

**EQUIPMENT BEING REPLACED BY THIS APPLICATION** -List all equipment being replaced per this application. The equipment replacing these should be listed above under "Equipment to be added by this application.." using the same ID No.. Only list control devices if they are being replaced also. All equipment listed will be removed from the permit.

## **A4 - EMISSION SOURCE LISTING (NEW FACILITY)**

(Title V or non- Title V)

### **TITLE V INITIAL APPLICATIONS MUST USE FORM E3 RATHER THAN A4.**

**NEW FACILITY** - Application is made for construction/operation of a new facility (greenfield facility). Note - construction of new emissions sources at an existing permitted facility, or construction and/or change in operation which modifies existing sources at an existing permitted facility, are considered to be modifications of a facility.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or co-located fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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.

**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.

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

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

## A5 - EMISSION SOURCE/CONTROL DEVICE ALTERNATIVE OPERATING SCENARIOS

The Local regulations allow for the permitting of alternative operating scenarios for each emission source (e.g., two or more process inputs, source configurations, etc.). By incorporating these scenarios into the permit application, a facility may alternate between such scenarios without going through the permit modification process.

This form should only be completed for each emission source and/or control device that, in addition to operating under a primary operating scenario, will be operating under one or more alternative operating scenarios. This form can be used by both Title V and non-Title facilities. Examples of operating scenarios are:

- (a) For boilers that combust different types of fuels, the combustion of each fuel is classified as an operating scenario. Many boilers combust both natural gas and No. 6 fuel oil. Each of these fuels constitutes a separate operating scenario.
- (b) For reaction vessels that produce different products from different formulations, production of each product is classified as an operating scenario.
- (c) For a storage silo that stores different materials, the storage of each material is classified as an operating scenario.
- (d) For control devices that are used to control emissions from different emission streams at separate times, each emission stream that is controlled is classified as an operating scenario.

Emission sources that emit volatile organic compounds (VOCs) are considered unique in that only the product/solvent formulations that produce the worst-case VOC emissions need to be included in the permit application even though different solvents will be utilized at the emission source.

Several operating scenarios may have to be addressed for each emission source. For example, a spray booth (only for Title V sources) may coat wood furniture and be subject to FCAQTC 3D .0518, but it may also coat metal furniture and be subject to NSPS Subpart EE. In this case, an additional form B must be completed to reflect the material input change and an additional form D3-2 must be completed to identify the applicability of NSPS Subpart EE.

The permittee, contemporaneously with making a change from one operating scenario to another, will be required to record such changes in a logbook. This logbook is required to be maintained at the permitted facility for inspection by Office staff.

Identify all operating scenarios on this form by specifying the emission sources that will be affected by the operating scenarios and providing a narrative of the operating scenarios. Each alternative operating scenario will require a form B (emission source description) and/or a form C (control device description) that demonstrates the differences from the primary operating scenario (e.g., a boiler that combusts both oil and coal will need to complete forms B3 and B4). Additionally, forms D1, D3-1, D3-2, D3-3, and E4 (Title V facilities) may have to be completed for each alternative operating scenario if any of the information on the primary operating scenario forms would be different.

**EMISSION SOURCE ID NO:** Identify the emission source that will be operated under the scenarios described below.

**CONTROL DEVICE ID NO:** Identify the control device that will be operated under the scenarios described below.

**PRIMARY OPERATING SCENARIO (DESCRIBE):** Provide a brief narrative of the primary operating scenario. If this operating scenario affects or is affected by other emission sources, describe their relationship and provide ID Nos. for the other emission sources. For example:

- (a) This 50 million Btu/hr boiler is primarily powered by natural gas.
- (b) This reaction vessel is primarily used to produce copper chromium arsenate.
- (c) This silo is primarily used to store corn.
- (d) This scrubber is primarily used to control particulate emissions from an emissions stream.

**DESCRIBE ALTERNATIVE OPERATING SCENARIO - AOS NO. \_\_, (specify no.):** Provide a brief narrative of the alternative operating scenario and how it differs from the original operating scenario. Also, specify the AOS number you assign to this alternative operating scenario. If this operating scenario affects or is affected by other emission sources, describe their relationship and provide ID Nos. for the other emission sources. For example:

- (a) This 50 million Btu/hr boiler can also be powered by No. 6 fuel oil because of limited availability of natural gas.
- (b) This reaction vessel can also be used to produce magnesium chromate, thereby resulting in a different emission stream from the reaction vessel.
- (c) This silo can also be used to store refined wheat flour. Because wheat flour is of a finer texture, such storage will result in increased particulate emissions.
- (d) This scrubber can also be used to control hydrogen chloride from a different emissions stream. When this emissions stream is controlled by the scrubber, sodium hydroxide is added to the emissions stream to target the hydrogen chloride emissions.

**COMMENTS:** Provide additional comments as necessary.

## A6 - TAX CERTIFICATION

Facilities may request a Tax Certification from this Office for tax purposes according to the provisions of the General Statutes of North Carolina [G.S. 105-122(d), 105-130.10, 105-275(8)a]. Tax certifications are mailed to facilities for use with tax filings

Tax certifications for air cleaning devices or equipment, facilities or land can be applied for at time provided all necessary conditions are met. The air cleaning devices or equipment, facilities or land must:

- (a) actually be constructed and placed into operation
- (b) comply with the requirements of the Forsyth County Office of Environmental Assistance and Protection with respect to such facilities, and be effectively operated in accordance with the terms and conditions of the permit, certificate of approval, or other document of approval issued by this Office; and
- (c) is used exclusively for the purpose the reduction of air pollution from the emission of air contaminants and not merely incidental to other purposes and functions.

**ID NO:** Provide an identifier for each item that tax certification is being requested.

**AIR CLEANING DEVICE/EQUIPMENT, FACILITIES, AND/OR LAND DESCRIPTION (MUST BE USED EXCLUSIVELY FOR AIR POLLUTION CONTROL):** Provide a description for item that tax certification is being requested. Additional information (e.g. vendor specifications, installation plans) should be submitted with the application to support each request. You may reference permit applications that have previously been submitted to this Office.

**CERTIFICATION:** The preparer must sign and date the certification statement on this form and provide their title and business entity.

## B1 - EMISSION SOURCE (GENERAL)

This form is used for any process or emission source which is not covered under other specific emission source forms (e.g., fuel burning, silo, coating, etc.). MAKE AS MANY COPIES OF THIS FORM AS NECESSARY TO COMPLETE ONE FOR EACH EMISSION SOURCE. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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, and for which a single process rate can be determined, can be labeled a single emission source (e.g., a chain of reaction vessels). This description should specify the number of individual pieces of equipment that make up this emission source.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) AND/OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations). These regulations are contained in FCAQTC Rules 3D .0524, 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**DESCRIBE PROCESS** - Describe what is taking place at the emission source (e.g., Tobacco is conveyed to a conditioning drum where moisture is added. There are hoods to collect dust from the conveyor and dust pickup points at the entrance to the conditioning drum.).

**MANUFACTURER:** - Enter the name of the manufacturer for this process equipment. If multiple processes with multiple manufacturers at this emission source, label on the flow charts that you attach with this application. Enter "see flow chart" on form

**MODEL NUMBER:** - Add the manufacturer's model number for the process equipment listed above.

**DATE MANUFACTURED** - Only complete this if there is a standard which has an applicability date based on the manufacture date of the equipment. For example, the New Source Performance Standards only

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apply to equipment manufactured after a certain date as determined by the promulgation date of the individual subparts.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. If before 1972, enter "pre-1972". For new equipment this is the estimated date when operation will begin.

**OPERATING SCHEDULE ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**MATERIALS ENTERING PROCESS FOR CONTINUOUS PROCESS** -A continuous process has a continual flow of material entering and exiting the process. Usually, continuous transfer, conveying, or station to station assembly line type operations are considered continuous processes.

**TYPE** -Identify each material or product going into the process excluding the combustion of fuels. Be as specific as possible without going into the constituent level for compounds (e.g., tobacco, lead oxide, sand, gravel, asphalt, etc.).

**UNITS** - Enter the units by which each material is measured into the process (e.g., lbs., tons, square feet, cubic feet). If any unit other than weight is used please indicate in the comment section how to convert the unit to weight.

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - Enter the maximum amount of material per hour that the source is capable of processing.

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** - Enter the maximum amount of material per hour that you propose to introduce to the process keeping in mind that the operation will be limited to these amounts and all potential emissions will be based on these amounts. Explain in the comments section calculations used in determining the permitted maximum throughput.

Remember that recording and reporting requirements will become part of your permit conditions should you be required or opt to have capacity limitations.

**MATERIALS ENTERING PROCESS FOR BATCH PROCESS** -A batch operation is when the materials enter the process at one time rather than having a continuous flow of material. There is usually a holding time required to allow extensive mixing or to allow a chemical reaction or physical process (i.e., settling) to occur.

**TYPE & UNITS** - Same definition as explained under "continuous process" above.

**MAXIMUM DESIGN CAPACITY (UNIT/BATCH)** - Enter the maximum amount of material per hour that the source is capable of processing.

**REQUESTED CAPACITY LIMITATION (UNIT/BATCH)** - Enter the maximum amount of material per hour that you propose to introduce to the process keeping in mind that the operation will be limited to these amounts and all potential emissions will be based on these amounts. Explain in the comments section calculations used in determining the permitted maximum throughput.

Remember that recording and reporting requirements will become part of your permit conditions should you be required or opt to have capacity limitations.

**MAXIMUM DESIGN - BATCHES/HOUR:** -Enter the maximum number of batches that are possible to be processed given the capacity of the equipment and speed of any chemical or physical reaction.

### **REQUESTED LIMITATION**

(BATCHES/HR) -Enter the requested number of batches you propose to process in one hour. Keep in mind that the operation will be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

(BATCHES/YEAR) -Enter the requested number of batches you propose to process in one year. Keep in mind that the operation will be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

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**FUEL USED** -If fuel is consumed in the process then indicate the fuel type (e.g., dryer with a natural gas burner). If the fuel use associated with this emission source is actually a emission source (e.g., a separate boiler) then complete B2, B3, or B4 and only type in the emission source number associated with this process.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** - Enter the total maximum firing rate for all burners at this emission source based on input.

**MAXIMUM CAPACITY HOURLY FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one hour. If this is less than the maximum capacity of the fuel burner then the source will be restricted to this amount.

**REQUESTED CAPACITY ANNUAL FUEL USE** - Indicate the maximum amount of fuel you propose to burn in one year. If this is less than the maximum capacity of the fuel burners then the source will be restricted to this amount.

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, O<sub>2</sub>, SO<sub>2</sub>, NO<sub>X</sub>, or opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Comment on any calculations used in determining the permitted maximum throughput, requests for restrictions, or any other information that needs explanation on this page. Use additional pages if needed.

## B2 - EMISSION SOURCE (WOOD FIRED BURNER)

This form is used for burners/boilers which use wood as the primary fuel. As specified in FCAQTC 3Q .0102(c)(1)(E)(ii), residential wood stoves, heaters, or fireplaces are exempt from permitting unless otherwise required to be permitted under FCAQTC 3Q .0102(b). **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **AND/OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D. 1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**DESCRIBE USE** -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 comfort or to maintain facility temperature above freezing.

ELECTRICAL GENERATION - Source for the generation of electrical power.

CONTINUOUS USE - Source is intended to be used without interruption.

STAND BY/EMERGENCY - Source is only used for stand-by purposes (e.g., when electricity goes off or another boiler goes down). It is not used on a routine or regular basis and is not used to handle peak loads.

OTHER - Describe in comments.

**MANUFACTURER** - Enter name of manufacturer (e.g., Babcock & Wilcox, Continental, Cleaver Brooks, etc.). **MODEL NO.** - Enter model number for each boiler (e.g., CB 300-200)

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**DATE MANUFACTURED** - Only complete this if there is a regulatory standard that has an applicability date based on the manufacture date of the equipment. For example, the New Source Performance Standards apply to specific types of processes. Applicability is determined by the date of promulgation for the specific subpart of the regulation..

**MAXIMUM FIRING RATE (MILLION BTU/HOUR)** - Enter the maximum designed firing rate (input) of the boiler in million Btu/hour. See boiler manufacturer specifications usually stamped on the "boiler plate".

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**OPERATING SCHEDULE ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**WOOD TYPE** - Check all that are applicable.

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

**WOOD/BARK** - Check if combusting wood and bark.

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

**OTHER** - Describe in comments.

**UNCONTROLLED** - Check if there is no boiler emissions control device.

**FLYASH REINJECTION** - Check if boiler flyash is returned to boiler combustion area to be burned a second time.

**NO FLYASH REINJECTION** - Check if a mechanical control device (multicyclone) removes particulate from particulate laden gas streams.

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

**HEAT TRANSFER MEDIA** - Indicate whether STEAM or AIR is being heated by the boiler to transfer heat for its intended use.

**FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE) FUEL TYPE** - List the fuel to be combusted and the startup fuel. **BTU CONTENT** - List heat content of fuel expressed in Btu. **UNITS** - List units for applicable fuel type (e.g., Btu per pound-wood, Btu per board-foot).

**METHOD OF TUBE CLEANING** - List method of tube cleaning (e.g., lancing, tube blowing, etc).

**CLEANING SCHEDULE** - List frequency of cleaning (e.g., Daily at 8:00 AM, once a year in June while boiler is down, etc.).

**FUEL USAGE (INCLUDE STARTUP/BACKUP FUELS) -**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**UNITS** - List fuel units for the amounts listed (e.g., pounds, tons, gallons, cubic feet, etc.).

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - List the maximum amount of fuel capable of being burned per hour.

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** - Complete this section **ONLY** if you are requesting that this emission source be limited to this level. The permit will reflect this limit and specify additional recordkeeping and reporting requirements.

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, O<sub>2</sub>, SO<sub>2</sub>, NO<sub>X</sub>, or opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Add any additional information needed to evaluate the boiler.

### B3 - EMISSION SOURCE (OIL/GAS FIRED BURNER)

This form is for burners/boilers which use fuel oil or gas as primary fuel. As specified in FCAQTC 3Q .0102(c)(1)(E)(i), space heaters burning distillate oil, kerosene, natural gas, or liquefied petroleum gas operating by direct heat transfer and used solely for comfort heat are exempt from permitting unless otherwise required to be permitted under FCAQTC 3Q .0102(b). Unless otherwise required to be permitted under FCAQTC 3Q .0102, the following emission sources are exempt from permitting per FCAQTC 3Q .0102(c)(2)(b). However, for Title V facilities, these sources types must be listed on Form E2.

- (i) fuel combustion equipment, except for internal combustion engines, for which construction, modification, or reconstruction commenced after June 9, 1989, firing exclusively kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated fuels, natural gas, liquefied petroleum gas, or a mixture of these fuels with a heat input rating less than 10 million Btu per hour;
- (ii) fuel combustion equipment, except for internal combustion engines, for which construction, modification, or reconstruction commenced before June 10, 1989, firing exclusively:
  - (I) kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated fuels, or a mixture of these fuels with gaseous fuels with a heat input rating less than 30 million Btu per hour, or
  - (II) natural gas or liquefied petroleum gas with a heat input rating less than 65 million Btu per hour;
- (iii) space heaters burning waste oil if:
  - (I) the heater burns only oil that the owner or operator generates or used oil from do-it-yourself oil changers who generate used oil as household wastes;
  - (II) the heater is designed to have a maximum capacity of not more than 500,000 Btu per hour; and
  - (III) the combustion gases from the heater are vented to the ambient air;
- (iv) emergency use generators and other internal combustion engines, except self-propelled vehicles, that have a rated capacity of no more than:
  - (I) 310 kilowatts or 460 horsepower for natural gas-fired engines,
  - (II) 830 kilowatts or 1150 horsepower for liquefied petroleum gas-fired engine, or
  - (III) 270 kilowatts (electric) or 410 horsepower for diesel-fired or kerosene-fired engines.
  - (IV) 21 kilowatts (electric) or 31 horsepower for gasoline-fired engines

**All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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

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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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**DESCRIBE USE** -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 comfort or to maintain facility temperature above freezing.

ELECTRICAL GENERATION - Source for the generation of electrical power.

CONTINUOUS USE - Source is intended to be used without interruption.

STAND BY/EMERGENCY - Source is only used for stand-by purposes (e.g., when electricity goes off or another boiler goes down). It is not used on a routine or regular basis and is not used to handle peak loads.

OTHER - Describe in comments.

**MANUFACTURER** - Enter name of manufacturer (e.g., Babcock & Wilcox, Continental, Cleaver Brooks, etc.).

**MODEL NO.** - Enter model number for each boiler (e.g., CB 300-200)

**DATE MANUFACTURED** - Only complete this if there is a regulatory standard that has an applicability date based on the manufacture date of the equipment. For example, the New Source Performance Standards apply to specific types of processes. Applicability is determined by the date of promulgation for the specific subpart of the regulation..

**MAXIMUM FIRING RATE (MILLION BTU/HOUR)** - Enter the maximum designed firing rate (input) of the boiler in million Btu/hour. See boiler manufacturer specifications usually stamped on the "boiler plate".

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**OPERATING SCHEDULE ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION (%)**- Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

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**TYPE OF BOILER -**

**UTILITY** - Source is used primarily for generation of steam or electricity. The source would be greater than 100 million Btu/hour gross heat input.

**INDUSTRIAL** - Source is used primarily in an industrial operation. The source would be between 10 and 100 million Btu/hour gross heat input.

**COMMERCIAL** - The source is used primarily in a commercial operation. The source would be between 0.5 and 10 million Btu/hour gross heat input.

**RESIDENTIAL** - The source is used for residential type operation only. The source is less than 0.5 million Btu/hour gross heat input.

**METHOD OF TUBE CLEANING** - List method of tube cleaning (e.g., lancing, tube blowing, etc.).

**CLEANING SCHEDULE** - List frequency of cleaning (e.g., Daily at 8:00 AM, once a year in June while boiler is down).

**FUEL USAGE (INCLUDE STARTUP FUEL) -**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**UNITS** - List fuel units for the amounts listed (e.g., pounds, tons, gallons, cubic feet, etc.).

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - List the maximum amount of fuel capable of being burned per hour.

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** - Complete this section **ONLY** if you are requesting that this emission source be limited to this level. The permit will reflect this limit and specify additional recordkeeping and reporting requirements.

**FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE) -FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**BTU CONTENT** - List heat content of fuel expressed in Btu.

**UNITS** - List units for applicable fuel type (e.g., Btu per pound-coal, Btu per gallon- oil, or Btu per cubic foot-natural gas) .

**SULFUR CONTENT (% BY WEIGHT)** - List sulfur content of fuel expressed as % by weight to nearest 1/100th of a %. This should be the worst case that you propose to burn. There will be permit conditions limiting the fuel to this amount.

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, O<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, or opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Add any additional information needed to evaluate the boiler.

## B4 - EMISSION SOURCE (COAL FIRED BURNER)

This form is for burners/boilers which burn coal as the primary fuel. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D .1110 and 3D. 1111.

**ALTERNATIVE 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 A5.

**DESCRIBE USE** -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 comfort or to maintain facility temperature above freezing.

ELECTRICAL GENERATION - Source for the generation of electrical power.

CONTINUOUS USE - Source is intended to be used without interruption.

STAND BY/EMERGENCY - Source is only used for stand-by purposes (e.g., when electricity goes off or another boiler goes down). It is not used on a routine or regular basis and is not used to handle peak loads.

OTHER -Describe in comments.

**MANUFACTURER** - Enter name of manufacturer (e.g., Babcock & Wilcox, Continental, Cleaver Brooks, etc.). **MODEL NO.** - Enter model number for each boiler (e.g., CB 300-200)

**DATE MANUFACTURED** - Only complete this if there is a regulatory standard that has an applicability date based on the manufacture date of the equipment. For example, the New Source Performance

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Standards apply to specific types of processes. Applicability is determined by the date of promulgation for the specific subpart of the regulation..

**MAXIMUM FIRING RATE (MILLION BTU/HOUR)** - Enter the maximum designed firing rate (input) of the boiler in million Btu/hour. See boiler manufacturer specifications usually stamped on the "boiler plate".

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**TYPE OF BOILER** - Check the applicable fuel feed method. If combination, check more than one. If other, describe.

PULVERIZED - Any source utilizing coal that has been crushed to coal dust and is burned in suspension.

PULVERIZED WET BED - Source in which the ash is removed in a molten form.

PULVERIZED DRY BED - Source in which the ash is removed in a solid dry form.

OVERFED STOKER - A source continually feeding the coal by distributing the coal on the upper side of the burning bed. This is done mechanically.

UNCONTROLLED - Check if there are no boiler emissions control device.

MULTICYCLONE - A mechanical control device (multicyclone) which removes particulate from particulate laden gas streams.

UNDERFED STOKER - A source continually feeding the coal from the underside of the burning bed. This is done mechanically.

UNCONTROLLED - Check if there are no boiler emissions control device.

MULTICYCLONE - A mechanical control device (multicyclone) which removes particulate from particulate laden gas streams.

SPREADER STOKER - A source continually spreading the coal on to a moving or stationary fuel bed. Combustion occurs in suspension as well as on the bed. Spreading is done mechanically or pneumatically.

UNCONTROLLED - Check if there is no boiler emissions control device.

FLYASH REINJECTION - Boiler flyash is collected from a mechanical control device (multicyclone) and returned to boiler combustion area to be burned a second time.

WITHOUT FLYASH REINJECTION - Boiler flyash is collected from a mechanical control device (multicyclone) and is not returned to boiler combustion area.

FLUIDIZED BED

CIRCULATING - A circulating fluidized bed boiler.

RECIRCULATING - A recirculating fluidized bed boiler.

**METHOD OF LOADING**

CYCLONE - A source utilizing suspension firing of low ash fusion coal crushed to a four mesh size. Coal is fed tangentially, with primary air, to a horizontal cylindrical combustion chamber.

HANDFIRED - A source where coal is manually spread over the burning bed.

TRAVELING GRATE - A traveling grate is characterized by a coal bed three to five inches in depth and a high blast of underfired air at the rear or dumping end of the grate.

**FUEL USAGE (INCLUDE STARTUP FUEL) -**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**UNITS** - List fuel units for the amounts listed (e.g., pounds, tons, gallons, cubic feet, etc.).

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - List the maximum amount of fuel capable of being burned per hour.

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**REQUESTED CAPACITY LIMITATION (UNIT/HR)** - Complete this section **ONLY** if you are requesting that this emission source be limited to this level. The permit will reflect this limit and specify additional recordkeeping and reporting requirements.

**FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE)**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**BTU CONTENT** - List heat content of fuel expressed in Btu.

**UNITS** - List units for applicable fuel type (e.g., Btu per pound-coal, Btu per gallon- oil, or Btu per cubic foot-natural gas).

**SULFUR CONTENT (% BY WEIGHT)** - List sulfur content of fuel expressed as % by weight to nearest 1/100th of a %. This should be the worst case that you propose to burn. There will be permit conditions limiting the fuel to this amount.

**ASH CONTENT (% BY WEIGHT)** - List ash content of fuel expressed as % by weight to nearest 1/100th of a %. This should be the worst case that you propose to burn. There will be permit conditions limiting the fuel to this amount.

**METHOD OF TUBE CLEANING** - List method of tube cleaning (e.g., lancing, tube blowing)

**CLEANING SCHEDULE** - List frequency of cleaning (e.g., Daily at 8:00 AM, once a year in June while boiler is down).

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, O<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, or opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Add any additional information needed to evaluate the boiler.

## B5 - EMISSION SOURCE (INCINERATION)

This form is for sources that eliminate waste or other material thermally. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**DESCRIBE INCINERATOR** - Provide a brief description of incinerator (e.g., Medical waste incinerator that burns red bag waste for 200 bed hospital. Primary and secondary combustion chambers as well as emission point burner.).

**MANUFACTURER** - Enter name of manufacturer (e.g., Babcock & Wilcox, Continental, Cleaver Brooks, etc.).

**MODEL NO.** - Enter model number for each boiler (e.g., CB 300-200)

**DATE MANUFACTURED** - Only complete this if there is a regulatory standard that has an applicability date based on the manufacture date of the equipment. For example, the New Source Performance Standards apply to specific types of processes. Applicability is determined by the date of promulgation for the specific subpart of the regulation..

**MAXIMUM FIRING RATE (MILLION BTU/HOUR)** - Enter the maximum designed firing rate (input) of the burners in million Btu/hour. See burner manufacturer specifications.

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**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**OPERATING SCHEDULE**- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**PRIMARY CHAMBER**

**FIRING RATE** - Enter the maximum heat input to the burner in million Btu/hour.

**OPERATING TEMPERATURE** - Enter the actual chamber temperature in degrees Fahrenheit under normal operation.

**SECONDARY CHAMBER** -

**FIRING RATE** - Enter the maximum heat input to the burner in million Btu/hour.

**OPERATING TEMPERATURE** - Enter the actual chamber temperature in degrees Fahrenheit under normal operation.

**RETENTION TIME** - Enter the amount of time the gas stream remains in the secondary chamber. This can be calculated by dividing the volume of the chamber (cubic feet) by the air flow rate (cubic feet/minute) then multiplying this by 60.

**EXCESS AIR (%)** - The amount of air provided in excess of that ideally required for complete combustion expressed in percent.

**OVERFIRED/UNDERFIRED** - Overfired air is usually applied above the burning bed and is directed through openings in the charging door or incinerator walls. Underfired air is usually directed through air inlets located near the floor or hearth of primary chamber.

**AIR FLOW ENTERING UNIT** - Enter the volumetric flow rate of ambient air that is introduced into the incinerator.

**TYPE OF CHARGING** - Specify the method of charging the waste to the incinerator (e.g., manual, automatic charge, continuous).

**QUANTITY WASTE BURNED**

**HOURLY CHARGE RATE** - Enter the actual rate of material being charged in lb/hour during normal operation.

**DESIGNED MAXIMUM** -List the maximum hourly charge rate at which the unit is designed to operate.

**ANNUAL CHARGE RATE** -List the actual yearly amount that is typically burned during normal operation.

**DESIGNED MAXIMUM** -List the maximum yearly amount that you propose to operate this source. Keep in mind that the operation will be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

**WASTE COMPOSITION**

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

**AVERAGE PERCENT MOISTURE CONTENT** -Enter the average moisture content of material combusted as charged.

**WASTE TYPE** - List each type of waste that is incinerated (e.g., office paper, body parts, red bag, animal parts).

**% BY WT.** - Specify the percent by weight of each waste type burned. This should correspond to the worst case percentage for each waste type for any single charge. The total percentage could therefore be greater than 100% of the maximum design capacity.

**FUEL USAGE (INCLUDE STARTUP FUEL) -**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**UNITS** - Indicate the unit for the fuel use data entered in this section. For fuel oil, gallons; for natural gas, cubic feet.

**MAXIMUM DESIGN CAPACITY (UNIT/HR)** - List the maximum amount of fuel capable of being burned per hour.

**REQUESTED CAPACITY LIMITATION (UNIT/HR)** - Complete this section **ONLY** if you are requesting that this emission source be limited to this level. The permit will reflect this limit and specify additional recordkeeping and reporting requirements.

**FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE)**

**FUEL TYPE** - List the fuel to be combusted and the startup fuel.

**BTU CONTENT** - List heat content of fuel expressed in Btu.

**UNITS** - List units for applicable fuel type (e.g., Btu per pound-coal, Btu per gallon- oil, or Btu per cubic foot-natural gas).

**SULFUR CONTENT (% BY WEIGHT)** - List sulfur content of fuel express as % by weight to nearest 1/100th of a %. This should be the worst case that you propose to burn. There will be permit conditions limiting the fuel to this amount. This applies to coal and oil only.

**FINAL DISPOSITION OF ASH** -What is the ultimate disposition of the ash (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.).

**INCLUDE WITH APPLICATION (ON SEPARATE PAGES):** - Attach the mentioned items in this section with this B5 form. This information is required for the completeness of this application.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

## B6 - EMISSION SOURCE (PRINTING)

A printing emission source would be a single operation where inks 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 FCAQTC 3Q .0102(c)(2)(D), printing operations without air pollution control devices are exempted from permitting if they are located at a facility whose facility-wide actual emissions of volatile organic compounds are less than five tons per year, provided the emission source is not required to be permitted as specified in FCAQTC 3Q .0102(b). **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS (New Source Performance Standards) OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations)** - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**DESCRIBE PROCESS** -Describe the printing operation (e.g., A continuous roll of paper enters the five station rotogravure press. There are five burners for drying and all emissions vent to vapor recovery. Inks are all water base.).

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

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**TYPE OF PRINTING OPERATION** - Specify the type of printing operation (e.g., flexographic, offset lithographic, rotogravure, publication rotogravure, packaging rotogravure, screen printing, etc).

**WHAT IS BEING PRINTED?** - Specify what is being printed (e.g., paper, packaging, envelopes, posters, T-shirts, etc).

**CONTINUOUS PRINTING** - This is a printing process where the material being printed is supplied to the printing machine continuously in a roll. At the end of the printing process, the material is normally folded and/or cut into properly sized products.

**NUMBER OF PRINT STATIONS** - Specify the total number of print stations. A station is a location within a printing operation where coatings are applied.

**WEIGHT OF MATERIAL BEING PRINTED (LB/FT<sup>2</sup>)** - Enter the maximum weight of the material being printed per unit square foot before printing.

**MAXIMUM WIDTH OF ITEMS BEING PRINTED (INCHES)** - This is the maximum width of the material proposed to be printed. Keep in mind that the operation may be limited by permit condition to this width and recordkeeping and reporting requirements may be required.

**MAXIMUM SPEED (FT/MIN)** - This is the maximum feed rate of the material going through the printing operation. Keep in mind that the operation may be limited by permit condition to this speed and recordkeeping and reporting requirements may be required.

**ACTUAL (FT/MIN)** - This is the actual feed rate of the material going through the printing operation.

**NON-CONTINUOUS PRINTING** - This is a printing process where the material being printed is fed individually, either mechanically or by hand (e.g., Printing envelopes that are not fed from a roll. Printing posters or screen printing of T-shirts where the material is placed in the printing unit one at a time by hand).

**NUMBER OF PRINT STATIONS** - Specify the total number of print stations. A station is a location within a printing operation where coatings are applied.

**WEIGHT OF MATERIAL** - What is the maximum weight of the material before printing per 100 units of the similar materials (e.g., 5 lb/100 envelopes or 10 lb/100 posters).

**MAXIMUM DIMENSIONS (INCHES)** - Enter the maximum dimensions of material being printed by LENGTH and WIDTH. Keep in mind that the operation may be limited by permit condition to these dimensions and recordkeeping and reporting requirements may be required.

**MAXIMUM PRINTED/MINUTE** - This is the maximum number of items printed per minute (e.g., 100 envelopes/minute, 150 checks/minute). Keep in mind that the operation may be limited by permit condition to this rate and recordkeeping and reporting requirements may be required.

**COATING USE** - This section establishes what coatings are applied at each print station. A form D1 must be completed for each coating used.

**PRINT STATION** - Identify each print station. It may be simplest to number them from 1 to X starting from the first station to the last. For some printing operations there may be only one.

**COATING(S) APPLIED AT THIS STATION** - A unique coating ID must be assigned for each coating used by this source. List the ID for each coating which may be applied at each station.

**ACTUAL USAGE** - Enter the actual amount of coating applied at this station in units per hour and units per year. The units are specified at the end of this row of information.

**MAXIMUM DESIGN CAPACITY (UNIT/HR & UNIT/YR)** - Enter the maximum amount of coating capable of being applied at this station in units per hour and units per year.

**UNITS** - Specify the units used in the adjacent entries for Actual and Maximum Design Capacity. (e.g. gallons, pounds)

**NO. OF OVENS** - Specify the total number of ovens or dryers used in the drying process.

**METHOD OF HEATING** - Specify the method of heating for the bake ovens as either STEAM, DIRECT FIRED, ELECTRIC, or OTHER.

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**FUEL USED** - Many printing operations require the use of dryers or ovens to speed the drying process. Specify the type of fuel used if there are any associated with the printing process. If there is a separate boiler used for drying then this information should be supplied on either form B2, B3, or B4 depending on the type of fuel used.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** -Enter the total maximum firing rate for all burners at this emission source based on heat input.

**MAXIMUM ANNUAL FUEL USE** -Indicate the maximum amount of fuel you propose to burn at this emission source in one year. If this is less than the maximum capacity of the fuel burners then the source will be restricted to this amount.

**MAXIMUM HOURLY FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one hour at this emission source. If this is less than the maximum capacity of the fuel burner then the source will be restricted to this amount.

**ACTUAL ANNUAL FUEL USE** -Indicate the actual amount of fuel consumed in one year.

**ACTUAL HOURLY FUEL USE** -Indicate the actual amount of fuel consumed in one hour.

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Comment on any process bottlenecks, requests for restrictions, or any other information that needs explanation on this page. Use additional pages if needed.

## **B7 - EMISSION SOURCE (COATING/PAINTING)**

A coating/painting emission source is a single operation where coatings are applied to a material. As specified in FCAQTC 3Q .0102(c)(2)(D), paint spray booths or other painting or coating operations without air pollution control devices (water wash and filters that are an integral part of the paint spray booth are not considered air pollution control devices) are exempted from permitting if they are located at a facility whose facility-wide actual emissions of volatile organic compounds are less than five tons per year, provided the facility is not required to be permitted under FCAQTC 3Q .0102(b). **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE."

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS (New Source Performance Standards) OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations)** - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**DESCRIBE PROCESS** - Describe the coating operation. *Example - Wood furniture is moved by conveyor through this spray booth where reactive and nonreactive lacquers are applied. There are no VOC controls. A water wall is used for particulate control. Coatings are already mixed and are applied as received.*

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

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**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**WHAT IS BEING COATED?** - Specify what is being coated (e.g., metal furniture, wood furniture, structural steel, etc).

**TYPE OF COATING OPERATION** - Describe the method for applying the coating (e.g., flow coating, dip coating, roller coating, brush coating, air atomized spray, airless spray, electrodeposition, HVLP, electrostatic spray, powder coating, etc). Include the type of application equipment used (e.g., manual spray guns, automatic system, etc).

**CONTINUOUS COATING** - This is a painting or coating operation where the materials to be coated are introduced continuously into the spray operation.

**TYPE FEED SYSTEM** - Specify the type of system used to introduce the materials to be painted (e.g., conveyor, hangars, web-fed, trays, etc)

**MAXIMUM NO. ITEMS COATED/HOUR** - Specify the maximum number of items coated in one hour. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping/reporting requirements may be required.

**MAXIMUM SPEED** - Enter the maximum feeding speed of the line in feet per minute. Keep in mind that the operation may be limited by permit condition to this speed and recordkeeping and reporting requirements may be required.

**BATCH OPERATION** - This is a painting or coating operation where the materials to be coated are introduced into the spray operation at one time, either individually or as a group, sprayed, then removed.

**MAX. NO. ITEMS COATED/BATCH** - Specify the maximum number of materials coated/painted in one batch. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping/reporting requirements may be required.

**BATCH TIME AT MAX.** - At maximum capacity what is the shortest amount of time in minutes it takes to complete a batch. This would be the amount of time it takes to introduce the material, spray, dry (if drying is allowed as part of the operation), and remove the material. If batch time is dependent on another process at the facility, explain in the comments section.

**NUMBER OF STATIONS OR BOOTHS** - Enter the number of spray stations or spray booths in the painting/coating operation.

**NUMBER OF SPRAY GUNS** - Enter the total maximum number of spray guns that can be used in the operation at one time. The operation may be limited to this amount.

**TRANSFER EFF.** -Enter the % (expressed as decimal) of solid which actually is applied to item being sprayed, taking into consideration solid lost due to overspray, etc. Use the following default values or provide documentation for other:

0.25 - air atomized

0.25 - airless spray

0.60 - manual electrostatic spray

0.70 - nonrotational automatic electrostatic spray

0.80 - rotating head electrostatic (manual and automatic)

0.90 - dip coat and flow coat

0.95 - electrodeposition

The above numbers are typical. Your numbers may vary.

**CAPTURE EFF.** - Enter the % (expressed as decimal) of total sprayed which is captured from the process and sent to the exhaust air stream. A coating operation with 60% transfer efficiency and 98% capture efficiency will have an overall efficiency of 58.8% (.98 x .60 = .588).

**COATING USE** - This section establishes what coatings are applied at each station or booth. A form D1 must be completed for each coating used.

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**STATION** - Identify each station or booth. It may be simplest to number them from 1 to X starting from the first station to the last.

**COATING(S) APPLIED AT THIS STATION** - On each form D1 a unique coating ID has been assigned. List the ID for each coating which may be applied at each station.

**NO. GUNS** -Enter the maximum number of spray guns you propose for this station/booth.

**ACTUAL USAGE** - Enter the actual amount of coating applied at this station in gallons per hour and gallons per year.

**MAXIMUM DESIGN CAPACITY (GAL/HR & GAL/YR)** -Enter the maximum amount of coating capable of being applied at this station in gallons per hour and gallons per year.

**TYPE OF SPRAY GUNS/NOZZLES** -Specify the type of spray guns or nozzles used at this emission source. Examples are: air atomized; airless; high volume low pressure; Electrostatic bell and disk; etc.

**NO. OF OVENS** - Specify the total number of ovens or dryers used in the drying process.

**METHOD OF HEATING** - Specify the method of heating for the bake ovens as either steam, direct fired, electric, or other.

**FUEL USED** - Many coating operations require the use of dryers or ovens to speed the drying process. Specify the type of fuel used if there are any associated with the process. If there is a separate boiler used for drying then this information should be supplied on either form B2, B3, or B4 depending on the type of fuel used.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** -Enter the total maximum firing rate for all burners based on heat input.

**MAXIMUM ANNUAL FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one year. If this is less than the maximum capacity of the fuel burners then the source will be restricted to this amount.

**MAXIMUM HOURLY FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one hour. If this is less than the maximum capacity of the fuel burner then the source will be restricted to this amount.

**ACTUAL ANNUAL FUEL USE** -Indicate the actual amount of fuel consumed in one year.

**ACTUAL HOURLY FUEL USE** -Indicate the actual amount of fuel consumed in one hour during normal operation.

**DESCRIBE ANY MONITORING DEVICES, GAUGES OR TEST PORTS** - List and describe any emission point monitoring devices, gauges, or test port locations used for monitoring compliance parameters or used in demonstrating compliance. Provide any calibration or maintenance activities and frequency (e.g., continuous emission monitors, opacity monitors, emission point temperature, steam flow, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Comment on any process bottlenecks, requests for restrictions, or any other information that needs explanation on this page. Use additional pages if needed.

## **B8 - EMISSION SOURCE (MIXING/PRODUCTION OF INKS/COATINGS)**

This form is for any process used for the manufacture of solvent containing coatings, inks, or other solvent containing products. Usually, this emission source will involve a batch type of process. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE."

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS (New Source Performance Standards) OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations)** - These regulations are contained in FCAQTC Rule 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**DESCRIBE PROCESS** - Describe the mixing operation (e.g., Inks are mixed for distribution in 55 gallon drums. This emission source includes all equipment in mixing room No. 2. All equipment is covered at all times, except during material transfer.).

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**EQUIPMENT SUMMARY** -

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**TYPE** -List equipment for which a quantity of throughput can be measured. They must be similar in function and identical in capacity to list together on the same line (e.g., 100 gallon mixers, 55 gallon portable mixers, etc).

**CAPACITY** -Enter the maximum capacity this piece of equipment can process per batch. If several similar sources are included on one line enter the capacity of a single source.

**NO. OF UNITS** -Enter the number of sources identical to this type and capacity of equipment.

### **PRODUCT THROUGHPUT (GAL)**

**ACTUAL (HOURLY)** -List the actual hourly throughput in gallons that is typically processed through this emission source. This would be the total gallons/hour from all of the equipment types listed.

**ACTUAL (ANNUAL)** - List the actual annual throughput in gallons that are typically processed through this emission source (i.e., the total gallons for all of the equipment types).

**MAXIMUM (HOURLY)** -List the maximum hourly throughput in gallons that you propose to process in this emission source. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

**MAXIMUM (ANNUAL)** -List the maximum annual throughput in gallons that you propose to process in this emission source. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

**MAXIMUM VOC WEIGHT (LB/GAL)** -Enter the permitted maximum lb/gal by weight of Volatile Organic Compounds (VOC) in the product you are producing that you propose for this emission source. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

**EVAPORATION RATE (% OF THROUGHPUT)** - Enter the evaporation rate as a percent of the total product throughput.

**METHOD FOR DETERMINATION** -Enter your method for determining the above "Evaporation Rate" (e.g., material balance, test results, literature search, Federal//State/Local Factor, etc).

**NO. OF COOKERS** - Specify the total number of heated vessels or cookers used in the heating process.

**METHOD OF HEATING** - Specify the method of heating for the cookers as either steam, direct fired, electric, or other (specify).

**FUEL USED** - Many mixing operations require the use of cookers to complete the chemical integration of the product. Specify the type of fuel used if there are any associated with the mixing process. If there is a separate boiler used for cooking then this information should be supplied on either form B2, B3, or B4 depending on the fuel used.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** -Enter the total maximum firing rate for all burners based on heat input.

**DESIGNED MAXIMUM ANNUAL FUEL USE** -Indicate the maximum amount of fuel capable of being burned in one year.

**DESIGNED MAXIMUM HOURLY FUEL USE** -Indicate the maximum amount of fuel capable of being burned in one hour.

**ACTUAL ANNUAL FUEL USE** -Indicate the actual amount of fuel consumed in one year.

**ACTUAL HOURLY FUEL USE** -Indicate the actual amount of fuel consumed in one hour.

**DESCRIBE DEVICES USED TO REDUCE EVAPORATION** - Describe any device that is used at this emission source to reduce evaporation (e.g., bottom filled, sealed lids, etc).

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Comment on any process bottlenecks, requests for restrictions, or any other information that needs explanation on this page. Use additional pages if needed.

## **B9 - EMISSION SOURCE (STORAGE SILO/BIN)**

Many industries use storage vessels to store ingredients and final products. The material stored is usually bulk solids. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**DESCRIPTION OF PROCESS** - Describe the process (e.g., Lead oxide is loaded into storage vessel pneumatically from truck. It is stored for use in battery manufacturing.).

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**MATERIAL STORED** -List what material is being stored in vessel (e.g., cement, lead oxide, sand).

**DENSITY OF MATERIAL** -What is the weight (pounds) of a cubic foot of material.

**CAPACITY** -List the capacity of vessel in CUBIC FEET and also in TONS.

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**DIMENSIONS** - For a round vessel give the dimensions (feet) in HEIGHT and DIAMETER. The height should be the height of the vessel only and should not include any structural supports. If the storage vessel is not round, give the dimensions of the vessel in LENGTH, WIDTH, and HEIGHT.

**ACTUAL ANNUAL PRODUCTION THROUGHPUT** - List the actual annual throughput for the previous calendar year. For new sources, list the projected throughput for this emission source.

**MAXIMUM ANNUAL PRODUCT THROUGHPUT (TONS)** - List the maximum annual throughput in tons that you propose for this emission source. Keep in mind that the operation may be limited by permit condition to this amount and recordkeeping and reporting requirements may be required.

**PNEUMATICALLY FILLED** -If vessel is filled pneumatically, check which is applicable.

BLOWER - Air flow created by a blower.

COMPRESSOR - Air flow created by a compressor

**NO. FILL TUBES** - Enter the number of fill tubes used at one time to fill the silo.

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

**MECHANICALLY FILLED** -If vessel is filled mechanically, check which is applicable.

**SCREW CONVEYOR** -Vessel is filled by screw conveyor.

**BELT CONVEYOR** -Vessel is filled by belt conveyor.

**BUCKET ELEVATOR** -Vessel is filled by bucket elevator.

**OTHER** - If filling method is not listed please describe.

**MOTOR HP** -List the horsepower of motor driving system.

**FILLED FROM** -Check where the material, being filled into silo, is coming from.

RAILCAR - Material loaded from railroad car.

TRUCK - Material loaded from tractor/trailer type motor vehicle.

STORAGE PILE - Material loaded from a storage pile.

**OTHER** -If other, describe.

**MATERIAL IS UNLOADED TO** -Describe where the material goes as it leaves the silo for use. If it goes to another emission source include the source ID No. (e.g., boiler, cement truck, etc).

**BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?** - Describe how material is unloaded from vessel (e.g., gravity, pneumatically, screw conveyor, etc).

**MAXIMUM FILLING RATE OF MATERIAL (TONS/HOUR)** -What is the maximum rate that you plan to fill the silo. The permit to operate may have conditions limiting the filling rate to this rate. There may be permit recordkeeping and reporting requirements associated with these amounts.

**MAXIMUM UNLOAD RATE OF MATERIAL (TONS/HOUR)** -What is the maximum rate that you plan to use the material in the silo. The permit to operate may have conditions limiting the use to this rate. If the material is input directly into another emission source then the limits will probably be associated with that emission source.

**DESCRIBE EMISSION CONTROLS WHILE LOADING SILO** -Describe how emissions to the atmosphere are reduced while loading the silo. If there is a pollution control device then complete the proper form C for the control(s).

**DESCRIBE EMISSION CONTROLS WHILE UNLOADING SILO** -Describe how emissions to the atmosphere are reduced while unloading the silo. If there is a pollution control device, then complete the proper pages for the control(s). If the controls are associated with another emission source then also address the controls as part of that emission source.

**DESCRIBE ANY MONITORING OR WARNING DEVICES** - Describe any warning devices alerting the operator that the silo is full. Describe any gauges such as pressure drop, PSI, etc.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Add any additional information needed to evaluate the source.

## **B10 - EMISSION SOURCE (FIXED ROOF STORAGE TANK)**

**All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**EMISSION SOURCE DESCRIPTION** - Describe each emission source for which application is made. For fugitive emissions, enter the appropriate equipment such as valves, pumps, compressors, etc. The following storage tanks, unless otherwise required to be permitted in FCAQTC 3Q .0102(b), are exempted from permitting in accordance with FCAQTC 3Q .0102(c)(2)(A). However, for Title V facilities, these sources must be listed on form E2.

- (i) above-ground storage tanks with a storage capacity of no more than 1100 gallons storing organic liquids with a true vapor pressure of no more than 10.8 pounds per square inch absolute at 70° F; or
- (ii) underground storage tanks with a storage capacity of no more than 2500 gallons storing organic liquids with a true vapor pressure of no more than 10.8 pounds per square inch absolute at 70° F.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE."

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS** (New Source Performance Standards) **OR NESHAP** (National Emission Standards for Hazardous Air Pollutants Regulations) - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**ALTERNATIVE 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 A5.

**OPERATION DATE** - For equipment already in operation this is the date when operation began. For new equipment this is the estimated date when operation will begin.

**DESCRIPTION OF STORAGE TANK** - Describe fixed roof storage tank and tank condition. Include the roof and shell paint shade or type and condition, use for liquid etc. (e.g., Above ground vertical fixed roof tank. Tank shell is painted white. Toluene is stored for use in ink mixing process).

**SEASONAL VARIATION** - Enter the percent of the total annual throughput for this source for each quarter. A source that operates year round with no fluctuations would have 25 in every block.

**LIQUID STORED** - List name(s) of organic liquid(s) or volatile organic liquid(s) being stored. Where mixtures of organic liquids are stored include a form D1.

**TRUE VAPOR PRESSURE (PSIA)** - List the true vapor pressure in (PSIA) pounds per square inch absolute. True vapor pressure is the equilibrium partial pressure exerted by a volatile organic liquid.

**DAILY AVERAGE LIQUID SURFACE TEMP. (R)** - List the daily average liquid storage temperature expressed in R (Rankin = F + 459.7). The average liquid surface temperature may be based on liquid surface temperature measurements from the tank.

**VAPOR MOLECULAR WEIGHT (LB/LB MOLE)** - List the molecular weight of the vapor(s) expressed in pound per pound mole. Molecular weight of vapor can be determined from reference materials which list physical properties of selected petroleum liquids or volatile organic liquids or by analyzing vapor samples.

**AVERAGE STORAGE TEMP. (F)** - List the daily average ambient temperature in degrees Fahrenheit. The daily average ambient temperature may be determined by dividing the daily maximum ambient temperature (F) plus the daily minimum ambient temperature by 2.

**CAPACITY**

**GALLONS** - List tank capacity in gallons for liquids.

**TONS** - List tank capacity in tons.

**DIMENSIONS (FEET)**

**HEIGHT** - List tank height in feet.

**DIAMETER** - List tank diameter in feet.

**TANK ROOF HEIGHT (FT)** - List overall tank roof height in feet as measure from bottom of tank. List height at highest point of fixed roof if cone or dome roof. This is used to calculate tank vapor space volume.

**TANK LIQUID HEIGHT (FT)** - List average height of the stored liquid as measure from bottom of tank. This is used to calculate tank vapor space volume.

**TANK SHELL HEIGHT (FT)** - List tank shell height in feet as measure from bottom of tank. Shell height is the highest elevation of vertical cylinder of tank.

**TANK ROOF/SHELL COLOR** - List tank paint color for roof and shell.

**PAINT CONDITION** - State the condition of the paint. (ie. poor, fair, good, new)

**MAX. FILLS PER DAY** - List maximum number of times per 24 hour day tank filling activities could occur at maximum usage rates.

**MAX. FILLING RATE (GAL/MIN)** - List maximum filling rate in gallons per minute.

**DURATION OF FILL (HOUR/FILL)** - List duration of fill in hours per fill.

**MAX. THROUGHPUT PER YEAR (GAL)** - List the maximum potential throughput per year (annual) in gallons.

**TURNOVERS PER YEAR –**

**MAXIMUM** - List maximum number of turnovers per year (dimensionless) that you desire this tank to be permitted. Number of turnovers per year is derived by dividing total throughput per year in gallons by tank capacity in gallons.

**ACTUAL** - List the actual number of turnovers per year for this tank for the previous calendar year. For new tanks, list the estimated actual number of turnovers for the first year of operation.

**DESCRIBE ALL MAINTENANCE PROCEDURES** - Describe all maintenance procedures performed on the storage tank(s) and related equipment.

**DESCRIBE ANY MONITORING OR WARNING DEVICES (SUCH AS LEAK AND FUME DETECTION INSTRUMENTATION)** - Describe any liquid or bulk storage monitoring or warning devices and quality assurance procedures to assure the devices are operating properly.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Enter any supplementary comments, information, etc. as necessary.

## **B11 - EMISSION SOURCE (AIR STRIPPING OF GROUNDWATER)**

This page is for equipment which pumps contaminated groundwater from the subsurface then strips out the contaminants by mixing the contaminated water with air.

**All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS (New Source Performance Standards) OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations)** - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**DESCRIPTION OF EMISSION SOURCE** - Provide a brief description of unit. Example - Groundwater stripper for groundwater clean up of toluene from leaking underground storage tank.

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**DATE FIRST PUT INTO OPERATION** - This must be completed for all equipment already in operation when the application is completed.

**WHAT WILL DETERMINE WHEN UNIT WILL BE SHUT DOWN** - Provide the criteria which will determine when the unit will be shut down. If the system is to be shut down when the inlet Volatile Organic Compound (VOC) concentration of groundwater entering the system (or the VOC concentration in the groundwater) reaches a certain level, specify the concentration level. If the decision is based on an operating period, specify the length of the operating period.

**LIQUID FLOW RATE** - Provide the volumetric flow rate of groundwater that enters the air stripping system. This flow rate should be equal to the summation of the flow rates in all the stripping columns.

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**ACTUAL** - Specify the actual (during normal operation) groundwater flow rate to the stripper in gal/min.

**DESIGNED MAX.** - Specify the designed maximum amount (in gallons) of groundwater that can enter the stripper in gal/min.

**REMOVAL EFFICIENCY OF DESIGN CONTAMINANT** - This is the design stripping removal efficiency of the stripping unit. The removal efficiencies might be different for different compounds. Use the design efficiency of the stripper for the target compound.

**TARGET EFFLUENT CONCENTRATION OF DESIGN CONTAMINANT** - This is the liquid effluent concentration of the target volatile organic compound after the stripper. Use units of milligrams per liter (mg/l).

**NO. OF WELLS** - List the number of wells from which groundwater is being pumped.

**STRIPPING TOWER DATA** - Specify the stripping tower parameters. Include all manufacturer's literature.

**NO. OF TOWERS** - The total number of stripping columns of the unit.

**TOWER DIAMETER** - Specify the packed tower inside diameter of the packed tower.

**PACKING HEIGHT** - Specify the height of packing in the stripping tower.

**TOTAL HEIGHT** - Specify the total tower height.

**PACKING MATERIAL** - Specify the type of packing material used in the packing tower.

**DESCRIBE HOW CONTAMINANT CONCENTRATIONS WERE DETERMINED** - Describe the procedures used for determining the groundwater contaminant concentrations. Include the analysis results.

**CONTAMINANTS** - Specify the names of the contaminants detected in groundwater.

**CAS #** - Specify the Chemical Abstract Service registry number (CAS #) for this contaminant.

**CONCENTRATION** - Provide the concentration (mg/l) of the total volatile organic compound entering the air stripper as well as the worst case concentrations for each of the individual contaminants. This is not necessarily the concentration in the groundwater.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Provide any additional comments needed to evaluate the operation.

## **B12 - EMISSION SOURCE (VACUUM EXTRACTION OF SOIL CONTAMINATION)**

This page is for systems that draw air from the soil to correct soil contamination.

**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.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_. Groups of identical emission sources can be listed on a single form B if all the emission source ID Nos. are also listed on that form B (e.g., ID Nos. ES1, ES2, and ES3).

**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 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. For fugitive emissions enter "FUGITIVE".

**INDICATE WHETHER THIS SOURCE IS SUBJECT TO NSPS (New Source Performance Standards) OR NESHAP (National Emission Standards for Hazardous Air Pollutants Regulations)** - These regulations are contained in FCAQTC Rules 3D .1110 and 3D .1111.

**DESCRIPTION OF EMISSION SOURCE** - Provide a brief description of unit.

*Example - Vacuum extraction system for cleanup of gasoline contaminated soil resulting from leaking underground storage tank.*

**OPERATING SCHEDULE- ACTUAL HOURS/DAY, DAYS/WEEK, WEEKS/YEAR** - Enter the actual hours/day, days/week, weeks/year this emission source is expected to be in operation.

**DATE FIRST PUT INTO OPERATION** - This must be completed for all equipment already in operation when the application is completed.

**WHAT WILL DETERMINE WHEN UNIT WILL BE SHUT DOWN** - Provide the criteria which will determine when the unit will be shut down. If the system is to be shut down when the inlet Volatile Organic Compound (VOC) concentration in the contaminated soil vapor entering the system (or the VOC concentration in the contaminated soil) reaches a certain level, specify the concentration level. If the decision is based on an operation period, specify the length of the operating time period.

**TYPE OF OPERATION** - Specify the method of operating the vacuum extraction system.

**CONTINUOUS** - The system is operated continuously without being shut down except for periods of malfunction or breakdown or maintenance.

**PULSED** - A "pulsed" system is the one that is operated and shut down in a cyclic pattern, or the air extraction rate is systematically increased or decreased.

**AIR/WATER SEPARATOR** - Indicate whether or not there is an air/water separator employed after the vacuum pump(s).

**INLET WELL DATA** - These are the wells used to introduce ambient air into the ground.

**# AIR WELLS** - Specify the number of wells used for introducing ambient air.

**AVG. DEPTH** - Specify the average well depth that is the distance from the land surface to the bottom of the wells.

**AVG. DIAMETER** - Specify the average inside diameter of the wells.

**MAX. SPACING** - Specify the maximum distance between the two farthest wells.

**EXTRACTION WELL DATA** - These are the wells from which the contaminated air is withdrawn.

**# WELLS** - Specify number of wells used for the extraction of the solvent laden air from the ground.

**AVG. DEPTH** - Specify the average extraction well depth below the land surface.

**AVG. DIAMETER** - Specify the average extraction well inside diameter.

**RADIUS OF INFLUENCE** - Specify the average radius of influence of extraction wells.

**TOTAL EXTRACTION FLOW RATE (SCFM)** - The total maximum air extraction rate at Standard Conditions (25 degrees centigrade, 1 atm.).

**TOTAL EXHAUST FLOW RATE (SCFM)** - Specify the total gas exhaust flow rate at Standard Conditions.

**DESCRIBE HOW CONTAMINANT CONCENTRATIONS WERE DETERMINED** - Describe the procedures for determining the soil contaminant concentrations. Include the analysis results.

**CONTAMINANTS** - Specify the names of the compounds detected in the contaminated soil.

**CAS #** - Specify the Chemical Abstract Service registry number (CAS #) for each contaminant.

**CONCENTRATION** - Provide the concentration (PPM-volume) of the total volatile organic compound entering the soil vapor extraction unit as well as the concentrations for each of the individual contaminants. This concentration is the volume of each of the contaminants in the vapor phase per unit volume of extracted air (not the mass of contaminant per unit mass of soil). Maximum concentrations from all lab results should be entered.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Provide any information that may be needed for evaluating this unit.

## B13 - SOLVENT USE: CLEANUP ACTIVITIES

This form is intended to track only those cleanup activities that are an integral and routine part of the operation of an emission source. These are activities that serve to clean process material from emission sources, to enable continued operation of the equipment. Examples include: stripping paint spray booth walls and filters of accumulated overspray; equipment cleanup between product changes; cleaning spray gun nozzles between color changes, on an as needed but recurrent basis, or on a routine schedule to prevent clogging. This would **not** include solvents used during repair or maintenance of process equipment. Nor does the form apply to solvents used in facility housekeeping or maintenance activities such as floor stripping, painting buildings, or roof repairs. Parts cleaners or other types of degreasers are considered to be emission sources and should be described on form B1.

**SEASONAL VARIATION** -enter the percent of the total annual consumption of cleanup products which occurs during each calendar quarter. Activities that are evenly distributed throughout the year would show 25% in each of the four blocks.

**ATTACH FORM D1 FOR EACH** -For each solvent-containing product used in emission source cleanup activities, attach a Product Analysis form, D1.

**EMISSION SOURCE ID(S)** -Enter the unique emission source ID number(s) that was assigned to process equipment previously described on forms B1 - B12 that use the adjacent cleanup product.

**CLEANUP PRODUCT** -List the name of the cleanup product used in cleanup activities associated the emission source(s) listed in the adjacent column. This product name should be the same as that used in the corresponding Product Analysis form, D1.

### PRODUCT USAGE -

**ACT/HR** -The actual quantities of each cleanup product used on an hourly basis under typical operational conditions. Specify the units of measure in the last column on the page.

**ACT/YR** -The actual quantities of each cleanup product used in the most recent 12 month period. Specify the units of measure in the last column on the page.

**MAX/HR; MAX/DAY; MAX/YR** - List the maximum quantities that could be used, given worst case production conditions and maximum 24-hour operation of the emission sources. Specify units of measure in the last column on the page.

**UNITS** -units of measure of the quantities of cleanup product used. Gallons, liters, pounds, etc.

**INDICATE ALL REQUESTED STATE AND FEDERALLY ENFORCEABLE PERMIT LIMITS AND DESCRIBE HOW THESE LIMITS ARE MONITORED AND WITH WHAT FREQUENCY** - If any state and federally enforceable permit limits are to be placed on this source (e.g., the hours of operation, the material input rates, the emission rate, etc.) identify these here and identify the motivating regulation for such limitations.

**COMMENTS** - Add any comments as necessary to clarify the information or the processes represented in this form.

## C1 - CONTROL DEVICE (GENERAL)

Use this form to describe any control device not included on Forms C2 through C9. This form allows for the entering of general control device parameters. A complete description of your control device may include other parameters not on this form. It is important that you attach manufacturer's specification, schematics, and all other drawings necessary to describe this control device and its relationship to its emission source. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** -Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a brief description of the control device. Include such information as other devices used in conjunction with this device; number of compartments, etc.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation needed to maintain the desired efficiency.

**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** -Enter the minimum and maximum outlet temperature during normal operation.

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**INLET AIR FLOW RATE (ACFM)** -Enter the actual air flow rate in cubic feet per minute entering the control device during normal operation.

**OUTLET AIR FLOW RATE (ACFM)** - Enter the actual air flow rate in cubic feet per minute exiting the control device during normal operation.

**INLET AIR FLOW VELOCITY (FT/SEC)** -Enter the actual air flow velocity in feet per second entering the control device during normal operation.

**OUTLET AIR FLOW VELOCITY (FT/SEC)** - Enter the actual air flow velocity in feet per second exiting the control device during normal operation.

**INLET MOISTURE CONTENT (%)** - Enter the percent moisture content of the emission stream entering the control device.

**COLLECTION SURFACE AREA (FT<sup>2</sup>)** - Enter the area of pollutant collecting material in square feet.

**FUEL USED** - Enter the type(s) of fuel(s) used in the device.

**FUEL USAGE RATE** - Enter the maximum fuel usage rate on an hourly or annual basis.

**DESCRIBE STARTUP PROCEDURES** - Describe procedures for starting the equipment noting emissions and estimated rates where possible.

**DESCRIBE MAINTENANCE PROCEDURES** -Routine maintenance is one of the most important factors in maintaining continual compliance using any control device. Describe all maintenance procedures including the monitoring of pressure drops, temperature, dust removal, opacity, etc.

**DESCRIBE ANY AUXILIARY MATERIALS INTRODUCED INTO THE CONTROL SYSTEM** - Describe any auxiliary materials (e.g., lime, caustic acid, etc.) introduced into the control system.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.** – List any devices and/or gauges installed on the system (e.g., manometers, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Describe any test ports available for inspectors to conduct measurements of temperature and pressure drop. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

**ATTACH MANUFACTURER'S SPECIFICATIONS, SCHEMATICS, AND ALL OTHER DRAWINGS NECESSARY TO DESCRIBE THIS CONTROL DEVICE AND ITS RELATIONSHIP TO ITS EMISSION SOURCE**

## C2 - CONTROL DEVICE (FABRIC FILTER)

A fabric filter removes dust from a gas stream by passing the stream through a porous fabric (e.g., bagfilter, baghouse, HEPA filter). Dust particles form a more or less porous cake on the surface of the fabric. It is this cake that does the majority of the filtration. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** -List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be # 1 of 2units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a brief description of the control device. Include such information as other devices used in conjunction with this device; number of compartments, etc. *Example - This fabric filter is the second of two control devices with the first unit being a cyclone (CD1). This control system collects sanding dust from the #3 sanding room. It has 2 separate compartments each of which can be operated while the other is shut down for maintenance.*

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H2O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H2O during normal operation needed to maintain the desired efficiency. A gauge indicating operating pressure drop must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** -Enter the actual inlet air flow rate in cubic feet per minute during normal operation.

**AIR TO CLOTH RATIO** - This is the ratio between the air flow rate (ACFM) listed above and the filter surface area listed in the next block (e.g., 10,000 ACFM divided by 1000 square feet of filter area would give an air to cloth ratio of 10:1).

**FILTER SURFACE AREA (FT<sup>2</sup>)** -The total square feet of filter surface area. Round off to nearest whole number.

**FILTER MAXIMUM OPERATING TEMPERATURE (F)** - Enter the maximum operating temperature for the filter material.

**FILTER MATERIAL** - What is the filter material composed of. This can be obtained by contacting the supplier of the filters (e.g., fiberglass, nomex, wool, cotton, nylon, teflon, etc).

**DESCRIBE CLEANING PROCEDURES** -Most fabric filters have a mechanism to clean the filter media on a regular basis. The most common techniques are mechanical, reverse air, air pulse, and sonic cleaning. There are some types that require the replacement of the filter media rather than cleaning. Other parameters to include would be the frequency of cleaning, on-stream or off-stream cleaning, duration of cleaning, etc. Describe the cleaning procedures.

**CLEANING TIME** - The time required for each cleaning cycle.

**TIME BETWEEN CLEANING** -The time between cleaning cycles.

**DESCRIBE MAINTENANCE PROCEDURES** -Routine maintenance is one of the most important factors in maintaining continual compliance using a fabric filter. This is especially true when abrasive particulate is being collected. Describe all maintenance procedures including the monitoring of pressure drops, temperature, dust removal, opacity, etc. Describe methods used and frequency to detect leaks and holes in filter media.

**DESCRIBE MOISTURE BLINDING, CHEMICAL RESISTIVITY, AND/OR SPECIAL OPERATING CONDITIONS** - Describe any possible factors that would result in moisture blinding of the filter. Address the chemical resistivity of the filter if the pollutant is corrosive. Describe any special or unique operating conditions used for this filter.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., magnahelics, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Describe any test ports available for inspectors to conduct measurements of temperature and pressure drop. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** -Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

### **C3 - 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. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** -If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Describe type of ESP: single stage, two stage, low voltage, high voltage, hot side, cold side, other (describe), negative or positive corona. Also, list any ancillary equipment: level detectors, hopper insulation, hopper heaters, and weather enclosures.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H2O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H2O during normal operation needed to maintain the desired efficiency. A gauge indicating operating pressure drop must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

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**OUTLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** -Enter the actual air flow rate in actual cubic feet per minute during normal operation.

**COLLECTION PLATE AREA (FT<sup>2</sup>)** - Enter total ESP collection plate surface area expressed in square feet. See manufacturers specifications.

**NO. OF COMPARTMENTS** - List the number of compartments and their arrangement (series or in parallel sections).

**NO. OF CELLS PER COMPARTMENT** - List the number of cells per compartment.

**PARTICLE MIGRATION VELOCITY (FT/SEC)** - Enter the average migration(drift) velocity for the collected particles.

**PARTICLE DENSITY (LB/FT<sup>3</sup>)** - Enter the average particle density entering the ESP.

**FIELD STRENGTH (VOLTS)**

**CHARGING** - Enter the strength of the field (in volts) imparting the charge to the particles to be collected.

**COLLECTING** - Enter the strength of the field (in volts) where particles are to be collected.

**CORONA POWER (WATTS/1000 CFM)** - List corona power (input) in watts per 1000 CFM (this information should be contained in the manufacturer specifications).

**ELECTRICAL USAGE (KW/HR)** - List electrical usage in kilowatts per hour.

**RESISTIVITY OF POLLUTANT (OHM-CM)** - List the resistivity of pollutant to be collected by the unit. Resistivity is the overall resistance to charge dissipation to the ESP collection plate.

**GAS VISCOSITY (POISE)** - If the gas stream is other than predominantly air, list the viscosity of the gas stream in poise.

**DESCRIBE CLEANING PROCEDURES** -List cleaning method(s) used.

**DESCRIBE ANY MAINTENANCE PROCEDURES:** - Describe maintenance procedures performed on ESP.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., primary voltage, secondary current, spark rate meter gauges, emission point temperature, opacity monitor, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Describe any test ports available for inspectors to conduct measurements of temperature and pressure drop. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

**ATTACH A DIAGRAM OF THE TOP VIEW OF THE ESP WITH DIMENSIONS (INCLUDING AT A MINIMUM THE PLATE SPACING AND WIRE SPACING AND INDICATE THE ELECTRODE TYPE)**

## C4 - CONTROL DEVICE (THERMAL OR CATALYTIC)

A control device which operates by thermal (non-catalytic) and catalytic incineration can oxidize any hydrocarbons and/or toxic pollutants into carbon dioxide and water. High temperature and residence time must be sufficient to obtain the desired oxidation results. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Provide a brief description of control system (e.g., Thermal incinerator which controls VOC emissions from can painting line).

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

### IF CATALYST USED

**TYPE** - Enter the type of catalyst material (e.g., palladium on ceramic honeycomb design).

**Velocity through catalyst (fps)**: Input the velocity of the pollutant laden air stream through the catalyst.

**Catalyst Vol. (ft<sup>3</sup>)**: Enter the volume of the catalyst material used in this operating scenario in cubic feet.

**SCFM through catalyst**: Enter the Standard Cubic Feet per Minute of airflow through the above mentioned catalyst volume in this operating scenario.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation to maintain the desired efficiency. A gauge indicating operating pressure must be installed and operational on this equipment at all times.

**INLET TEMPERATURE (F) MIN/MAX** -Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** -Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** - Enter the actual inlet air flow rate in cubic feet per minute during normal operation.

**RESIDENCE TIME (SECONDS)** - Enter the amount of time the gas stream remains in the combustion chamber. This can be calculated by dividing the volume of the combustion chamber (cubic feet) by the actual air flow rate (cubic feet/minute) at the incinerator temperature and then multiplying this result by 60.

**COMBUSTION CHAMBER VOLUME (FT<sup>3</sup>)** - Enter the volume of the combustion chamber.

**COMBUSTION TEMPERATURE (F)** - Enter the minimum temperature in the combustion chamber during normal operation.

**% EXCESS AIR** - The amount of air provided in excess of the minimum amount required for complete combustion expressed as a percentage.

**INLET MOISTURE CONTENT (%)** - Give the maximum % of moisture in the inlet emission stream. **FUEL USED** - Enter the type(s) of fuel(s) used in the device.

**TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR)** -Enter the total maximum firing rate for all burners based on input.

**MAXIMUM ANNUAL FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one year. If this is less than the maximum capacity of the fuel burners then the unit will be restricted to this amount.

**MAXIMUM HOURLY FUEL USE** -Indicate the maximum amount of fuel you propose to burn in one hour. If this is less than the maximum capacity of the fuel burner then the unit will be restricted to this amount.

**ACTUAL ANNUAL FUEL USE** - Indicate the actual amount of fuel consumed in one year during normal operation.

**ACTUAL HOURLY FUEL USE** - Indicate the actual amount of fuel consumed in one hour during normal operation.

**METHOD USED TO INCREASE MIXING** - Higher destruction efficiencies are achieved by thoroughly mixing the gas stream in the combustion chamber. Describe methods used to enhance mixing (e.g., refractory baffles, baffle plates, swirl-fired burner).

**DESCRIBE THE STARTUP/SHUTDOWN PROCEDURES** - Describe in detail the steps taken to bring the incinerator from a cold state to maximum operation and then through shut down.

**DESCRIBE ANY MAINTENANCE PROCEDURES:** - Describe maintenance procedures performed on control device.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.:**

List any devices and/or gauges installed on the system (e.g., temperature, CO monitor, O<sub>2</sub> monitor, opacity monitor, etc.) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Provide any calibration or maintenance activities and frequency.

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Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S)** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## C5 - CONTROL DEVICE (MECHANICAL)

Mechanical collectors, such as settling chambers, cyclones, and multicyclones, utilize gravity and inertia to separate particulates from a gas stream. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** -If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Provide a detailed description of the control device. Include all information needed to evaluate the system that is not already included.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation to maintain the desired efficiency. A gauge indicating operating pressure must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** - Enter the actual inlet air flow rate in cubic feet per minute during normal operation.

**PARTICLE DENSITY (LB/FT<sup>3</sup>)** - Enter the average particle density entering the control device in pounds per cubic feet.

**SETTLING CHAMBER** - There are two types of gravity settling chambers. The SIMPLE EXPANSION CHAMBER which is basically a long, horizontal box with inlet, outlet and collection hoppers. The gas stream enters the expansion section of the device and its velocity is reduced, thereby allowing particulate matter in the gas stream to be collected by gravity. The MULTIPLE TRAY SETTLING CHAMBER (Howard settling chamber) operates on the same principle as the simple expansion chamber, but there are several horizontal collection plates in order to shorten the settling path of the particle, thus enhancing collection efficiency. The BAFFLE CHAMBER is a variation of the settling chamber. These units have baffles within the chamber in order to impart a downward motion to the particles in the gas stream, thus collection is accomplished by inertia as well as gravity.

**DIMENSIONS (TO NEAREST INCH)**

**LENGTH** - Length of the chamber in inches.

**WIDTH** - Width of the chamber in inches.

**HEIGHT** - Greatest distance a particle must fall to be collected. In multiple tray devices this is the distance between trays.

**VELOCITY (FT/SEC)** - Specify the velocity at which the particulate laden gas travels through the chamber.

**NO. TRAYS** - If the device is of multiple tray design, specify the number of horizontal trays.

**NO. BAFFLES** - If the device is a baffle chamber, specify the number of baffles.

**CYCLONE** - An inertial separator in which the particulate laden gas stream is forced to spin in a vortex. As the gas changes direction, the inertia of the particles causes them to be separated from the gas stream and collected.

**INLET VELOCITY (FT/SEC)** - What is the velocity of air stream entering the cyclone.

**CIRCULAR or SQUARE** - Indicate whether the inlet dimension "H" is for a circular or square inlet.

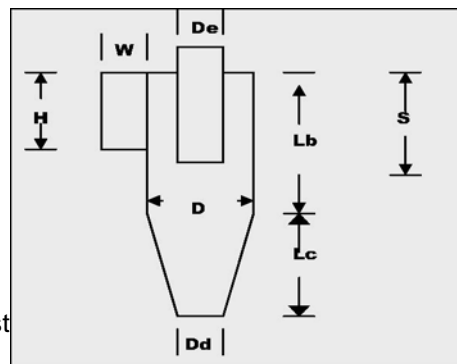
**DIMENSIONS** - Provide the dimensions of the cyclone. Refer to the diagram below for a description of variables for a typical top inlet cyclone. For other types of cyclones (such as bottom inlet, axial inlet or straight-through designs) provide a diagram labeling the dimensions of the analogous parts.

**IF WET SPRAY UTILIZED** - If wet spray is used inside the cyclone to enhance collection efficiency complete this section.

**LIQUID USED** - Specify liquid that is sprayed.

**FLOW RATE** - Rate of liquid application in gallons per minute.

**MAKE UP RATE** - Rate of replacement for liquid lost to evaporation, absorption and disposal, in gallons per minute.



**MULTICYCLONE** - When high efficiency and large throughput are necessary, multiple cyclones may be operated in parallel. In a multiple cyclone separator, the housing typically contains a large number of axial inlet cyclone tubes.

**NO. TUBES** - Number of tubes in the multicyclone.

**DIAMETER OF TUBES** - Diameter of tubes in inches.

**IS A HOPPER ASPIRATION SYSTEM UTILIZED?** - Yes or No. Hopper aspiration is when a small portion of the total gas flow is drawn off through the collection hopper which can increase collection efficiency by reducing particulate re-entrainment into the cyclone tubes.

**LOUVERS** - Yes or No.

**DESCRIBE MAINTENANCE PROCEDURES** - Provide a detailed explanation of the maintenance procedures used to ensure the unit is operating at maximum efficiency.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., magnahelics, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Describe any test ports available for inspectors to conduct measurements of temperature and pressure drop. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## **C6 - CONTROL DEVICE (ADSORBER)**

Adsorption is a control where gaseous pollutants are extracted from gas phase and concentrated at the surface of a solid. Carbon is commonly used to adsorb volatile organic compounds from an airstream. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a detailed description of the adsorber system used. Indicate whether the system is a recirculating system, a nonregenerative system, or a regenerative system; whether the system has a fixed, moving, or fluidized bed, whether it involves multiple beds, and any other relevant information. Include the gas pretreatment methods such as particulate removal, heat exchange, dehumidification, etc. List the methods for bed regeneration such as thermal, chemical, pressure swing, displacement cycle, etc. Attach a blueprint or diagram of the system along with the manufacturer's literature.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

1= Calculated (Attach all calculations to Form D6).

2= Manufacturers specification (Enclose documentation).

3= Source test (Attach documentation or reference test already submitted to agency).

4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**INLET AIR FLOW RATE (ACFM)** - Enter the actual air flow rate in cubic feet per minute during normal operation.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation to maintain the desired efficiency. A gauge indicating operating pressure must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum outlet temperature during normal operation.

**SIZE OF COMPARTMENTS (FT)** - Specify the dimensions of the adsorber bed, either length, width, and height, or bed depth and radius in feet. The bed depth is the dimension parallel to the gas flow.

**METHOD OF ADSORPTION** - Indicate which method of adsorption this control device uses.

**TYPE OF ADSORPTION MATERIAL** - Provide the chemical composition of the material (e.g., powdered coal base activated carbon, granular wood base activated carbon, hydrous silicate, modified zeolite, clays, oxides, nutshell base activated carbon). Include manufacturer's literature if available.

**NUMBER OF COMPARTMENTS** - This is the number of compartments or beds into which the adsorber unit is divided. The gas flow can be cut off individually from these beds. Include all the beds that are in use.

**REGENERATIVE METHOD** - Indicate which method of regenerating the adsorption material is used by this control device.

**REGENERATIVE SCHEDULE** - Enter the maximum amount of time necessary to completely clean (desorption) the collecting material and the maximum amount of time necessary to saturate the material. If more than one pollutant is being collected, choose the maximum value for the above from the pollutants collected.

**HOW ARE EMISSIONS CONTROLLED DURING REGENERATION?** - Emission control during the cleaning process can be accomplished by several methods. Briefly discuss how emissions are controlled while the adsorption material is regenerated.

**VOLATILE CONCENTRATIONS (PPMV)**

**ENTERING UNIT** - Specify the total VOC concentration of the gas stream entering the adsorber unit in the volume of VOC per million volumes of gas stream.

**LEAVING UNIT** - Specify the total VOC concentration of the gas stream leaving the adsorber unit.

**RELATIVE HUMIDITY OF AIR STREAM ENTERING UNIT** - Specify the relative humidity of the gas stream that enters the adsorber unit.

**ORIENTATION OF BEDS** - Specify whether the gas flow through the adsorption beds is in the vertical or horizontal direction.

**BREAKTHROUGH CAPACITY (LB. VAPOR/LB. ADSORBENT)** - Provide the breakthrough capacity in pounds of vapor per pound of adsorbent. This is the capacity of the bed at which unreacted vapors begin to be exhausted.

**BREAKTHROUGH ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the breakthrough capacity is exceeded.

**CYCLE TIME** - Specify the service time of the adsorber before breakthrough (include units).

**DESCRIBE MAINTENANCE PROCEDURES** - Provide a detailed explanation of the maintenance procedures used to ensure the unit is operating at maximum efficiency.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., inlet/outlet vapor concentrations, temperature, etc.) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Provide any calibration or maintenance activities and frequency. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** -Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## C7 - CONTROL DEVICE (GASEOUS ABSORBER)

A gas absorber is a control device where one or more gaseous pollutants are removed by absorption with a liquid that it is brought in contact. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a detailed description of the gas absorber system used. Include information on specific nozzle type for spray towers, throat type and throat velocity for venturi scrubbers, or packing materials and packing length for packed-bed type absorbers. Also include the liquid distribution system, the mist elimination system, and any other relevant information. Attach a blueprint or diagram of the system along with the manufacturer's literature.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

**EFFICIENCY DETERMINATION CODE** - Enter the code to represent how the efficiency was determined.  
1= Calculated (Attach all calculations to Form D6).  
2= Manufacturers specification (Enclose documentation).  
3= Source test (Attach documentation or reference test already submitted to agency).  
4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation to maintain the desired efficiency. A gauge indicating operating pressure must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

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**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** -Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** - Enter the actual air flow rate in cubic feet per minute during normal operation.

**TOTAL GAS PRESSURE (PSIG)** - Specify the total inlet gas pressure in pounds per square inch (gauge).

**GAS DEW POINT (F)** - Enter the temperature at which the gas stream first changes into liquid phase.

**GAS VELOCITY (FT/SEC.)** - Enter the maximum gas velocity through the net column cross-sectional area.

**TYPE OF SYSTEM** - Specify types of gas absorbing system used (e.g., spray tower, cyclone spray chamber, packed columns, plate columns, venturi scrubber, sparging tank).

**PACKED COLUMNS** - Complete this only if the absorbing system is classified as a packed column system. This absorbing process is a continuous operation where the gas and liquid phases flow through the system in a continuous manner with intimate contact throughout.

**TYPE OF PACKING USED** - Specify packing used in your packed tower (e.g., partition tricklers, pall rings, berl saddles, tellerettes).

**COLUMN LENGTH (FT)** - Enter the length of the packed column.

**COLUMN DIAMETER (FT)** -Enter the column diameter.

**PLATE COLUMNS** - Complete this only if the absorbing system is classified as a plate column system. This absorbing process is a staged operation on plates or trays where the liquid and gas are contacted in stepwise fashion in the vertical cylinders.

**PLATE SPACING** - Enter the distance between the plates in the absorbing tower.

**COLUMN LENGTH (FT)** - Enter the length of the packed column.

**COLUMN DIAMETER (FT)** -Enter the column diameter.

**ADDITIVE LIQUID SCRUBBING MEDIUM** - Specify what kind of liquid is used. Include the name of the additives (e.g., propanol, detergents, etc).

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

**TOTAL LIQUID INJECTION RATE (GAL/MIN)** - Enter the total volumetric flow rate of the liquid.

**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.

**FOR ADDITIVE (GAL/MIN)** - Specify the amount of new additive(s) that must be added to the system due to evaporation or discharge to a disposal system.

**DESCRIBE MAINTENANCE PROCEDURES** - Provide a detailed explanation of the maintenance procedures used to ensure the unit is operating at maximum efficiency.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., magnahelics, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Provide any calibration or maintenance activities and frequency. Describe quality

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assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## C8 - CONTROL DEVICE (WET SCRUBBER)

Wet scrubbers are commonly used to separate particulates (sometimes gases) from an airstream. Scrubber liquids are introduced for particle collection. The system performance depends on the particle size of pollutant being collected. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a detailed description of the wet scrubber system used. Include information on specific nozzle type for spray towers, throat type and throat velocity for venturi scrubbers, or packing materials and packing length for packed-bed type scrubbers. Also include the liquid distribution system, the mist elimination system, and any other relevant information. Include manufacturer's literature.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

- 1= Calculated (Attach all calculations to Form D6).
- 2= Manufacturers specification (Enclose documentation).
- 3= Source test (Attach documentation or reference test already submitted to agency).
- 4= Other (describe).

**BEFORE CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions entering the control device for each pollutant listed.

**AFTER CONTROL EMISSION RATE (LB/HR)** - Estimate the emissions leaving the control device for each pollutant listed.

**PRESSURE DROP (IN. H<sub>2</sub>O) MIN/MAX** - Enter the minimum and maximum operating pressure drop across the device in inches H<sub>2</sub>O during normal operation to maintain the desired efficiency. A gauge indicating operating pressure must be installed and operational on this equipment at all times.

**WARNING ALARM?** - Indicate if a warning alarm is installed on the unit to sound an alert in the event the pressure drop is outside the allowable range.

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**INLET TEMPERATURE (F) MIN/MAX** - Enter the minimum and maximum inlet temperature during normal operation.

**OUTLET TEMPERATURE (F) MIN/MAX** -Enter the minimum and maximum outlet temperature during normal operation.

**INLET AIR FLOW RATE (ACFM)** - Enter the actual air flow rate in cubic feet per minute during normal operation.

**MOISTURE CONTENT: INLET (%)/OUTLET(%)** - Enter the percent moisture by weight of the control device's inlet and outlet air stream.

**THROAT VELOCITY (FT/SEC)** - Enter the velocity of the air stream at the throat (or inlet) to the scrubber.

**THROAT TYPE** - Is the inlet to the scrubber a fixed or variable configuration?

**EMISSION STREAM MEAN PARTICLE DIAMETER (MICRONS)** - Enter the average micron size of particles leaving the control device.

**TYPE OF SYSTEM** - Specify type of particulate 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 packing used in your packed tower (e.g., partition tricklers, pall rings, berl saddles, tellerettes).

**ADDITIVE LIQUID SCRUBBING MEDIUM** - Specify what kind of liquid is used. Include the name of the additives (e.g., propanol, detergents, etc).

**PERCENT RECIRCULATED** - If the scrubber is operated with recirculating slurries, specify the percentage of the liquid returned to the system

**TOTAL LIQUID INJECTION RATE (GAL/MIN) MIN/MAX** - Specify the total minimum and maximum volumetric flow rate of the liquid.

**FLOW RATE GAUGE INSTALLED?** - Indicate if the control device has a gauge to indicate injection flow rate

**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.

**FOR ADDITIVE (GAL/MIN)** - Specify the amount of new additive(s) that must be added to the system due to evaporation or discharge to a disposal system.

**DESCRIBE MAINTENANCE PROCEDURES** - Provide a detailed explanation of the maintenance procedures used to ensure the unit is operating at maximum efficiency.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.**

List any devices and/or gauges installed on the system (e.g., magnahelics, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Provide any calibration or maintenance activities and frequency. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** - Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## **C9 - CONTROL DEVICE (CONDENSER)**

Condensers are generally used to remove Volatile Organic Compounds (VOC's) by cooling the pollutant to below its saturation temperature and thereby effecting a phase change from VOC gas to VOC liquid. Separating the liquid from the gas removes a fraction of the VOC from the emission stream. The amount of VOC that remains in the gas stream as a vapor is a function of the temperature and the vapor-liquid equilibrium of the VOC. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**CONTROL DEVICE ID NO.** - Assign a unique control device ID No. for this control device. This ID No. must correspond to the ID No. used for this control device on all other forms and all other references.

**CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID(S)** - List all emission source IDs whose emissions are controlled by this device.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

**POSITION IN SERIES OF CONTROLS** - If there are several devices operating in a series indicate in what position this device is located. If the exhaust air stream goes through this unit and then through a second unit then this would be the # 1 of 2 units.

**MANUFACTURER** - Enter the manufacturer of the device.

**MODEL NO.** - Enter the model number of the device.

**DESCRIBE CONTROL SYSTEM** - Give a brief description of the control device. Include such information as other devices used in conjunction with this device; number of compartments, etc.

**POLLUTANT(S) COLLECTED** - Enter the pollutants being collected.

**CORRESPONDING EFFICIENCY (%)** - Enter the collection efficiency of the control device for each pollutant collected.

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

1= Calculated (Attach all calculations to Form D6).

2= Manufacturers specification (Enclose documentation).

3= Source test (Attach documentation or reference test already submitted to agency).

4= Other (describe).

**BEFORE CONTROL CONCENTRATION (PPMV)** - Estimate the concentration in ppmv for each pollutant entering the control device.

**AFTER CONTROL CONCENTRATION (PPMV)** -Estimate the concentration in ppmv for each pollutant exiting the control device.

**EMISSION STREAM FLOW RATE (CFM)** - Enter the flow rate in cubic feet per minute of the emission stream exiting the condenser.

**EMISSION STREAM TEMPERATURE (F)** - Enter the temperature in degrees Fahrenheit of the emission stream exiting the condenser.

**MOISTURE CONTENT OF EMISSION STREAM (%)** - Enter the percent moisture of the emission stream exiting the condenser.

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**TEMPERATURE OF CONDENSATION (F)** - Enter the temperature in degrees Fahrenheit of the condensed pollutant VOC.

**COOLANT USED** - Enter the type of coolant used to lower the pollutant emission stream to its saturation point.

**TEMPERATURE OF INLET COOLANT (F)** - Enter the temperature in degrees Fahrenheit of the coolant entering the condenser.

**COOLANT FLOW RATE (LB/HR)** - Enter the flow rate in pounds per hour of the coolant.

**REFRIGERATION CAPACITY (TONS)** - Enter the capacity of the condenser in standard ton rating.

**CONDENSER SURFACE AREA (FT<sup>2</sup>)** - Enter the total surface area in square feet available for condensation of the pollutant.

**SPECIFIC HEAT OF POLLUTANT COLLECTED (BTU/LB-MOLE °F)** - Enter the specific heat of the pollutant.

**HEAT OF VAPORIZATION OF COLLECTED POLLUTANT (BTU/LB-MOLE)**

Enter the heat of vaporization of the pollutant.

**DESCRIBE MAINTENANCE PROCEDURES** - Describe all maintenance procedures including methods used and frequency to detect leaks and holes.

**DESCRIBE ANY MONITORING DEVICES, GAUGES, TEST PORTS, ETC.:**

List any devices and/or gauges installed on the system (e.g., magnahelics, temperature gauges, opacity monitors, etc) that are used for demonstrating proper operation of control equipment or compliance with air quality standards. Describe any test ports available for inspectors to conduct measurements of temperature and pressure drop. Describe quality assurance procedures to assure all gauges are operating properly. Gauges, test ports, etc. not used for air quality purposes are not required to be described.

**SHOW BY DIAGRAM THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION**

**SOURCE(S):** -Provide a diagram of the control device and all accompanying emission sources (with ID numbers). Where possible, indicate flow rates, common manifolds, and other such information as may be necessary to understand the process.

## D1 - PRODUCT ANALYSIS WORKSHEET (VOC EMISSIONS)

Form D1 must be completed for each product use as requested in other parts of the permit application package. The product must be evaluated **AS APPLIED**. For example, a product is used as delivered from the supplier; is sometimes reduced with toluene before use; and is sometimes mixed with a catalyst before use. For this example, the products as applied would be considered three separate products and a D1 form must be completed for each. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

Most of the information requested on Form D1 may be found in the product's Manufacturer's Safety Data Sheet (MSDS) which is available from the manufacturer or supplier. Keep in mind that the MSDS rarely includes a breakdown of all constituents therefore the MSDS cannot be substituted for form D1.

When constituents such as thinners or catalysts are added to the product the resulting mixture may have physical characteristics which differ from those listed on the MSDS.

**PRODUCT NAME, PRODUCT NO., MANUFACTURER, SUPPLIER** - Identify the product used by trade name, number and manufacturer. If the product is not purchased directly from the manufacturer, identify the supplier.

**PRODUCT ID NO.** - Assign a unique number to each product analysis.

**LIST EMISSION SOURCE ID NO(S) WHERE PRODUCT IS USED** - Identify by emission source ID the emission sources where the product is used.

**DESCRIPTION OF USE** - Describe briefly how the product is used (e.g., surface coating of metal furniture; blanketwash in offset lithographic printing process). If the product is used as an additive for other products, identify those products and the emission source IDs in which the products are used (e.g., reducer for Flat Black Enamel (V12) and PGP Green Enamel (V14), both used in emission sources ES3, ES4, and ES5).

**PRODUCT DENSITY** – Pounds per gallon of product.

**VOLATILE DENSITY IN PRODUCT** – Density of the volatile portion of the product. Exclude water and exempt VOCs as listed in 40 CFR 51.100(s).

**LB VOC/GAL SOLID and KG VOC/L SOLID** – Some standards are have the form of LB. VOC/GAL. SOLID or . KG VOC/L SOLID. Complete this if this type of standard is applicable to this coating.

**PRODUCT** - This is the condition of coating/product received from the manufacturer.

**SUPPLIED TO APPLICATOR** -This is the condition of coating/product after dilution by the user just before application to the substrate.

**% BY WEIGHT** - Percent by weight of SOLIDS, VOLATILES and WATER in the product. Treat exempt VOC's as water.

**% BY VOLUME** - Percent by volume of SOLIDS, VOLATILES and WATER in the product. Treat exempt VOC's as water.

**PRODUCT BREAKDOWN OF CONSTITUENTS**

**VOC CONSTITUENTS** – List all of the volatile organic compounds, including exempt compounds, in the product as applied to the substrate or used in the process. Any VOCs (thinners, catalysts, etc.) added to the product before or during use must be included.

**CAS NO.** - List the Chemical Abstract Service Number for each constituent. If listing an additive with more than one constituent by trade name, enter "N/A" if there is no CAS NO.

**EXEMPT** – Check this box if the volatile constituent is an exempt VOC as listed in 40 CFR 51.100(s).

**% BW IN PRODUCT** - Percent by weight of each volatile constituent in the product.

**% BV IN VOLATILE** - Percent by volume of each volatile constituent in the volatile portion of the product. Do not include solids, water and exempt VOCs in this volatile portion of the product. The aggregate percentage of all the volatiles must total 100%.

**SOLID CONSTITUENTS** – List solid compounds and materials in the product as applied to the substrate or used in the process.

**THINNERS/ADDITIVES**

**THINNERS/ADDITIVES** – List the products, diluents, catalysts, etc., added to the product described on this form. Include a separate D1 form for each of these products. If the thinner/additive product is a single compound, a separate D1 form is not required.

**PRODUCT ID NO.** – The ID number assigned on the D1 form for this product.

**AMOUNT ADDED PER GALLON** – provide the amount of the thinner/additive added to the product.

**COMMENTS:** - Provide any comments regarding the use of the product, such as what operating conditions this particular formulation of the product is used.

## **D2 - GENERAL INSTRUCTIONS FOR AIR TOXICS APPLICATION FORMS**

These application forms are used for any of the following situations that includes the emissions of one or more Toxic Air Pollutant(s) (TAP) listed in Section 3Q .0700 of the Forsyth County Air Quality Technical Code (FCAQTC):

1. new facilities according to Rule .0704 of this Section ;
2. existing facilities according t Rule .0705 of this Section;
3. modifications according to Rule .0706 of this Section;

New facilities and existing facilities summoned by the Director under a SIC call must complete a facility-wide evaluation for all TAPs that are or will be emitted from the existing or proposed facility, respectively. A D2-1 form must be filled out for each emission source. The total emissions of TAPs calculated must be summarized on form D2-2 in Section C. Go to the instructions for the D2-1 and D22 (Section C) forms below.

Existing facilities applying to modify an emission source must determine if the physical or operational changes being made will cause a net increase in emissions of any TAP or result in the emission of any TAP not previously emitted at this facility. If this happens, the applicant should use the potential emissions of the modified emission source, and any resultant increases from other emission sources, in a facility-wide evaluation for each TAP increased by the modification unless the applicant: requests permit limits (e.g. restricting the operation of the modified source so that actual emissions do not increase); offsets the emissions at the time of the modification; or completes a five-year netting exercise. Actual emissions prior to the modification are determined by reviewing the previous two years of operating data to determine the most representative emission rate from each emission source. Offsetting and netting are explained below.

In many cases, performing a facility-wide review of each TAP to determine if its emission rate falls below the de-minimis levels found in Section 3Q .0700 of the FCAQTC may be the easiest and most economic manner to complete this application process. If the facility-wide emissions of a TAP falls below these de-minimis rates then no further analysis would be required for that TAP. However, if it is demonstrated that the facility-wide emissions of a TAP are greater than the de-minimis value(s), then an ambient air quality modeling analysis must be performed to determine if the ambient levels for that TAP are at or below the acceptable ambient levels found in Section 3D .1100 of the FCAQTC [NCAC 2D .1104].

The applicant may do three things to avoid a facility-wide evaluation for any TAP initially showing an increase in emissions:

1. Offset the increase in emissions from the new/modified source by a physical\chemical modification to another emission source such that the net change from the immediate modification is less than or equal to zero. The offset must demonstrate actual emission decreases (not "permit only" decreases) that will occur after the date of submittal of this application.
2. Request permit conditions to either limit the emissions from the new source or reduce actual emissions from an existing source to pre-modification levels. This is similar to offsetting only you are using permit restrictions rather than actual physical or chemical changes to an emission source. In this case, recording and/or reporting requirements will be required.
3. Perform a facility-wide netting demonstration to show no net increase in each TAP over the previous five (5) years. Every emission source at the facility which has been modified within this time period must be evaluated for both increases and decreases. When compared to the increase in emissions of the TAP in the immediate modification, it must show a net change of zero (0) or less.

## D2-1 - TOXIC AIR POLLUTANT EMISSIONS SUMMARY

*(Make a copy of this blank form to use for each emission source being added or modified)*

Use one form for each emission source and attach all supporting calculations and documentation.

This form is used for TAP emissions from: each emission source of a new facility; each new/modified emission source at existing facilities; each emission source involved in a facility-wide evaluation; and all emission sources at a facility upon the Director's SIC calls. A D2-1 Form should be filled out for every emission source that emits a TAP and is affected by this modification or SIC call. This form will also be used for any netting exercise (See Section B of form D2-2).

**EMISSION SOURCE DESCRIPTION** - This is a brief description of this emission source as it relates to the emissions of TAPs. If any of the following are represented, the description shall be so indicated: boiler, internal combustion engine, kiln, flare, incinerator, oven, furnace, dryer, or heater. Include the model and rated capacity of any boiler or other combustion device in the description.

**EMISSION SOURCE ID NUMBER** - Enter a unique identification number for each emission source being added or modified. Each identification number must correspond to all references on other application forms.

**PRIMARY CONTROL DEVICE** - Describe the primary control device associated with this emission source. Attach calculations, documentation, or literature supporting the capture and control efficiencies of this control device.

**CONTROL ID NUMBERS** - Enter an unique identification number for the associated control devices. Each identification number must correspond to all references on other application forms.

**SECONDARY CONTROL DEVICE** - If you have a secondary control device, enter its unique control device ID number.

**CONTROL ID NUMBERS** - Enter an unique identification number for the associated control devices. Each identification number must correspond to all references on other application forms.

**TOXIC AIR POLLUTANT** - Enter every TAP being emitted from the emission source. Enter one pollutant per line. The adjacent entries in this row should reflect evaluations. two years. the calculated emissions and data for the new/modified emission source.

**TAP NO.** - For each TAP, enter its number as specified in Section 3Q .0700 of the Forsyth County Air Quality Technical Code (FCAQTC).

**PERMITTED MAXIMUM EMISSIONS** - Enter the maximum controlled emission rates that you desire to have permitted in pounds per year (**LB/YEAR**), pounds per day (**LB/DAY**), pounds per hour (**LB/HOUR**) and pounds per 15-minute (**LB/15MIN.**) for each of the TAPs emitted from the source. Unless you are requesting or already have permit limits, the maximum permitted emissions are emissions of any TAP that occur at the maximum capacity of a process operating 24 hrs. a day, 365 days a year. Please enter the emission rates in Form D2-1 and attach the supporting calculations and documentation.

**"Prior to modification/netting event"** – This row of entries should be filled out if this is a modification for an existing source. These entries will be compared to the entries for the new/modified sources to determine any offsets, as well as, documentation of increases and/or decreases in credible emissions should netting be used in future evaluations

Actual emissions for this row should be based on the most representative process data over the previous two years. Short term emission rates (lbs/hour, lbs/day) are the maximum actual emission rate the source actually emitted during the previous two years.

**EMISSION POINT ID** - Enter an unique identification number for each emission point [e.g. S1 (for Stack 1), etc.] associated with each emission source. Enter "FUGITIVE" if emissions from the source enter the atmosphere without first passing through a stack or duct designed to direct or control their flow. Different emission sources with a common emission point will have the same emission point identification number.

**EMISSION FACTOR TYPE** -Enter one or more of the following numbers corresponding to the calculation method(s) used for emission estimations.

- 1 = Emissions calculated based on source test or other emission measurements;
- 2 = Emissions calculated based on material balance using engineering knowledge of the process.
- 3 = Emissions calculated based on AP-42, FIRE, EPA 450/2-90-011 or other EPA emission factors.
- 4 = Emissions calculated by engineering judgment. This factor must be approved by this Office prior to use.
- 5 = Emissions calculated based on a emission factor approved by a state or local agency. This factor should also be reviewed by this Office prior to use.

**MODELING PARAMETERS** - This section should be completed **ONLY** if air dispersion modeling analysis is required for one or more of the TAPs.

**EMISSION POINT ID** -Same as above

**EXHAUST TEMPERATURE (deg F)** - Enter the gas exit temperature in degrees Fahrenheit.

**EMISSION POINT DIAMETER (FT)** - Enter the internal diameter at stack exit in feet.

**EMISSION POINT HEIGHT (FT)** - Enter the release height of the gaseous pollutant from the ground level in feet.

**EXIT VELOCITY (FT/SEC)** - Enter the gaseous velocity at stack exit in feet per second.

**STACK DIR** - Circle "RC" if the stack or vent is fitted with a rain cap, "V" if the stack is not capped and vertical, and "H" if the stack exit is anything other than vertical.

**INDICATE ALL REQUESTED FEDERALLY ENFORCEABLE PERMIT LIMITS** - If you already have or are requesting enforceable permit limits for this emission source (e.g. hours of operation, material input rates, emission rates, etc.), identify these limits in this space. The requested emission rates must have the same units as those in Section 3Q .0700 of the FCAQTC. For example, the unit for the deminimis emission rate for ammonia is in pounds per 15-minute (lb/15-min.). Therefore, the requested emission rate for ammonia must be in lb/15-minute and must be verifiable. Enter the recording procedures and/or reporting conditions that you are proposing to verify these limits.

## **D2-2 - TOXIC AIR POLLUTANT NETTING WORKSHEET & FACILITYWIDE EMISSIONS SUMMARY**

This form is used as a worksheet for offsetting and netting analyses (Sections A & B). It is also used as a facility-wide emissions summary for each TAP (Section C). Sections A & B need only be completed if the applicant is attempting to avoid a toxics evaluation. Otherwise, complete Section C only.

### **SECTION A - EMISSION OFFSETTING ANALYSIS FOR MODIFIED/NEW SOURCES**

This section should be filled out if the modification that you are applying for includes increases and decreases in the same pollutant at different emission sources. The results of this section will determine if the increases have been offset by any decreases of the same pollutant during this modification. If the net change from this modification is zero (0) or less, then a facility-wide review of this pollutant can be avoided. The emission rate of any pollutant that has a net change greater than zero must perform either the five year netting exercise (see SECTION B instructions below) or the facility-wide review for that pollutant.

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Perform the offsetting analysis using only the units (lb/yr, lb/day, etc.) that correspond to each pollutant's de-minimis rates set forth in Section 3Q .0700 of the FCAQTC.

Use one D2-2 Form for each of the TAPs and be sure that there is a D2-1 Form completed for each emission source claiming increases or decreases in emission rates. Be sure all supporting calculations and documentation are attached.

### SECTION B - FACILITY-WIDE EMISSION NETTING ANALYSIS

This section is to be filled out if you did not offset increases in TAPs during a modification and you do not desire to perform a facility-wide evaluation at this time. Netting is done over the five years immediately preceding this application.

Every change in operation or modification at the facility which caused an increase or decrease in the actual emissions of a TAP must be included as a netting event. All actual emissions must be demonstrated by a review of operations for the two years preceding the netting event to find the most representative emissions for each TAP.

Use the D2-1 form to show each netting event. Attach all calculations and documentation with each D2-1 form. Summarize the D2-1 form entries to this section of the D2-2 form.

### SECTION C - FACILITY-WIDE EMISSIONS

Complete this section for each TAP for which a facility-wide evaluation was performed. If you are doing a facility-wide evaluation, complete a D2-1 form for every emission source at your facility. If you have a different procedure that will provide all of the necessary information found on the D2-1 form, send a sample to this Office for approval.

**TOXIC AIR POLLUTANT (TAP), TAP NO.** - Enter the chemical name for the TAP emitted from the modified and/or new sources and its toxic air pollutant number as specified in Section 3Q .0700 of the FCAQTC.

**EMISSION SOURCE ID NUMBER(S)** - Enter the unique identification number for each emission source affected by this analysis for the TAP entered above. If applicable, use the same ID numbers that you used in the emissions inventory for these emission sources.

### **SECTION A - EMISSION OFFSETTING ANALYSIS FOR MODIFIED/NEW SOURCES**

**MODIFICATION INCREASE** - Enter the total requested increase of TAP emissions from the proposed modified sources using the applicable units set forth in Section 3Q .0700.

**MODIFICATION DECREASE** - Enter the total requested decrease of TAP emissions from the proposed modified sources using the applicable units set forth in Section 3Q .0700.

**NET CHANGE FROM MODIFICATION** - Enter the difference in values by subtracting the "modification decrease" emission rates from "modification increase" emission rates. If the result is positive, there is a net increase in TAP emissions due to the modification. Therefore, either Section B or Section C needs to be completed. Section B should be completed if the applicant desires to avoid a facility-wide toxic evaluation. Section C should be completed if the applicant does not want to perform a netting exercise and/or wants to go ahead and complete the evaluation for the pollutants in question.

A facility-wide evaluation does not necessarily mean that modeling must be performed. If the facility-wide emissions demonstrate that the emissions of a TAP are below the de-minimis levels set forth in Section 3Q .0700 of the FCAQTC, then this TAP would not require any further analysis. The applicant may request permit restrictions and verification (recordation and reporting) procedures be amended to the

facility's operating permit that restrict the potential emissions of a TAP to below the de-minimis levels. In this case, no further analysis would be required.

### **SECTION B - FACILITY-WIDE EMISSION NETTING ANALYSIS**

**CREDITABLE INCREASE** - Enter the total creditable increase of TAP emissions over the previous five-year period. The increases should be the result of ACTUAL emission increments. Attach a D2-1 form and supporting documentation for each emission source at the facility and for each TAP.

**CREDITABLE DECREASE** - Enter the total creditable decrease of TAP emissions over the previous five-year period. The decreases should be the result of ACTUAL emission reductions. Attach a D2-1 form and supporting documentation for each emission source at the facility and for each TAP.

**NET CREDITABLE CHANGE** - Enter the difference of "creditable increase" and "creditable decrease" by subtracting "creditable decrease" from "creditable increase". If the result is positive, Form D2-1 should be completed for all existing emission sources in the facility and the facility-wide TAP emission estimates should be entered in Section C. If the result is zero or negative, no further evaluation is required.

### **SECTION C - FACILITY-WIDE EMISSIONS**

**TOTAL FACILITY EMISSIONS** - Enter the summations of facility-wide TAP emissions from each emission sources. Form D2-1 should be completed for all new/modified and existing emission sources in the facility prior to completing this section.

**Section 3Q .0700 LEVEL** - Input the de-minimis emission rate found in Section 3Q .0700 of the FCAQTC. Compare this value with the facility-wide calculated emission rate for each TAP being evaluated.

**IS AN AIR QUALITY DISPERSION MODELING ANALYSIS REQUIRED?** -If any of the TAP emission rates exceed the de-minimis rates set forth in Section 3Q .0700 of the FCAQTC, a modeling analysis must be performed to assure that the ambient impact of each TAP does not exceed the Acceptable Ambient Levels shown in Section 3D. 1100 of the FCAQTC.

## D2M - TOXICS MODELING WORKSHEET

This form is used to provide the Forsyth County Office of Environmental Assistance and Protection (FCOEAP) modelers with the necessary information to conduct an initial modeling evaluation of facility toxic emissions. This form should only be completed if the FCEAD modelers are requested by the applicant to conduct dispersion modeling. The FCEAD 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 Forsyth County Air Quality Control Ordinance and Technical Code Chapter 3A Section 3D .1100 and 3Q .0700 and as discussed in the *Guideline for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina*.

(1) INTRODUCTION - Provide enough information to allow the modeler to understand the purpose of the new or modified source(s) affected by the proposed changes.

(2) 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 will become permit limits for each pollutant for each source. **Note:** If facility-wide pollutant emission limits are desired, FCEAD 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.

(3) SOURCE DATA - If the modeling is required due to an operational change or an equipment change, addition, or modification subject to Rule 3Q .0706, then list all the sources which emit toxic pollutants affected by the proposed changes, additions, or modifications. If the modeling is required due to (1) the construction of a new facility subject to Rule 3Q .0704, (2) the applicability of a MACT standard to an existing source or facility subject to Rule 3Q .0705(b), or (3) the issuance of an SIC call by the Director in accordance with Rules 3Q .0705(c) or 3Q .0712, then list all toxic pollutant emissions from all 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. 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, FCEAD will convert from English units, as necessary.

(4) 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.

(5) 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.

(6) 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.

## D3-1 - SPECIFIC EMISSION SOURCE (EMISSION INFORMATION)

**NOTE** - Do not include the toxic air pollutant emissions regulated only by FCAQTC Section 3D .1100. Such toxic air pollutant emissions should be included in form D2

1. Pollutants regulated or listed as hazardous air pollutants in Section 112(b) of the federal Clean Air Act should be included on this form.

This form is used to list emissions of all of the regulated pollutants for each of the emission sources identified in Section B. A separate form D3-1 must be completed for each emission source. Title V facilities must complete a form D3-1 for each activity that is deemed insignificant due to the size or production levels listed in FCAQTC Rule .0102 (2) and is listed on Form E2. This form and its attachments will be used for calculating actual and potential hourly and annual emissions. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**EMISSION SOURCE DESCRIPTION** -Complete this section for each emission source described on Form B and for the sources or groups of sources listed on Form E2.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or colocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). 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. CD\_\_\_, and emission point ID No. EP\_\_\_.

**IS THIS SOURCE A FUGITIVE SOURCE? NO/YES** - Form D3 must also be completed for each fugitive source designated on Form A3, A4, or E3.

**ALTERNATIVE 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 A5.

**POLLUTANT** - In addition to the criteria pollutants, enter every regulated air pollutant being emitted from this emission source (one pollutant per line).

**EMISSION FACTOR TYPE** - Enter one of the following numbers corresponding to the type of emission factor used in the calculations:

- 1= Emissions calculated based on source test or other emissions measurements.
- 2= Emissions calculated based on material balance using engineering knowledge of the process.
- 3= Emissions calculated based on AP-42 or EPA 450/2-90-011 or other EPA emission factor.
- 4= Emissions calculated by engineering judgment. This factor must be approved by the agency prior to use.
- 5= Emissions calculated based on a state or local agency emission factor.

**LBS/HR POTENTIAL** - Calculate the potential emissions of each pollutant from this emission source based on the emission factor used for each pollutant.

*EXAMPLE: The AP-42 emission factor for emissions of SO<sub>2</sub> from distillate oil is 142S lbs/10<sup>3</sup> gal. of oil burned (where S = % sulfur in the fuel). Assume that the oil has a .5% sulfur content, a 33 million Btu/hour boiler is the emissions source, one (1) gallon of distillate oil has a heating value of 145,000 Btu, and FCAQTC Rule 3D .0516 is the applicable regulation with a standard of 2.3 lb/million Btu. The actual operating hours for this plant are 12 hours/day, 5 days/week, 50 weeks/year. There are no hourly or annual fuel restrictions and there are no operating hour limits. When calculating the potential emissions,*

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*it is assumed that the boiler will be operated 24 hours per day for 365 days per year at the maximum heat input. The estimated potential SO<sub>2</sub> emissions are:*

$$\frac{33\text{MMBtu}}{\text{hour}} \times \frac{1\text{ gal}}{145,000\text{MMBtu}} \times \frac{142(.5)\text{lbs}}{1000\text{gal}} = 16.16\text{lbs}/\text{hour}$$

**LBS/HR ACTUAL.** - Calculate the actual emissions of each pollutant from this emission source based on the emission factor used for each pollutant. If the above boiler is usually operated at 90% of the maximum heat input, the actual emissions would be 14.54 lbs/hr.

**LBS/YR POTENTIAL** - Calculate the potential emissions of each pollutant from this emission source based on the emission factor used for each pollutant.

*Using the above example and assuming the boiler normally operates at full capacity:*

$$16.16\text{ lbs}/\text{hour} \times 8760\text{hours}/\text{year} = 141,562\text{lbs}/\text{year}$$

**LBS/YR ACTUAL.** - Calculate the actual emissions of each pollutant from this emission source based on the emission factor used for each pollutant.

*Using the above example and assuming the boiler normally operates at 75% capacity:*

$$16.16\text{lbs}/\text{hour} \times .75 \times 12\text{hours}/\text{day} \times 5\text{days}/\text{week} \times 50\text{weeks}/\text{year} = 36,360\text{lbs}/\text{year}$$

*Or, if there is a federally enforceable permitted fuel restriction of 1.4 million gallons of distillate NO<sub>2</sub> oil per year, then the potential emissions would be:*

$$\frac{1,400,000\text{gallons}}{1\text{year}} \times \frac{145,000\text{Btu}}{1\text{gallon}} \times \frac{16.16\text{lbs}}{\text{hour}} \times \frac{1\text{hour}}{33\text{MMBtu}} = 99,408\text{Lbs}/\text{year}$$

**COMMENTS** - Use additional pages if needed.

## **D3-2 - SPECIFIC EMISSION SOURCE (REGULATION ANALYSIS)**

This form is to be used by non-Title V and Title V facilities to list all regulated pollutants, emission and operating limits, and applicable regulations for each pollutant for each emission source. **All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**EMISSION SOURCE DESCRIPTION** - Describe the emission source for which this form applies.

**EMISSION SOURCE ID NO.** - This form must be completed for each emission source listed on Form A3, A4, or E3.

**ALTERNATIVE 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 A5.

**REGULATED POLLUTANT** - List all regulated pollutants for which this sources to be permitted.

**EMISSION AND OPERATING LIMITS** - Indicate all applicable regulatory emission limitations and operating restrictions, including work practice standards to be permitted for this pollutant (e.g. lbs/million Btu, lbs/hr, raw material input rate, etc.).

**APPLICABLE REGULATION** - List the regulation limiting the emission and operating limits of this pollutant. All specific information that is necessary to determine applicability and compliance with all applicable State requirements and Federal requirements of the Clean Air Act shall be included. Any proposed exemptions from otherwise applicable requirements should be identified on this form. The applicable regulations to be listed here can generally be found in:

- (a) FCAQTC Subchapters 3D and 3Q. The majority of the applicable regulations will be found in these Subchapters.
- (b) Section 111 or 112 of the federal Clean Air Act (with the exception of the risk management plan regulation under Section 112(r)).
- (c) Section 129 of the federal Clean Air Act for solid waste incineration.
- (d) Sections 183(e), 183(f), or 328 of the federal Clean Air Act.
- (e) Section 504(b) or 114(a)(3) of the federal Clean Air Act.
- (f) Part C of Title I of the federal Clean Air Act (national ambient air quality standards, increment standards, or visibility requirements) as applicable to temporary sources permitted pursuant to 504(e) of the federal Clean Air Act.

**COMMENTS** - Use additional pages if needed.

## **D3-3 - EMISSION SOURCE (REDUCTION AND RECYCLING ACTIVITIES)**

This form may be used for fulfilling the requirements of Rules 3Q .0206, 3Q .0304, and 3Q .0507 of the Forsyth County Air Quality Technical Code (FCAQTC), which state that a source reduction and recycling description must be submitted along with each:

- (a) payment of an annual permit fee [Rule 3Q. 0206(d)],
- (b) permit application for modification of an existing facility [Rules 3Q. 0304(b)(2)(A) and 3Q .0507(d)(2)(A)], and
- (c) permit application for a new facility [Rules 3Q. 0304(b)(2)(B) and 3Q .0507(d)(2)(B)].

This form should be completed for each facility source reduction or recycling activity. *If no reductions were made throughout the facility during the previous year, only one inclusive form is necessary.* In the event of a modification of an existing permit, quantify the reductions realized by the modified or new emission source, as well as any amendments to facility-wide plans for future reduction activities.

**FACILITY-WIDE OR SPECIFIC EMISSION SOURCE?** Indicate whether the data on this form refers to the facility or a specific emission source.

**If this form is being used for a single emission source, please include EMISSION SOURCE DESCRIPTION AND SOURCE ID NO.** (found on your permit to operate): Describe the emission source for which this form applies

**POLLUTANT EMITTED:** Identify the air contaminants (e.g. regulated criteria pollutants {PM, PM10, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, Pb}, TAPs or HAPs) emitted from this emission source.

**SOURCE REDUCTION ACTIVITIES (ENTER CODES):** From the attached list of source reduction and recycling codes, chose the code that most accurately identifies the current source reduction and recycling activities being utilized for the emission of this pollutant from this emission source. **If no source reduction activities have been implemented in the past year, enter "NC" (No change from the previous year).**

**QUANTITY EMITTED LAST CALENDAR YEAR:** Quantify the amount of this pollutant emitted before the current source reduction and recycling activities were utilized in pounds/year *and* convert to tons/year.

**QUANTITY EMITTED THIS CALENDAR YEAR:** Quantify the amount of this pollutant emitted after the utilization of the current source reduction and recycling activities in pounds/year *and* convert to tons/year.

**PLANNED SOURCE REDUCTION ACTIVITIES (ENTER CODES):** From the attached list of source reduction and recycling codes, chose the code that most accurately identifies the planned source reduction and recycling activities being utilized for the emission of this pollutant from this emission source. **If no new source reduction activities are planned, write "NP" (no planned source reduction activities).**

**COMMENTS** – This area can be used to specify codes or for miscellaneous comments. Use additional pages if needed.

**Refer to this Office's P2 webpage (<http://www.forsyth.cc/EAP/P2.aspx>) for more information on pollution prevention opportunities.**

**SOURCE REDUCTION AND RECYCLING ACTIVITY CODES**

To be used with the D3-3 Form

**NO RECORDED ACTIVITIES**

NC: No source reduction activities implemented in the previous year

NP: No planned source reduction activities

**RECYCLING ACTIVITIES**

W01: On-site beneficial use/reuse W02: Off-site beneficial use/reuse

**SOURCE REDUCTION ACTIVITIES**

Good Operating Practices

W11: Began to segregate types of hazardous waste to make them more amenable to recycling

W12: Began to segregate (stopped combining) hazardous waste from non-hazardous waste (Note: for purposes of hazardous waste from non-hazardous waste reporting, reduces volume of hazardous waste, but does not reduce total waste volume)

W13: Improved maintenance scheduling, record-keeping, or procedures

W14: Changed production schedule to minimize equipment and feedstock changeovers

W19: Other changes in operating practices (*Specify in "Comments"*)

Inventory Control (Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life)

W22: Began to test outdated material—continue to use if still effective

W23: Eliminated shelf-life requirements for stable materials W24: Instituted better labeling procedures

W25: Instituted clearinghouse to exchange materials that would otherwise be discarded W29: Other (*Specify in "Comments"*)

Spill and Leak Prevention

W31: Improved storage or stacking procedures

W32: Improved procedures for loading, unloading, and transfer operations

W33: Installed overflow alarms or automatic shut-off valves

W34: Installed secondary equipment W35: Installed vapor recovery systems

W36: Implemented inspection or monitoring program of potential spill or leak sources

W39: Other (*Specify in "Comments"*)

Raw Material Modifications

W41: Increased purity of raw materials W42: Substituted raw materials (*Specify in "Comments"*)

W49: Other (*Specify in "Comments"*)

Process Modifications

W51: Instituted closed-loop recycling W52: Modified equipment, layout, or piping

W53: Changed process catalyst W54: Instituted better controls on operating conditions (flow rate, temperature, pressure, residence time)

W55: Changed from small volume containers to bulk containers to minimize discarding of empty containers

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W58: Other (*Specify in "Comments"*)

Cleaning and Degreasing

W59: Modified stripping/cleaning equipment  
W60: Changed to mechanical stripping/cleaning devices (from solvents or other materials)  
W61: Changed to aqueous cleaners (from solvents or other materials)  
W62: Reduced the number of solvents used, to make waste more amenable to recycling  
W63: Modified containment procedures for cleaning units  
W64: Improved draining procedures  
W65: Redesigned parts racks to reduce dragout  
W66: Modified or installed rinse systems  
W67: Improved rinse equipment design W68: Improved rinse equipment operation  
W71: Other (*Specify in "Comments"*)

Surface Preparation and Finishing

W72: Modified spray systems or equipment  
W73: Substituted coating materials used W74: Improved application techniques  
W75: Changed from spray to other system  
W78: Other (*Specify in "Comments"*)

Product Modifications

W81: Changed product specifications  
W82: Modified design or composition  
W83: Modified packaging  
W89: Other (*Specify in "Comments"*)

Other Source Reduction Activity

## D4 - EMISSION POINT SUMMARY

This form will be used to describe all of the emission points designated on forms A3, A4, and E3. Emission point parameters are needed for air dispersion modeling purposes, for determining operating parameters, and to help in determining the capacity of the equipment when making additional construction requests. Any information related to stack height regulations pursuant to FCAQTC 3D .0533 and section 123 of the Clean Air Act must also be submitted.

**EMISSION POINT 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.

**EMISSION POINT HEIGHT (FT)** - Enter the height (feet) of this emission point from base (ground level at area below emission point) to the top of the emission point.

**EQUIV. DIAM. (FT)** - Enter the inside diameter of the emission point at its exit point. If the emission point is not round enter the equivalent diameter using the following equation:  
 $2 \times L \times W / (L+W)$  where L is the length and W is the width

**TEMP.(F)** - Enter temperature of the emission point gas in Fahrenheit.

**VELOCITY (FT/SEC)** - Enter the velocity in feet per second of the emission point gas emitted from the emission point.

**FLOW RATE (ACFM)** - Enter flow rate of the emission point gases in actual cubic feet per minute.

**EMISSION POINT DIRECTION** - Enter one of the following:

**V**= Vertical emission point

**H**= Horizontal emission point

**D**= Downturned emission point

**RAIN CAP?** - Is there a rain cap or other type of obstruction at the emission point opening?  
Yes or no.

The following formulas may be helpful in completing this section:  $\text{Flow rate (ACFM)} = \text{Velocity (ft/sec)} \times 3.14 \times (\text{Equivalent Diameter}/2)^2 \times 60 \text{ sec/min}$   
 $\text{Velocity (ft/sec)} = \text{flow rate (ACFM)} / [3.14 \times (\text{Equivalent Diameter}/2)^2 \times 60 \text{ sec/min}]$

**COMMENTS** - Use additional pages if needed.

## D5 - FACILITY EMISSIONS SUMMARY

This form is used to total the emissions of all regulated air pollutants from all emission sources at this facility in order to evaluate annual emissions for applicability to state and federal regulations. Refer to **CALCULATING POTENTIAL EMISSIONS** at end of this section for more information about potential annual emissions.

**All calculations, assumptions, analysis and other information used to support this form must be included on form D6.**

**POLLUTANT** - Bring forward all regulated pollutants from the D3-1 forms and summarize them on this form.

**CAS NUMBER** - Bring forward the CAS No. for each regulated air pollutant. This is the Chemical Abstract Service Registry Number assigned to each constituent by the American Chemical Society.

**H/T/O** – Indicate the pollutant type(s) by entering the appropriate letters:

H – Hazardous Air Pollutant (HAP) listed under 40 CFR Part 63

T – Toxic Air Pollutant (TAP) listed in FCAQTC 3D .1104 and 3Q .0711

O – Other pollutants including those subject to an NSPS standard, Class I or II substances under Title VI of the Clean Air Act (Stratospheric Ozone Protection) and greenhouse gases GHGs).

Note: Pollutants may be more than one type. For example toluene is classified as both a HAP and a TAP so HT should be entered for this pollutant.

**ANNUAL EMISSIONS IN LBS/YR** – All emissions should be entered in **lbs/yr**.

**ACTUAL** - For each pollutant total all of the calculated actual lbs/year for all of the emission sources entered on Form D3-1 and enter the sum here.

**POTENTIAL** - For each pollutant total all of the calculated potential lbs/year for all of the emission sources entered on Form D3-1 and insert the sum here.

**TOTAL FACILITY FIRING RATE FOR FOSSIL AND WOOD-FIRED BURNERS** - Enter the total heat input rate in Btu/hr firing rate for all fossil and wood-fired burners at the facility.

**COMMENTS** - Use additional pages if needed.

### **CALCULATING POTENTIAL EMISSIONS:**

Potential emissions as defined in FCAQTC 3Q .0103(29), "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 because of category defined under Rule .0503 of this section."

In determining a facility's potential emissions, three quantities (uncontrolled emissions rate, control efficiency, and operational restrictions) must be measured, calculated, or estimated. In addition, emissions from some exempt sources and fugitive emissions sources must be included in determining a facility's potential annual emissions rate.

A. Uncontrolled Potential Annual Emissions Rate - the worst case uncontrolled annual emissions rate (assuming no emissions control or operational limitations). This is determined based on the fuels, materials, etc. which produce the greatest emissions and the maximum operating

conditions that the emission source is capable of operating with out operational restrictions. For example:

- i. For boilers which are permitted to combust No. 2 and No.6 fuel oil, the worst case uncontrolled emission rate is calculated with No. 6 fuel oil.
- ii. For paint spray booths which use different paints, the worst case uncontrolled emissions rate is calculated with the paint which produces the highest emission rate.
- iii. The maximum annual operation is assumed to be 8,760 hrs/yr unless it can be demonstrated that the emission source is only capable of operating for fewer hours per year, e.g. the source must be shut down on a regular schedule for required maintenance.

**B. Controlled Potential Annual Emissions Rate** – the annual emissions rate considering emissions control efficiency and operational limitations specified in federally enforceable permit conditions. If there are no federally enforceable permit limitations, controlled potential annual emissions are equal to the uncontrolled potential annual emissions.

Control Efficiency - the minimum control device efficiency or other parameters as specified in a federally enforceable permit limitation. If your facility's permit does not contain a federally enforceable permit condition for your control device, then the uncontrolled emission rate determines your applicability. If this application is for a new facility or a modification of an existing non-Title V facility, you may use this application as a means to establish synthetic minor limitations in order to avoid Title V permitting.

Operational Restrictions - the limitations on the operation of an emissions source as specified in a federally enforceable permit limitation. If your facility's permit does not contain a federally enforceable permit condition limiting the hours of operation or another parameter, then the uncontrolled emission rate determines your applicability. If this application is for a new facility or a modification of an existing non-Title V facility, you may use this application as a means to establish synthetic minor limitations in order to avoid Title V permitting.

**C. Exempt Emissions Sources** - Emissions from sources exempted from permitting because of category (FCAQTC Rule 3Q .0102 (c)(1)) are not required to be included when determining the facility-wide potential emissions for Title V applicability purposes. However, potential emissions from emission sources exempted from permitting because of size or production rate (FCAQTC Rule 3Q .0102 (c)(2)) must be included when determining the facility-wide potential emissions for Title V applicability purposes.

**D. Fugitive Emissions** – fugitive emissions are required to be included in the calculation of facility-wide potential annual emissions rate for Title V applicability purposes if:

- (1) the fugitive emissions consist of criteria pollutants and the facility belongs to one of the 26 stationary source categories listed in 40 CFR 70.2, or
- (2) the fugitive emissions are from stationary source categories regulated by a standard promulgated under Section 111 (NSPS) or 112 (NESHAP, including Maximum Achievable Control Technology (MACT)) of the federal Clean Air Act, but only with respect to those air pollutants that have been regulated for that category, or
- (3) the fugitive emissions are HAPs (Hazardous Air Pollutants listed in Section 112(b) of the Clean Air Act).

## E1 - TITLE V INFORMATION

**INDICATE IF YOUR FACILITY IS SUBJECT TO TITLE V BY CATEGORY OR BY EMISSION LEVEL -**

A facility may be subject to Title V requirements based on its emissions level or its source category classification as described in FCAQTC 3Q .0502 and 40 CFR 70.3

Emissions level facilities: Facilities with emissions levels exceeding the major source definitions in 40 CFR 70.2 are subject to Title V requirements. (i.e., all major sources are subject to Title V).

Source category facilities subject to Title V: All NSPS and NESHAP sources, including area sources; any source required to have a permit under parts C or D of Title I of the Act; or any source in a source category designated by the U.S. EPA as requiring a Title V permit. In Forsyth County, NSPS and NESHAP area source facilities are currently deferred from Title V applicability, pending the completion of a study by EPA to determine whether or not this deferral should be permanent. As new NSPS and Section 112(d) standards (MACT/GACT) are promulgated, each rule will state whether the area source category affected by the rule may continue to be deferred, will be permanently deferred or will require a Title V permit.

**IF SUBJECT BY CATEGORY, INDICATE THE CATEGORY -** Indicate which categories, as specifically designated by the U.S. EPA, at your facility trigger the Title V permit requirements. If your facility is an NSPS or NESHAP area source which is currently deferred from Title V permit requirements, do not enter the category.

**IF SUBJECT BY EMISSION LEVEL, COMPLETE THE FOLLOWING -** List the pollutants at your facility which exceed the emission rates established for a major facility as defined in 40 CFR 70.2. Note that, the U.S. EPA may also establish by rule, "lesser quantity" emission rates for certain hazardous air pollutants which also define a source as major. Also indicate the rate (including units) at which the pollutant is emitted from your facility.

**ARE YOU SUBJECT TO ANY CURRENT MAXIMUM ACHIEVABLE CONTROL TECHNOLOGIES (MACTs) OR FUTURE MACTs -** Indicate all promulgated MACTs or future MACTs for which your facility is subject or will be subject.

**LIST ANY ADDITIONAL REGULATIONS WHICH ARE REQUESTED TO BE INCLUDED IN THE PERMIT SHIELD AND PROVIDE AN EXPLANATION FOR THE REQUESTED SHIELD. -** All applicable regulations identified in the permit application will be included in the permit shield. List here any additional regulations which are requested to be included in the permit shield and provide an explanation (For more detail, see FCAQTC 3Q .0512).

## **E2 - TITLE V INSIGNIFICANT ACTIVITIES SUMMARY**

Title FCAQTC 3Q .0507(b) states that a Title V application shall identify insignificant activities exempted because of size or production rates under 3Q .0503(8). However, the insignificant activities exempted because of category under 3Q .0507(7) are not required to be identified in the application. Additionally, a D3-1Form must be completed for each of the insignificant activities listed on this form.

### **INSIGNIFICANT ACTIVITIES PER TITLE FCAQTC 3Q .0507(b)**

**DESCRIPTION OF EMISSION SOURCE** - Briefly describe the emission source for which exemption is allowed per .0507(b) as an insignificant activity (e.g., a 200 gallon organic liquid storage tank, emergency generator, etc.). These activities are listed in 3Q .0503(8). If there are multiple identical emission sources qualifying for exemption (e.g., five (5) 200 gallon organic liquid storage tanks) indicate the number of these sources in the description.

**UNITS** - Enter the unit capacity which qualifies this emission source as an insignificant activity (e.g., 1000 gallons, 30 KW, etc).

**BASIS FOR EXEMPTION (REF. FCAQTC 3Q .0507(b))** - Indicate the basis for which this emission source qualifies as an insignificant activity (e.g., size, emission level, or production rate).

## **E3 - EMISSION SOURCE LISTING (INITIAL TITLE V FACILITY)**

This form is to be used by existing Title V facilities for their initial permit applications. It is not required for subsequent permit modifications. Form A4 should not be used.

**EMISSION SOURCE ID NO.** - Enter a unique emission source ID number for each emission source for which application is made. Large groups of similar or collocated fugitive emission sources may be grouped together and be assigned a single ID No. (e.g., valves, pumps, compressors, stockpiles = ID No. F195). It is recommended that each emission source ID No. start with ES\_\_\_, fugitive emission source ID No. F\_\_\_, control device ID No. CD\_\_\_, and emission point ID No. EP\_\_\_.

**EMISSION SOURCE DESCRIPTION** - Describe each emission source for which application is made. For fugitive emissions, enter the appropriate equipment such as valves, pumps, compressors, etc.

**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.

**CONTROL DEVICE DESCRIPTION** - Describe each control device to be permitted at this facility.

**EMISSION POINT 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. For fugitive emissions enter "FUGITIVE".

## **E4 - COMPLIANCE PLAN (METHOD OF COMPLIANCE)**

This form must be completed for each pollutant from each permitted emission source. Therefore, the applicant must indicate the monitoring requirements, test methods, recordkeeping requirements, and reporting requirements for each pollutant listed on form D3-2 from each permitted emission source listed on a form B.

**EMISSION SOURCE ID NO.** -Transfer the emission source ID No. from forms B.

**REGULATED POLLUTANT** - Identify a pollutant listed on form D3-2.

**APPLICABLE REGULATION** -Transfer the regulation to which this pollutant is applicable from form D3-2.

**ALTERNATIVE 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 A5.

**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 do not require periodic testing or 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) APPLICABLE** -Enter YES if CAM is required by 40 CFR Part 64. Enter NO if not required.

**IS COMPLIANCE ASSURANCE MONITORING PLAN ATTACHED** - If CAM is required, attach a "CAM Plan" containing the information required under 40 CFR 64.4.

**MONITORING DEVICE TYPE** - Indicate the type of device which will be used to monitor the emission rate of this pollutant (if applicable).

**MONITORING LOCATION** - Indicate the location of the monitoring device for this pollutant (e.g. inlet to emission point ID No. EP254, exit from baghouse ID No. CD423).

**OTHER MONITORING METHODS** - 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.

## 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.**

Fill in the blanks with the company name, address, city, state, county and air quality permit number (if existing). The name of the company must be the legal entity name as shown on Form A1.

**Schedule for Submission of Compliance Certifications During the Term of the Permit:** Fill in the frequency of submittal, which must be at least annually or more frequently if specified by an applicable requirement. In addition, fill in the beginning date of the submittal. The applicant must certify that he complies with the requirements as specified in Title FCAQTC 3Q .0520. These include certifying to the truth, accuracy, and completeness of this application.

**The undersigned certifies under the 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 FCAQTC 3Q .0520(b). Type or print the name and title of the responsible company official in the blank provided under the signature line. 40CFR 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:
  - i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - ii) The delegation of authority to such representatives is approved in advance by the permitting authority;
- 2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- 3) 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).

## E6 - COMPLIANCE SCHEDULE

This form is to be used for any requirement with 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 step 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:

**EFFECTIVE AT THE TIME OF PERMIT ISSUANCE (YES) or (NO)** – Indicate the facility's compliance status with respect to all applicable requirements in effect at the time of permit issuance. Compliance requires that the facility be meeting ALL aspects of the applicable requirements and permit conditions including the operation of all necessary control equipment, the implementation of all required monitoring procedures, implementing operating restrictions (where applicable), and all other such activities required under the permit.

**EFFECTIVE DURING THE TERM OF THE PERMIT (Future-Effective Requirements) (YES) or (NO)** - Indicate the facility's compliance status with respect to all applicable requirements which will become effective after permit issuance. Compliance requires that the facility meet ALL aspects of the applicable requirements and permit conditions including the operation of all necessary control equipment, the implementation of all required monitoring procedures, implementing operating restrictions (where applicable), and all other such activities.

- a. **IDENTIFY EMISSION SOURCE ID NO.** - Identify by ID No. the emission source 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.
- b. **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.
- c. **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.
- d. **DETAILED SCHEDULE OF COMPLIANCE: STEP(S)/DATE EXPECTED** - 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.
- e. **FREQUENCY FOR SUBMITTAL OF PROGRESS REPORTS (6 MONTH MINIMUM)** - Subsequent 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.
- f. **STARTING DATE FOR SUBMITTAL OF PROGRESS REPORTS** - Indicate the initial date of submittal for the progress reports.

## E7 - TITLE V MINOR MODIFICATION

This form must be completed and submitted for each minor modification to a Title V permit. If this information is not supplied the application will be considered incomplete.

Fill in the blanks with the facility name, current permit number, and the CDS Plant ID number. The CDS Plant ID is a 10 digit number used to identify facilities in a national database. For facilities in Forsyth County, North Carolina the first five digits are 37067. The last five digits are the permit number for the facility (e.g. 00123).

**New or Modified Equipment:** List the emissions sources, control devices, and associated ID numbers of the equipment to be modified or added by the modification (see the instructions for Form A3 for additional information). Continue the list on an additional page if necessary. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Description of Modification:** Provide a brief narrative description of the changes proposed in the modification. The description should explain why the modification is being requested, where the modification will be made at the facility, any emissions units being removed, and any other information needed to describe the proposed changes. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Emissions Changes Resulting from Modification:** List any increases or decreases in the potential emissions at the facility resulting from the proposed modification. Only the emissions changes for particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), lead, and aggregated hazardous air pollutant emissions (HAPs) are required to be listed. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Completed D3-2 Forms Attached:** Attach copies of the D3-2 Forms for the emissions sources modified or added by the proposed modification. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Group Processing Requested:** Indicate whether group processing is being requested for this application. If group processing is requested, Rule 3Q .0515(b)(2) require's the applicant to provide a list of the facility's other pending applications awaiting group processing and a determination of whether the requested modification, aggregated with these other applications, equals or exceeds:

- (1) 10 percent of the emissions allowed for the source or which the change is requested,
- (2) 20 percent of the applicable definition of major facility, or
- (3) five tons per year.

**Draft Permit Attached:** Indicate whether draft permit language addressing the proposed modification has been provided with the application. If not provided, this language will be provided by the Department. Omission of this information will not delay approval the application under the local construction and operation (Section 3Q .0300) permit program.

FORSYTH COUNTY APPLICATION FOR AIR QUALITY PERMIT TO CONSTRUCT AND OPERATE

**Certification:** The application must be signed and dated by a Responsible Official certifying that the proposed modification meets the criteria for using the procedures for minor modifications (Rule 3Q .0515). This certification will be considered a request that these procedures be used. Rule 3Q .0520 also requires the Responsible Official to certify the truth, accuracy, and completeness of any application. Form E5 - Title V Compliance Certification is not required for minor modifications provided this form is signed and dated by a Responsible Official. 40 CFR 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:
  - i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - ii) the delegation of authority to such representatives is approved in advance by the permitting authority;
- 2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

## E8 - SECTION 502(b)(10) CHANGE NOTIFICATION

This form must be completed and submitted for each Section 502(b)(10) Change at a Title V facility. If this information is not supplied the application will be considered incomplete.

Fill in the blanks with the facility name, current permit number, and the CDS Plant ID number. The CDS Plant ID is a 10 digit number used to identify facilities in a national database. For facilities in Forsyth County, North Carolina the first five digits are 37067. The last five digits are the permit number for the facility (e.g. 00123).

**Anticipated Date of Change:** Specify the date the changes are expected to be implemented at the facility. This notification must be received by the Department and EPA Region 4 at least seven days before operating the proposed changes.

**New or Modified Equipment:** List the emissions sources, control devices, and associated ID numbers of the equipment to be modified or added by the modification (see the instructions for Form A3 for additional information). Continue the list on an additional page if necessary. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Description of Change:** Provide a brief narrative description of the changes proposed in the modification. The description should explain why the modification is being requested, where the modification will be made at the facility, any emissions units being removed, and any other information needed to describe the proposed changes. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Emissions Changes Resulting from Change:** List any increases or decreases in the potential emissions at the facility resulting from the proposed modification. Only the emissions changes for particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), lead, and aggregated hazardous air pollutant emissions (HAPs) are required to be listed. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Permit Conditions Not Applicable After Change:** List the emissions source ID Numbers and cite any permit conditions that will not be applicable after the proposed modification. Alternatively, this information may be provided by providing the Department an additional copy of the local construction and operation (Section 3Q .0300) permit application.

**Notification Mailed to EPA Region 4?:** Indicate whether a copy of the notification has been mailed to EPA. If this notification is not sent to EPA Region 4, the Department will forward a copy to the appropriate at EPA Region 4. The permittee is required to notify the Director and EPA Region 4 at least seven days before making Section 502(b)(10) changes. Submitting this form to the Department satisfies the requirement to notify the Director. A copy of this form may be mailed directly to EPA Region 4 at the following address:

Operating Source Section  
USEPA/APTMD/ARTB  
61 Forsyth St., SW  
Atlanta, GA 30303

FORSYTH COUNTY APPLICATION FOR AIR QUALITY PERMIT TO CONSTRUCT AND OPERATE

**Certification:** The Responsible Official is required to certify that the changes meet the criteria for processing as a Section 502(b)(10) Change. Rule 3Q .0520 also requires the Responsible Official to certify the truth, accuracy, and completeness of any application. To meet these requirements, this notification must be signed and dated by a Responsible Official certifying the truth, accuracy, and completeness of this notification as well as any associated permit applications. Form E5 - Title V Compliance Certification is not required to incorporate the Section 502(b)(10) Changes in the Title V permit provided this form is signed and dated by a Responsible Official. 40 CFR 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:
  - i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - ii) the delegation of authority to such representatives is approved in advance by the permitting authority;
- 2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

## E9 – TITLE V RENEWAL

Form E9 must be submitted by Title V facilities no later than 9 months before the expiration of the permit. Additional forms are required to address requirements not included in the current permit or for regulations that will become effective during the next permit term.

**FACILITY NAME** – The full business name of the facility as registered with the Secretary of State's Office.

**SITE ADDRESS, CITY** – The physical location where the agency would go to inspect the equipment.

**MAILING ADDRESS, CITY, STATE, ZIP CODE** – The address at which the facility receives mail.

**ON-SITE CONTACT PERSON, TITLE, PHONE, FAX, EMAIL** – The person at the facility who is responsible for providing information concerning the facility.

**LEGAL CORPORATE OWNER** – If the facility is wholly or partly owned by another entity, identify that entity.

**TECHNICAL CONTACT, MAILING ADDRESS, CITY, STATE, ZIP CODE, TITLE, PHONE, FAX, EMAIL** – The person at the facility to contact for information about the permit application.

**RESPONSIBLE OFFICIAL** – The person authorized to sign permit applications defined in 40 CFR 70.2:

- 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:
  - i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
  - ii) The delegation of authority to such representatives is approved in advance by the permitting authority;
- 2) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- 3) 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).

**MAILING ADDRESS, CITY, STATE, ZIP CODE, TITLE, PHONE, FAX, EMAIL** – Contact Information for the Responsible Official.

**CURRENT PERMIT NO. and EXPIRATION DATE** – The current permit number, including revision number, e.g. "TV1", and the expiration date listed on the permit.

FORSYTH COUNTY APPLICATION FOR AIR QUALITY PERMIT TO CONSTRUCT AND OPERATE

**TITLE V APPLICABILITY** – Check the appropriate box or boxes classifying the facility as a Title V source.

CAP (CRITERIA AIR POLLUTANT) EMISSIONS – Major Sources with potential annual emissions of criteria pollutants (Nitrogen Oxides, Volatile Organic Compounds, or any pollutant for which a national ambient air quality standard, NAAQS, has been promulgated) equal to or greater than the major source threshold. The major source threshold for pollutants in attainment areas for the associated NAAQS is 100 tons per year. The major source threshold for pollutants in nonattainment areas for the associated NAAQS is defined in 40 CFR 51.165(a)(1)(iv)(A).

HAP (HAZARDOUS AIR POLLUTANT) EMISSIONS – Major sources with potential annual emissions of a single HAP equal to or greater than or equal to 10 tons per year or potential annual of total HAP emissions equal to or greater than 25 tons per year.

OTHER EMISSIONS – Major sources with potential annual emissions of any regulated air pollutant as determined by rule equal to or greater than 100 tons per year. These include:

- a. Pollutants subject to any standard under section 111 of the Clean Air Act, e.g. NSPS,
- b. Any class I or II substance subject to a standard under Title VI of the Clean Air Act, Stratospheric Ozone Protection,
- c. Any pollutant that otherwise is subject to regulation under the Act, and
- d. Greenhouse gas emissions (GHG) except the major source threshold for GHG emissions is 100,000 tons per year of CO<sub>2</sub> equivalent emissions.

CATEGORY – Facilities in a source category designated by EPA as subject to Title V permitting requirements, 40 CFR Part 70.

POLLUTANT(S) FOR WHICH THE FACILITY IS MAJOR – List all of the pollutants emitted, or potentially emitted, from your facility in quantities equal to or greater than the associated major source thresholds.

**NEW APPLICABLE REQUIREMENTS**

LIST ANY APPLICABLE REGULATIONS OR REQUIREMENTS NOT INCLUDED IN THE CURRENT PERMIT – If regulations or requirements that apply to a permitted emission source are not included in the current permit they must be listed here.

LIST ANY APPLICABLE REGULATIONS THAT WILL BECOME EFFECTIVE DURING THE NEXT PERMIT TERM – Promulgated regulations that apply to permitted emission sources and become effective during the next permit term must be added during renewal. List these here.

For requirements not included in the current permit or that will become effective during the next permit term, appropriate forms must be included with the renewal application describing the affected equipment (B forms) and any associated control devices (C forms), emissions (D3-1 form), applicable requirements (D3-2 form), supporting information and calculations (D6 form), compliance method (form E4), and compliance schedule (form E6). If modifications to your facility are required to comply with an applicable requirement, you may also be required to submit additional forms, and an application processing fee.

**CERTIFICATION** – The application must be signed and dated by a "responsible official" as defined in 40 CFR Part 70.2 certifying the items included in this section.