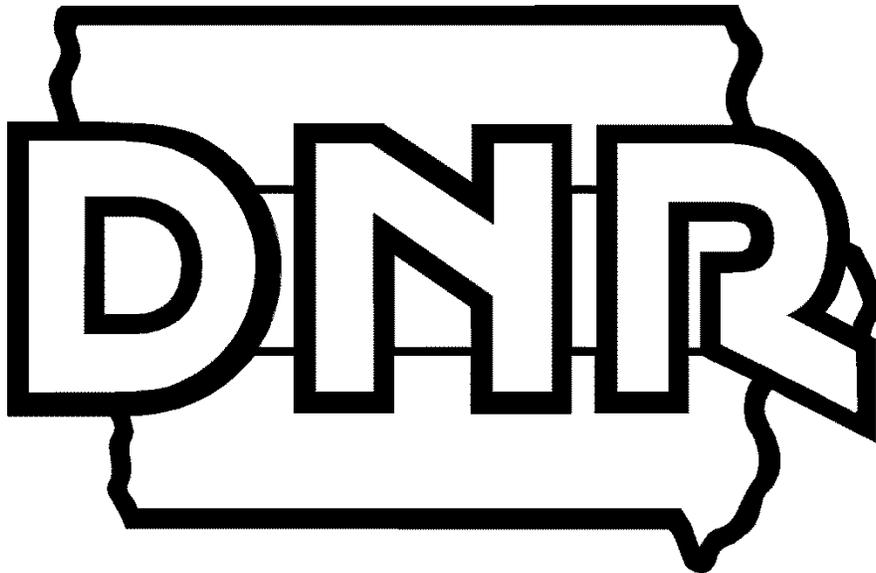


IOWA TITLE V

OPERATING PERMIT APPLICATION

INSTRUCTIONS

(Revised 3/2016)



Iowa Department of Natural Resources
Environmental Services Division
Air Quality Bureau
7900 Hickman Road, Suite 1
Windsor Heights, Iowa 50324

APPLICATION INSTRUCTIONS TABLE OF CONTENTS

APPLICATION INTRODUCTION	3
PART 1 - EMISSION INFORMATION	7
FORM 1.0 FACILITY IDENTIFICATION	7
FORM 1.1 PLANT LOCATION & LAYOUT DIAGRAM	10
FORM 1.2 SCHEMATIC - PROCESS FLOW DIAGRAM.....	11
FORM 1.3 INSIGNIFICANT ACTIVITIES - POTENTIAL EMISSIONS (567 IAC 22.103)	12
FORM 1.4 POTENTIAL TOXIC EMISSIONS - SIGNIFICANT ACTIVITIES.....	14
FORM 1.5 POTENTIAL EMISSIONS - SIGNIFICANT ACTIVITIES	15
FORM CA-01 CALCULATIONS	16
FORM 2.0 EMISSION POINT INFORMATION.....	18
FORM 3.0 EMISSION UNIT DESCRIPTION - POTENTIAL EMISSIONS.....	20
FORM 4.0 EMISSION UNIT - ACTUAL OPERATIONS AND EMISSIONS.....	25
FORM CE-01 POLLUTION CONTROL EQUIPMENT DATA SHEET	29
FORM ME-01 CONTINUOUS MONITORING SYSTEMS	31
FORM 5.0 TITLE V ANNUAL EMISSIONS SUMMARY/FEE.....	33
PART 2 - REQUIREMENTS AND COMPLIANCE	35
Part 2 - General Facility Requirements	36
Part 61 NESHAP Information	36
Boiler and Process Heater Information	36
Engine Information.....	36
Part 2 - Emission Point Information	36
CAM Calculation (Monitoring Requirements)	38
PART 3 - APPLICATION CERTIFICATION	40
APPENDICES TO THE APPLICATION	41
Appendix A: Hazardous Air Pollutants.....	41
Appendix B: Accidental Release Prevention	45
Appendix C: Part 61 NESHAP Reference List	53
Appendix D: Stratospheric Ozone Depleting Chemicals.....	54
Appendix E: Acid Rain and CSAPR	57
Appendix F: Prevention of Significant Deterioration (PSD) Information Worksheet.....	59
Appendix G: Proposed Limits and Alternative Operating Scenarios	61
Appendix H: NSPS Reference List	63
Appendix I: Part 63 NESHAP Reference List.....	67
Appendix J: Compliance Assurance Monitoring.....	74

IOWA TITLE V OPERATING PERMIT APPLICATION INTRODUCTION

Air Quality Permitting

Historically the Iowa Department of Natural Resources has issued air quality construction permits only. The purpose of the construction permit is to evaluate before equipment installation, whether the proposed equipment or air pollution control equipment has the potential to comply with the state and federal emission standards and the National Ambient Air Quality Standards. With the passage of the Clean Air Act Amendments of 1990, states are required to implement an air quality operating permit program. While the construction permits are issued for the life of the equipment or until a modification is issued, the operating permits have a maximum term of 5 years and must be renewed.

An emissions fee, based upon actual emissions, must be submitted annually on July 1, and effective January 15, 2016, there is a Title V operating permit application fee for renewal and initial Title V applications. The application fee is not payable at the time the application is submitted, however. Title V facilities will be billed on a frequency basis determined by the Department for operating permit application review activities until the project is completed.

Definitions

General air program definitions are found in 567 IAC (Iowa Administrative Code) 20.2; Nonattainment area definitions are found in 567 IAC 22.5(1); Title V definitions, the list of "Hazardous Air Pollutants", and the list of "High Risk Pollutants" are found in 567 IAC 22.100; and the Acid Rain definitions are found in 567 IAC 22.120.

TITLE V OPERATING PERMIT APPLICATION

The owner or operator of an air pollution source subject to the Title V Operating Permit Program is required to submit, to the Iowa Department of Natural Resources, two copies of the Title V application. If your facility is located in Linn or Polk County, please send one additional copy to the corresponding county directly. An additional copy must also be sent to EPA Region VII, Attention: Chief of Air Permits, Air Permits and Compliance Branch, 11201 Renner Blvd., Lenexa, KS 66219. You may submit your application electronically using the State Permitting and Air Reporting System (SPARS). If you submit your application using the SPARS, you do not need to send hard copy to EPA or Linn and Polk counties. The application must include all emission points, emission units, air pollution control equipment, and monitoring devices at the facility. All emissions generating activities, including fugitive emissions, must be included.

Title V Operating Permit Application CONTENTS

The Title V Operating Permit Application form is divided into 3 parts. Part 1 includes the general facility and emissions information. Part 1 resembles an emissions inventory but must also include stack dimensions, stack UTM coordinates, exhaust information, and process flow diagrams. In addition, Part 1 also includes the requirement to pay a per ton emissions fee based upon actual emissions for the previous calendar year.

Part 2 of the Title V Operating Permit Application requires the identification of all applicable requirements for each emission unit at the facility and your plans for demonstrating compliance on an ongoing basis. For those sources at your facility that are not in compliance, schedules for coming into compliance are to be included in Part 2 of the application. A Title V permit cannot be issued unless the facility is in compliance with all requirements or is complying with an enforceable compliance schedule.

Part 3 of the Title V Operating Permit Application is the certification of emissions fee payment, application fees agreement, certification of compliance, and certification of truth and accuracy.

For a renewal application, it is helpful to the review process to include a list of equipment that has been taken out of service and construction permits that have been rescinded since the issuance date of the last Title V permit.

Title V Operating Permit Application DUE DATES

Unless otherwise specified, the due date for new Title V sources is within 12 months of becoming subject to Title V. A renewal application must be submitted at least 6 months, but not more than 18 months, prior to the date of permit expirations.

Thresholds

To determine if your facility is subject to the Title V Operating Permit Program you should determine if, considering enforceable permit restrictions, **POTENTIAL** emissions¹ exceed any of the following:

MAJOR SOURCE THRESHOLDS

Pollutant	Threshold
Carbon Monoxide	100 tons per year
PM-10 Particulate	100 tons per year
Volatile Organic Compounds (VOCs)	100 tons per year
Nitrogen Oxides	100 tons per year
Sulfur Dioxide	100 tons per year
Lead	100 tons per year
Any single Hazardous Air Pollutant (HAP)	10 tons per year
All HAPs combined	25 tons per year

The full definition of Title V applicability, which includes NSPS, NESHAP and acid rain sources, is found in 567 IAC 22.101. **READ THIS DEFINITION CAREFULLY.** Note the source category exemptions specified in subrule 22.102 for certain non-major sources subject to a NSPS or NESHAP.

Potential to emit is calculated assuming that your equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment. Bottle-necks in a production line do not constitute an enforceable limitation on production unless those bottle-necks are included as an operating condition in a federally enforceable permit. Therefore, in most cases bottle-necks cannot be used as a basis for limiting an emission unit's capacity below the manufacturer's rated capacity. **Only enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions.**

Fugitive Emissions of criteria pollutants must be included when calculating potential emissions to determine Title V applicability if your facility is one of the 27 "Stationary Source Categories" listed in 567 IAC 22.100. If your facility is not one of the 27 "Stationary Source Categories", fugitive emissions of criteria pollutants are not included for determining applicability. Please note that fugitive emissions of HAPs must be included when calculating potential HAP emissions to determine Title V applicability regardless of whether your facility is one of 27 "Stationary source Categories."

¹ Potential to emit for criteria pollutants (CO, PM₁₀, VOC, NO_x, SO₂, and Pb) may include fugitives for some source categories. Refer to 567 IAC 22.101 and 22.100 definitions of "Major source" and "Stationary source categories."

UNPERMITTED SOURCES

- If process equipment or control equipment has been installed, constructed, or modified at your facility **since September 23, 1970**, and the process is not specifically exempted in the rules from construction permitting, a construction permit should have been obtained prior to initiating construction.
- Sources of VOCs must obtain construction permits if constructed or modified since April 1987.
- Sources which have not obtained the necessary construction permits prior to construction must obtain those permits ("as-built" construction permits).
- Sources not required to obtain construction permits are required to be in compliance with all applicable air quality rules.
- If a construction permit has not been obtained for an already constructed source that is subject to construction permitting requirements - a plan and schedule for obtaining the construction permit, including methods verifying compliance, and establishing any monitoring and reporting regimes must be included in Part 2 of the Title V Operating Permit application.

Filling Out the Application Forms

If you submit the application using the State Permitting and Air Reporting System (SPARS), follow the SPARS instructions at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/SPARS.aspx>.

If you submit the application by hardcopy, you may download the application forms from <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/OperatingPermits/FormsInstructions.aspx>.

1. Provide an index to your application. Applications may be organized either in form number order, or by emission point number.
2. Check the List of Insignificant Activities located in the rule, 567 IAC 22.103. Some of the equipment at your facility may not need to be listed in the application if they meet any one of the exemptions listed in 567 IAC 22.103(1).
3. Type or print all information submitted. Because of the large number of applications that the department will have to process and the data entry requirements for this information, typed submittal is preferred. Illegible documents are not acceptable and will be returned as incomplete.
4. Emission factors will be the basis for many company's calculations of emissions. The Department will not provide you with emission factors directly. However, if you do not have test data or continuous emission monitor data from which to calculate your emissions you will need to obtain access to EPA's emission factors. Sources of emission factors are as follows:
 - a) CHIEF Website - This is EPA's source for the latest information on air emission inventories and emission factors. The Clearinghouse for Inventories and Emission Factors (CHIEF) provides electronic access to several tools for estimating emissions of air pollutants. You can access and download the following from the CHIEF website: SPECIATE, WebFIRE, TANKS, LandGEM, all of the AP-42 stationary source volume, and the draft parts of AP-42 undergoing revision. To access the CHIEF website, go to <http://www.epa.gov/ttn/chief/index.html>.
 - b) WebFIRE is the online version of the Factor Information and Retrieval Data System (FIRE) and it has replaced the software application, FIRE version 6.25, and the Microsoft Access version of the database. An online version of FIRE allows more frequent updates

and easier access. WebFIRE contains EPA's recommended criteria and hazardous air pollutant emission estimation factors. It includes information about industries and their emitting processes, the chemicals emitted, and the emission factors themselves. WebFIRE can be accessed from the CHIEF website <http://www.epa.gov/ttn/chief/webfire/index.html>.

- c) The Compilation of Air Pollutant Emission Factors, AP-42, is the recommended source of air pollutant emission factors, with descriptions of activities producing criteria and hazardous air pollutant emissions. Emission data for many polluting activities are obtained from source tests, material balance studies, and engineering estimates. AP-42 can be accessed from the CHIEF website <http://www.epa.gov/ttn/chief/ap42/index.html>.
- d) TANKS is a user-friendly pc software program for estimating volatile organic compound emissions from both fixed and floating roof storage tanks. To download TANKS go to CHIEF web site <http://www.epa.gov/ttn/chief/efpac/esttools.html>.
- e) SPECIATE is a clearinghouse for speciation factors for both volatile organic compounds (VOC) and particulate matter (PM) and presents speciation data by source category and by pollutants. To download or browse the SPECIATE database, go to the CHIEF website <http://www.epa.gov/ttn/chief/efpac/esttools.html>.
- f) LandGEM, Landfill Gas Emissions Model, is an automated estimation tool with a Microsoft Excel interface that can be used to estimate emission rates for total landfill gas, methane, carbon dioxide, nonmethane organic compounds, and individual air pollutants from municipal solid waste landfills. It can be downloaded from the CHIEF website <http://www.epa.gov/ttn/chief/efpac/esttools.html>.
- g) Other sources of emission factors are your trade associations and equipment manufacturers. Be sure to identify the source of your emission factors in item #23 on Form 3.0, and item #22 on Form 4.0.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS

PART 1 - EMISSION INFORMATION

FORM 1.0 FACILITY IDENTIFICATION

This is a **REQUIRED** form for all Title V facilities. The Title V Operating Permit applicability is defined in the rules in 567 IAC 22.101.

Permit Application Type: Check the box/boxes that are appropriate for your current submittal. For all Title V facilities your first submittal will be an "initial" permit application. If additional information is requested by DNR, that submittal must include another Form 1.0 identifying your facility and another Part 3, Application Certification with the Certification of Truth, Accuracy, and Completeness block completed. The box on Form 1.0 for Supplemental Information should be checked in this circumstance.

An application for "Renewal" of a Title V Operating Permit will be required at least 6 months, but no more than 18 months, prior to the date of permit expiration.

Between the time of permit application and permit issuance some facilities may undergo changes of equipment or operation. These changes may require that supplemental information be added to the original permit application submittal. You should check the appropriate box on Form 1.0 to identify what type of application you are submitting.

Application Includes: Check the box indicating whether your Title V application submittal includes Part 1 and 3, or Parts 2 and 3, or all three parts.

Facility Information

1. **Company/Facility Name:** Enter the official company name and/or plant designation for the facility that is submitting the Title V application. If your official company name has changed please enter the new facility name in the box. This official facility name must be entered the same on every form submitted.
2. **EIQ Number:** This is the number issued for the 1993 emission inventory questionnaire. This number must be entered on each form and worksheet returned to DNR. Contact Weston Li at (515) 725-9580 if you need to have an EIQ number assigned.
3. **Facility Number:** This number is a 7 digit number separated by hyphens (e.g. xx-xx-xxx) and the first two numbers are the county number where the facility is located.

Enter the Mailing Address, City and ZIP Code. The address is the physical location of the facility.

4. **Permit Contact Name:** The permit contact is the person most familiar with the operations of the plant and who should answer any questions regarding the permit application submitted for this particular facility.

Enter the permit contact's title, phone number, email address, mailing address, city, state, and ZIP code. Note: The mailing address should be entered if the mailing address of the facility is different from the street address.

Billing & Invoice Remittance Information (if different than permit contact information above)

5. **Billing Contact Name:** The billing contact is the person that will be processing the application fee bills for the facility.

Also enter the company name, phone number, email, mailing address, city, state, and ZIP code of the billing contact if one is identified.

Parent Company Information

6. **Parent Company/Owner Name:** Complete this block with the name of the parent company or owner if another company at a different location owns your company wholly or in part.

Also enter the Parent Company Contact/Agent, the contact/agent's title, phone number, email, mailing address, city, state, and ZIP code of the parent company/owner name if one is identified.

7. Number of Employees

Enter the Facility Total. The facility total is the total number of full time and the equivalent number of part time employees. Two part time workers that are employed 20 hours per week are equivalent to one full time worker.

Enter the **Company Total (Iowa).** The company total (Iowa) is the total number of full time employees that the company employs at all locations in Iowa.

Processes and Products

8. Principal Activity

Provide the Standard Industrial Classification (SIC) code and the North American Industrial Classification System (NAICS) code and the activity descriptions for your facility. These codes are a compilation by the federal government of businesses by type of activity. SIC codes are intended to cover the entire field of economic activity while NAISC codes are specific to the activity performed at the facility.

Standard Industrial Classification (SIC): Enter the SIC code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. The SIC code helps to define what is part of a facility. The SIC is a four digit number used to identify industries. The first two digits are the "major group" of a facility. For example, major group 20 is "Food and Kindred Products." The last two digits of the SIC code identify the specific type of facility. Food products that have 43 as the last two digits, for instance, are Cereal Breakfast Foods manufacturing (SIC code 2043). The Standard Industrial Classification Manual contains all the SIC codes and can be found at the OSHA website: http://www.osha.gov/pls/imis/sic_manual.html.

All emission units in the same SIC code (the first two digits) are considered part of the same facility. There are times when sources having different major SIC codes may be part of the same facility. In that case, use the SIC code that is the main one for your operations. An example of a facility that has more than one SIC code is a plant that both makes and prints on cardboard boxes. Its primary SIC code is 2653, Corrugated and Solid Fiber Boxes. Since the company does some of its own printing on site, its secondary SIC code is 2754, Commercial Printing, Gravure.

North American Industrial Classification System (NAICS): Enter the NAICS code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and the more digits in the code signify greater classification detail. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry. The five-digit NAICS code is the level at which there is comparability in code and definitions for most of the NAICS sectors across the three countries participating in NAICS (the United States, Canada, and Mexico). The six-digit level allows for the United States, Canada, and Mexico each to have country-specific detail. A complete and valid NAICS code contains six digits. A specific 6-digit NAICS code for your facility can be found at the US Census Bureau's website:

<http://www.census.gov/eos/www/naics/>

9. **Secondary Activities:** If your facility includes more than one major activity, provide the additional information here. Enter the SIC and NAICS codes and written descriptions of any secondary activities that may be occurring at the facility (see discussion of secondary activities in #8 above).

Designation of the Responsible Official

10. Enter the information requested for the person who is designated for taking responsibility for the truth, accuracy, and completeness of the Title V Permit Application. **Note:** The actual signature certifying truth, accuracy and completeness is to be submitted on the form for Part 3. The responsible official must meet the definition in the rules 567 IAC 22.100.

**IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS
FORM 1.1 PLANT LOCATION & LAYOUT DIAGRAM**

This form is no longer required as part of the Title V application submittal.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 1.2 SCHEMATIC - PROCESS FLOW DIAGRAM

This form is **REQUIRED** for each process at Title V facilities.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form 1.2 - page of**: Each plant process should have a process flow diagram submitted. Since multiple forms 1.2 may be submitted, this box identifies each page of the total number of forms 1.2 included. As an example, page 2 of 14.
- 4) **(See examples on form 1.2)** Attach and label with company name, EIQ number, and page number all schematic - process flow diagrams for your facility. Diagrams need only show the path of flow of exhausts, throughputs and materials through emission units, control equipment, monitoring equipment and emission points.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 1.3 INSIGNIFICANT ACTIVITIES - POTENTIAL EMISSIONS (567 IAC 22.103)

Before Completing This Portion of the Application Review the Rule Relating to INSIGNIFICANT ACTIVITIES (567 IAC 22.103).

Insignificant activities listed in 567 IAC 22.103(1) need not be listed in the Title V Operating Permit application unless they are needed to determine the applicability of or impose any regulatory requirements.

Subrule 22.103(2) describes the annual emission levels and the categories of emission units which must be included in the application but are insignificant if not needed to determine applicability of Title V or to impose any applicable requirement.

In general, a unit subject to a NSPS or NESHAP standard or permitted by a construction permit cannot be an insignificant unit. Engines subject to NESHAP subpart ZZZZ and/or NSPS subparts IIII and/or JJJJ and boilers subject to NESHAP subparts DDDDD or JJJJJJ are not qualified to be insignificant units. They must be considered significant emission points, and all forms (including Part 2 Engine/Boiler forms) must be submitted for these engines and boilers.

Submit this form to apply to designate emission units as insignificant activities under 567 IAC 22.103.

List all insignificant activities (emission units) to be reported on the application under 567 IAC 22.103.

- Activities may only be listed as insignificant if not needed to determine the applicability of or impose any regulatory requirement. An emission unit that is only subject to the general emission limitations in subrule 567 IAC 23.3 can still qualify as an insignificant activity if it meets the criteria in 567 IAC 22.103.
- Emissions from each emission unit may not exceed the levels specified in 22.103(2).

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form 1.3 - page of** ____: Since some companies may need to use multiple Forms 1.3, this box identifies each page of the total number of Forms 1.3 that have been included.

APPLICATION FOR DESIGNATION AS LISTED INSIGNIFICANT ACTIVITY Summary of Potential Emissions for Each Emission Unit

- 4) **Emission Unit Number**: Enter the identification number for each emission unit. Keep in mind that an emission unit is the specific process that generates the air pollution emissions, e.g. storage tank, boiler, etc.
- 5) **Emission Unit Description**: Provide a written description of the emission unit (process) for which you are claiming designation as an insignificant activity.

6 - 17) Pollutant categories: For each emission unit listed in box 5, enter in the appropriate box the potential emissions in **POUNDS PER YEAR** of each air contaminant emitted. Remember that potential emissions are calculated based upon the emission unit operating at design capacity 8760 hours per year.

Note: Levels of insignificance and a discussion of applicability are found in 567 IAC 22.103.

18) Totals this Page: Enter the total potential emissions in **POUNDS PER YEAR** of each air contaminant from all insignificant activities on this page.

19) Facility Totals (TONS/YEAR): On the first page of your Forms 1.3 (if multiple forms are needed) enter the total potential emissions in **TONS PER YEAR** of each air contaminant from all insignificant activities from all Forms 1.3.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 1.4 POTENTIAL TOXIC EMISSIONS - SIGNIFICANT ACTIVITIES

This form is **REQUIRED** for all Title V facilities.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form 1.4 - page of** : Since some companies may need to use multiple Forms 1.4, this box identifies each page of the total number of Forms 1.4 that have been included.
- 4) **CAS No.**: Enter the Chemical Abstract (CAS) number of the hazardous air pollutant and additional regulated pollutants (that are not reported on Form 1.5) listed in column 5.
- 5) **Chemical Name**: Enter the name of the hazardous air pollutant and additional regulated pollutants (that are not reported on Form 1.5) that corresponds with the CAS number listed in column 4. The hazardous air pollutants of concern under the Title V permitting program are the 187 chemicals or chemical families listed in the rules and the Clean Air Act Amendments of 1990. See APPENDICES
TO THE APPLICATION
Appendix A for
a list of hazardous air pollutants.
- 6) **Potential Emissions (Tons/Yr)**: Summarize the **plant-wide Potential Emissions in tons per year** of each Hazardous Air Pollutant and additional regulated pollutants (that are not reported on Form 1.5) identified in box 5.
- 7) **Totals this Page (Toxics Only)**: Enter, in tons per year, the total Hazardous Air Pollutant potential emissions **for this page**. Exclude non-Toxics pollutants from Box 7.
- 8) **Facility Totals - Potential Emissions (Toxics Only)**: On the first Form 1.4 (if multiple Forms 1.4 are needed) enter the total of all toxic potential emissions for the plant by **adding up all of the individual Form 1.4 page totals (Box 7)**.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 1.5 POTENTIAL EMISSIONS - SIGNIFICANT ACTIVITIES

This form is **REQUIRED** for all Title V facilities.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3), 4) **SUMMARY OF CRITERIA AND OTHER POLLUTANT POTENTIAL EMISSIONS**: This section requires you to summarize the potential emissions of each of the criteria air pollutants and other pollutants from the whole facility and enter the total (Tons per Year) for each pollutant in box #4.
- 5) **Indicate which conditions subject this facility to obtaining an Iowa Title V Operating Permit:**
Check the reason(s) why you are required to submit this Title V Operating Permit Application.
Please note that Total PM, and ammonia are not used in determining Title V applicability.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM CA-01 CALCULATIONS

This form is a calculation worksheet to document how you arrived at certain calculated values that are used on other individual forms throughout this permit application. Duplicate this form as needed and attach it to the form that it is documenting. You may substitute this form with other documents, such as spreadsheets, as long as all the required information is included.

All the calculations, the parameters used in the calculations, and a description of any assumptions used in making the calculations must be clearly documented so that DNR staff can follow the calculations.

AT YOUR FACILITY RETAIN A COPY OF YOUR COMPLETED PERMIT APPLICATION, AS SUBMITTED, INCLUDING ALL CALCULATION SHEETS.

- 1) **Facility Name**: Enter the company/facility name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Emission Point Number**: Enter the number of the emission point (stack or vent) that is associated with the calculations you are documenting on this form. The number of this emission point must correspond to the identification number used on Form 1.2 (Schematic - Process Flow Diagram) for this emission point. Enter "Facility-Wide" if this form provides supporting documentation for Form 1.4 or Form 1.5.
- 4) **Emission Unit (Process) Number**: Enter the number of the emission unit (process) that is associated with the calculations you are documenting on this form. The number of this emission unit must correspond to the identification number you used on Form 1.2 (Schematic - Process Flow Diagram) for this emission unit. Enter "Facility-Wide" if this form provides supporting documentation for Form 1.4 or Form 1.5.
- 5) **Emission Unit (Process) Description or (SCC) Number**: Provide a written description or the SCC number which describes the emission unit that is associated with the calculations you are documenting on this form. Enter "N/A" if this form provides supporting documentation for Form 1.4 or Form 1.5. For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 6) **Calculations are Provided in Support of Information Reported on Form _____, page _____**: Identify the Form number and page number of that form for which this calculation sheet provides supporting documentation. For example Form 3.0, page 17.
- 7) **Emission Calculations**: This space is provided for you to show your calculations. This documentation will allow DNR staff to follow how certain values were calculated. Please provide legible calculations.

If the source of an emission factor is not a widely available source (such as WebFIRE, AP-42, etc.), a copy of the document must be submitted with the application. If emissions are calculated using program models (such TANKS, LandGEM, etc.), the program outputs must be submitted with the application.

If the source of an emission factor is a stack test, please indicate the test date and the test method used and include a copy of the REPORT SUMMARY. Do not submit the entire stack test report. The most recent and approved stack test should be used. If more than one DNR-approved stack test was conducted for an emission point during the emissions inventory year, emissions should be estimated using each DNR-approved stack test result along with the throughput or operating data for the period of time after each stack test date(s). Example calculations are available at DNR website http://www.iowadnr.gov/portals/idnr/uploads/air/insidednr/operpermit/seg_emiss_method.pdf.

In case of a PM/PM₁₀/PM_{2.5} test with less than the minimum catch (or detection limit) of 2.54 mg, 1.44 mg, and 1.35 mg, respectively, the emissions calculation should be based on the minimum catch. Please note that a PM/PM₁₀/PM_{2.5} test should be designed to catch a minimum of 3 times the detection limits. Similarly, for the tests of other pollutants, the emissions calculation should be based on the minimum/detect level if the stack test reports less than the minimum/detect level of the applicable test method. You have the option of testing for long enough to capture the minimum sample weight required by the test method if you wish to.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 2.0 EMISSION POINT INFORMATION

This form is **required** for all Title V facilities.

Form 2.0 - page **of** : Since some companies may need to use multiple Forms 2.0, this box identifies each page of the total number of Forms 2.0 that have been included.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Emission Point Number**: Enter the identification number your company assigns to this particular stack/vent.

The emission point number identifies the point where emissions vent to the atmosphere. Emission points can include stacks, horizontal vents, building ventilation vents, and fugitive sources such as material storage piles (coal, aggregate, etc.), and volatile liquid storage tanks.

- 4) **Emission Point Description**: Provide a brief description of the emission point, i.e. boiler #1 & 2 stack, paint booth #7 wall vent, etc.
- 5) **Emergency Bypass Stack?**: self-explanatory

EMISSION POINT INFORMATION

- 6) **Emission Point Type**: Check the box that best describes the emission point.
- 7) **Stack Shape and Dimensions**: self-explanatory
- 8) **Stack Height Above Ground**: Enter the height above the ground of the stack's exit point.
- 9) **Stack Location UTM Coordinates**: Enter the Universal Transverse Mercator Coordinate (UTM) of the stack in meters. The Easting value should be within the range of 200,000 to 1,250,000 meters and the Northing value should be between 4,450,000 to 4,830,000 meters for locations in Iowa. Use the check boxes to designate whether your facility is in UTM Zone 14 or 15. Use the check boxes to designate whether your UTM coordinates are based on North American Datum of 1927 (NAD 27) or North American Datum of 1983 (NAD 83). For a general discussion of the Universal Transverse Mercator Coordinate (UTM) system or on the North American Datum of 1927 (NAD 27) and North American Datum of 1983 (NAD 83) visit the National Geodetic Survey (NGS) at the National Oceanic & Atmospheric Administration (NOAA) website and review the FAQ section (<http://www.ngs.noaa.gov/faq.shtml>). A NAD 27 to 83 or NAD 83 to 27 convertor may be found at <http://www.ngs.noaa.gov/TOOLS/Nadcon/Nadcon.html>. A UTM convertor for a known latitude and longitude may be found at <http://www.ngs.noaa.gov/TOOLS/utm.html>. Note: If a previous application had the UTM locator and the distance from that point to the stacks, that information could be used to calculate the values for the updated Form 2.0 (12/2007). Convert the feet to meters from the old Form 2.0 (12/1/06) and add distances that are North and East of the UTM, and subtract distances that are South and West of the UTM.

- 10) **Rain Cap or Obstruction**: Check the appropriate box. If YES, specify the type of obstruction, i.e. elbow, rain cap.
- 11) **EXHAUST STREAM**: Enter the flow rate and temperature of the exhaust stream. Please indicate the units of the flow rate by using the acfm (actual cubic feet per minute) or scfm (standard cubic feet per minute) check boxes.
- 12) **Bypass Stacks**: If there are any bypass stacks or parallel stacks through which air contaminants from this emission point may be emitted, enter the bypass stack emission point number and description.
- 13) **List of Emission Units Venting Through This Emission Point**: List the emission unit numbers and corresponding SCC numbers for all units venting through this emission point. The emission unit numbers must correspond to those used on the Schematic - Process Flow Diagram (Form 1.2). For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 14) **List of Control Equipment Associated With This Emission Point**: **For each piece of control equipment a copy of Form CE-01 must be completed, and a unique number assigned.** List all air pollution emission control equipment, by number, serving the emission units vented through this emission point. The control equipment numbers must correspond to those used on the Schematic - Process Flow Diagram (Form 1.2).
- 15) **List of Monitoring Equipment Associated With This Emission Point**: **For each piece of monitoring equipment a copy of Form ME-01 must be completed, and a unique number assigned.** List, by number, any continuous emission monitoring equipment or operational parameter monitoring equipment associated with the emission units venting through this emission point. The monitoring equipment numbers must correspond to those used on the Schematic - Process Flow Diagram (Form 1.2).

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 3.0 EMISSION UNIT DESCRIPTION - POTENTIAL EMISSIONS

This form is **required** for all Title V facilities.

DUPLICATE THIS FORM AS NEEDED AND SUBMIT A COMPLETE COPY FOR EACH EMISSION UNIT (process) AT YOUR FACILITY.

An emission unit is the specific process that generates the air pollution emissions. An example of an emission unit is a boiler combusting coal (coal is the throughput). However, if an emission unit has two throughputs - such as a grain dryer:

Throughput 1: natural gas combustion - NO_x, CO, etc. emissions

Throughput 2: grain - produces particulate emissions

the process should be listed as TWO emission units (one for each throughput) each assigned a separate Emission Unit Number, with TWO forms completed (one for each Emission Unit).

Potential emissions must be calculated based upon the maximum design rate of the emission unit and 8760 hours of operation per year. The only exception to this is if this emission unit has been limited in either process rate or hours of operation by a federally enforceable permit or order.

IF YOU ARE PROPOSING A NEW PROCESS LIMITATION FOR THIS UNIT YOU MUST SUBMIT THE REQUIRED DOCUMENTATION (SEE Appendix G) AND AN ADDITIONAL FORM 3.0 FOR THIS EMISSION UNIT WITH THE "PROPOSED LIMIT" BOX MARKED AND THE PROPOSED LIMITATIONS INDICATED AND NEW POTENTIAL EMISSIONS CALCULATED.

The proposed limit box is located in the upper right hand corner of Form 3.0. New process limitations are effective only after the Department issues the operating permit. Until permit issuance your potential emissions must be calculated and reported on the basis of an 8760 hour operating schedule or as defined under existing permit limits.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form 3.0 - page ___ of ___**: A **separate Form 3.0** must be completed for each emission unit at your plant. An emission unit is the process that produces the air pollution emissions, e.g. boiler, paint booth, etc. Since many companies will need to use multiple Forms 3.0, this box identifies each page of the total number of Forms 3.0 that have been included.
- 4) **Emission Point Number**: Enter the emission point number that your company assigns to the stack or vent serving this emission unit. You may use any numbering scheme that is appropriate to your plant, but this numbering scheme must be used consistently throughout the application to identify each emission point. Each fugitive emissions source, such as uncontrolled rock crushers, dump pits, etc. should be assigned a separate emission point number.
- 5) **Emission Point Description**: Provide a written description of the stack or vent or indicate if this is a fugitive emissions source.

- 6) **EMISSION UNIT NUMBER**: Enter the identification number that your company assigns to this emission unit. Keep in mind that an emission unit is the specific process that generates the air pollution emissions, e.g. boiler, paint gun.
- 7) **SCC Number**: Enter the Source Classification Code Number (SCC) that identifies the type of process or activity occurring at this emission unit. The SCC number corresponds to the Description of Process (Box 8) and specific "emission factor units"(lb/ton, lb/gal, etc.). For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 8) **DESCRIPTION OF PROCESS**: Provide a written description of the process as defined by the SCC number entered in box 7 above. If a SCC number and corresponding description is not available for this specific process please provide your best description of the process.
- 9) **Name of Manufacturer**: Enter the name of the manufacturer of this emission unit (process equipment).
- 10) **Model Name - Model Number - Serial Number**: Enter the model name, number, and serial number of this emission unit.
- 11) **Date of Construction**: Enter the date on which construction was commenced for this emission unit. For the purposes of this question commenced construction means the date that an owner or operator has undertaken a continuous program of construction or modification or that the owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.
- 12) **Date of Installation**: Enter the date of the actual installation of the emission unit equipment. In many cases this will be the same date as the date of construction.
- 13) **Date of Modification**: If this emission unit has been modified since it was originally installed, please enter the date of the last modification.
- 14) **Raw Material - OR - Fuels Used**: Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If multiple raw materials or fuels are used at this emission unit list the worst case fuel or raw material and the pollutant(s) for which it is worst case.
For example:
 - Fuels (throughput)
 - Coal - SO₂, PM & PM-10
 - Natural Gas - NO_x
 - Raw Materials (throughput)
 - Paint #1 - VOC, Toxics, and Lead
 - Paint #2 - PM, PM-10
- 15) **Federally Enforceable Operating Limit**: If this emission unit is subject to any operating limitation, such as limitations on hours of operation, raw materials, or amount of fuel combusted, etc., enter this limitation here. Enforceable limitations are usually established in the construction/operating permit or in an enforcement order.
- 16) **Permit or Rule Establishing Operating Limit**: Enter the source of the operating limitation specified in box 15. The source may be a construction, an operating permit, an administrative or court order.

In either case list the permit number or the order number here. Attach CA-01 if necessary to detail the parameters of the limit.

- 17) **Maximum Hourly Design Rate:** Enter the maximum hourly production rate for this emission unit. For combustion units this is the maximum heat input capacity (in millions of Btu per hour) for the equipment using the fuel specified in box 14.
- 18) **Air Pollution Control Equipment (CE) Number:** Enter the identification number your company has assigned to this piece of emission control equipment. This ID number must correspond to that used in the Schematic - Process Flow Diagram included on Form 1.2. All control devices associated with this emission unit must be identified. Duplicate this form if necessary.
- 19) **Monitoring Equipment:** Enter the identification number of any equipment associated with this emission unit that is used to monitor emissions or operational parameters. This ID number must correspond to that used in the Schematic - Process Flow Diagram included on Form 1.2. All monitors associated with this emission unit must be identified. Duplicate this form if necessary.

POTENTIAL EMISSIONS

- 20) **Air Pollutant:** Enter on page 1 of Form 3.0 the required information related to potential emissions for PM_{2.5}, PM₁₀, Total PM, SO₂, NO_x, VOC, CO, Lead, Ozone, and Ammonia. Potential emission information for Hazardous Air Pollutants and additional regulated air pollutants (ex. fluorides, etc.) should be entered on page 2 of Form 3.0. Please indicate the identity of the pollutant by entering the CAS number and name of the pollutant. Duplicate this form if necessary. If there are no HAPs or additional regulated pollutants emitted from this unit, you are not required to submit page 2 of this form.
- 21) **Emission Factor:** Enter the numerical emission factor (in pounds per unit) being used to calculate the potential emissions from this unit. As noted at the bottom of the form, the most recent emission factors can be obtained for some processes from EPA documents or calculated from the most recent and approved stack test data, worksheets, or continuous emission monitoring data. See the instructions for Form CA-01 (page 16) for additional discussion of supporting documents and the use of stack test results.
- 22) **Emission Factor Units:** Enter the emission factor units that correspond to the numerical emission factor utilized in box 21. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton, pounds/gallon, pounds/million cubic feet, etc. Use the **allowable limit** to calculate potential emissions when applicable.
- 23) **Source of Emission Factor:** Indicate the source of the emission factor used in box 21. See the bottom of Form 3.0 for typical sources of emission factors.
- 24) **Ash or Sulfur %:** For combustion sources only, enter the percent ash in the fuel in the PM_{2.5}, PM₁₀, and PM (total particulate matter) rows. Enter the percent sulfur in the fuel in the SO₂ row.
- 25) **Potential Hourly Uncontrolled Emissions (Lb/Hr):** Calculate the potential uncontrolled emissions on an hourly basis and enter the value in pounds per hour. To calculate potential uncontrolled emissions multiply the Maximum Hourly Design Rate (Box 17) by the Emission Factor (Box 21). In order for this calculation to work correctly the emission factor units must correspond to the units

used in box 17. For example, a spreader stoker boiler burning 3 tons per hour of subbituminous coal times the emission factor of 60 pounds of PM per ton of coal burned equals 180 pounds per hour of PM emitted uncontrolled.

- 26) Combined Control Efficiency %:** The combined control efficiency is the product of the control efficiency multiplied by the capture efficiency. See the instructions for Form CE-01 for additional information on calculating the combined control efficiency. If only one emission control device is used enter the percent control efficiency. Be sure to enter the control efficiency in the box corresponding to the air pollutant for which that efficiency is appropriate. For example, a device may be 90% efficient in removing PM from the air stream but significantly less efficient in removing PM₁₀.

If two control device applies to the same pollutant at an emission point, the control efficiency is calculated using the following formula:

$$\text{Control Efficiency} = CE_1 + CE_2 - [(CE_1 \times CE_2) / 100]$$

where CE₁ = Control Efficiency for First Device
CE₂ = Control Efficiency for Second Device

When two devices are used to remove the pollutant PM₁₀ from the same emission point, the control efficiencies must be combined. For example, if the first device has a control efficiency of 50% and the second device has an efficiency of 80%, the calculation of control efficiency is as follows:

$$\begin{aligned} \text{Control Efficiency} &= 50 + 80 - [(50 \times 80) / 100] \\ &= 130 - [4000 / 100] \\ &= 130 - [40] \\ &= 90\% \end{aligned}$$

Thus, the control efficiency for PM₁₀ at this emission point would be 90%. This formula only works for combining two control efficiencies. For combining more than two control efficiencies use the following formula:

$$\text{Control Efficiency} = 1 - (1 - CE_1) \times (1 - CE_2) \times \dots \times (1 - CE_n)$$

Where CE₁, CE₂, ..., CE_n, and Control Efficiency are the control efficiencies in decimal and n is the total number of control equipment.

Note that the control efficiency of a secondary piece of emission control equipment is dependent upon particle size, grain loading to the device, air flows, etc. Therefore, caution should be used in assigning the control efficiency to multiple control devices.

- 27) Potential Hourly Controlled Emissions (Lb/Hr):** Calculate the hourly controlled emissions by applying the Combined Control Efficiency (box 26) to the Potential Hourly Uncontrolled Emissions (box 25). Enter the value in pounds per hour.
- 28) Potential Annual Controlled Emissions (Tons/Yr):** Calculate the annual potential controlled emissions by multiplying the Potential Hourly Controlled Emissions (box 27) by 8760 hours and converting pounds per year to tons per year.

Unless the emission unit is subject to enforceable limitations on hours of operation (box 15), Potential Emissions are based on 8760 hours per year.

Example potential emissions calculations:

PM:

$$35,365 \text{scfm} * 0.01 \text{gr/dscf} * (1/7000) \text{ lb/gr} * 60 \text{ min/hr} = 3.03 \text{ lb/hr}$$
$$3.03 \text{ lb/hr} * 8760 \text{ hr/year} * (1/2000) \text{ ton/lb} = 13.27 \text{ tons/year}$$

Potential and Allowable Emissions from a Coal Fired Boiler

$$\text{Rated Capacity} = 3081 \text{ MMBtu / hr}$$
$$= 155.6 \text{ tons of coal / hr}$$

Allowable standards:

PM allowable = 0.3 lb / MMBtu based on 567 IAC 23.3(2)"b"

SO₂ allowable = 5.0 lb / MMBtu based on 567 IAC 23.3(3)"a"(2)

NO_x allowable = 0.5 lb / MMBtu based on 40 CFR 76.5(a)(2)

The rest of the emissions are based on an AP-42 factor and the maximum rated capacity assuming 8760 hours of operating per year.

$$PM \text{ allowable} = (3081 \text{ MMBtu/hr}) \times (0.3 \text{ lb/MMBtu}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb})$$
$$= 4048.43 \text{ ton/yr}$$

$$SO_2 \text{ allowable} = (3081 \text{ MMBtu/hr}) \times (5.0 \text{ lb/MMBtu}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb})$$
$$= 67,473.90 \text{ ton/yr}$$

$$NO \text{ allowable} = (3081 \text{ MMBtu/hr}) \times (0.5 \text{ lb/MMBtu}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb})$$
$$= 6747.39 \text{ ton/yr}$$

$$VOC \text{ potential} = (155.6 \text{ ton/hr}) \times (0.07 \text{ lb/ton}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb})$$
$$= 47.71 \text{ ton/yr}$$

$$CO \text{ potential} = (155.6 \text{ MMBtu/hr}) \times (0.6 \text{ lb/ton}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb})$$
$$= 408.92 \text{ ton/yr}$$

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 4.0 EMISSION UNIT - ACTUAL OPERATIONS AND EMISSIONS

This form is **required** for all Title V facilities.

Duplicate this as needed. A separate Form 4.0 must be completed for each emission unit at your facility.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form 4.0 - page ___ of ___**: A **separate Form 4.0** must be completed for each emission unit at your plant. An emission unit is the process that produces the air pollution emissions, e.g. boiler, paint booth, etc. Since many companies will need to use multiple Forms 4.0, this box identifies each page of the total number of Forms 4.0 that have been included.
- 4) **Emission Point Number**: Enter the emission point number that your company assigns to this stack or vent. You may use any numbering scheme that is appropriate to your plant, but this numbering scheme must be used consistently throughout the application to identify each emission point. Each fugitive emissions source, such as uncontrolled rock crushers, dump pits, etc. should be assigned a separate emission point number.
- 5) **Emission Point Description**: Provide a written description of the stack or vent or indicate if this is a fugitive emissions source.
- 6) **EMISSION YEAR**: Enter the calendar year for which you are calculating ACTUAL emissions from this emission unit. Usually this will be the previous year.
- 7) **EMISSION UNIT NUMBER**: Enter the identification number that your company assigns to this emission unit. Keep in mind that an emission unit is the specific process that generates the air pollution emissions, e.g. boiler, paint booth.
- 8) **SCC Number**: Enter the Source Classification Code Number (SCC) that identifies the type of process or activity occurring at this emission unit. The SCC number corresponds to the Description of Process (Box 9). For a list of valid point-source SCC numbers, please refer to the Source Classification Code (SCC) List at <http://www.iowadnr.gov/InsideDNR/RegulatoryAir/EmissionsInventory/EmissionsEstimateTools.aspx>.
- 9) **DESCRIPTION OF PROCESS**: Provide a written description of the process as defined by the SCC number entered in box 8 above. If a SCC number and corresponding description is not available for this specific process, please provide your best description of the process.

Actual Throughput

- 10) **Raw Material**: Identify the raw material utilized in this emission unit. For combustion sources the raw material is the fuel combusted. If a process unit is also a combustion source (i.e., process dryer), **separate Forms 4.0** must be completed for the fuel used and the raw material processed.
- 11) **Actual Throughput - Yearly Total**: Enter the actual amount of the raw material (identified in box 10) that the emission unit processed during the emission year specified in box 6.

- 12) **Units Raw Material:** Enter the units (tons, gallons, bushels, million cubic feet, etc.) of the raw material total specified in box 11.

Actual Operating Rate/Schedule

- 13) **Percent of Total Operating Time:** For each of the four calendar quarters, specify the percentage of the total annual throughput attributable to each quarter. Estimates are acceptable. The total for all four quarters must equal 100%.
- 14) **Hours/Day:** This figure is the normal number of hours per day that the equipment or process (Emission Unit) was in operation. Since some processes are operated on a different daily schedule over the course of the year, enter the hours per day the emission unit operated during each of the four calendar quarters.
- 15) **Days/Week:** This figure is the normal number of days per week that the equipment or process (Emission Unit) was in operation. Since some processes are operated on a different weekly schedule over the course of the year, enter the days per week that the emission unit operated during each of the calendar quarters.
- 16) **Weeks / 13 Week Quarter:** For each calendar quarter, enter the number of weeks that the emission unit operated. There are 13 possible weeks of operation in each calendar quarter.

Associated Equipment

- 17) **Control Equipment (CE) Number:** Enter the air pollution emissions control equipment identification number(s) that is/are associated with this emission unit. This identification number must correspond to the number used in the Schematic - Process Flow Diagram (Form 1.2).
- 18) **Monitoring Equipment (ME) Number:** Enter the air pollution emissions monitoring equipment or operational parameter monitoring equipment identification number(s) that is/are associated with this emission unit. This identification number must correspond to the number used in the Schematic - Process Flow Diagram (Form 1.2).

Actual Emissions

- 19) **Air Pollutant:** Enter on page 1 of Form 4.0 the required information related to actual emissions for PM_{2.5}, PM₁₀, Total PM, SO₂, NO_x, VOC, CO, Lead, Ozone, and Ammonia. Primary (sum of filterable and condensable) PM_{2.5}, PM₁₀, and PM emissions should be reported on Forms 4.0 and 5.0. DNR recognizes that some emission units may be subject to filterable PM emission limits from federal regulations. The compliance demonstration method will remain the same in these instances. However, for emissions inventory purposes, DNR is required to report primary PM_{2.5} and PM₁₀ emissions to meet the National Emissions Inventory requirements. Actual emission information for Hazardous Air Pollutants and additional regulated air pollutants (ex. fluorides, etc.) should be entered on page 2 of Form 4.0. Please indicate the identity of the pollutant by entering the CAS number and name of the pollutant. Duplicate this form if necessary. If there are no HAPs or additional regulated pollutants emitted from this unit, you are not required to submit page 2 of this form. Please note that you do not need to report actual greenhouse gas (GHG) emissions to DNR and you should not include GHG emissions on Form 4.0.

- 20) Emission Factor:** Enter the numerical emission factor (in pounds per unit) being used to calculate the actual emissions from this unit. Emission estimations should be based on, in the order of decreasing accuracy: continuous emission monitoring data, DNR-approved and site-specific stack test data, mass balance, or EPA approved emission factors. If none of these methods are available, an emission factor from a similar source with similar control equipment can be substituted, considering the characteristics of the material being processed or handled are similar. As noted at the bottom of the form, the most recent emission factors can be obtained for some processes from EPA documents or calculated from the most recent and approved stack test data, worksheets, or continuous emission monitoring data. See the instructions for Form CA-01 (page 16) for additional discussion of supporting documents and the use of stack test results.
- 21) Emission Factor Units:** Enter the emission factor units that correspond to the numerical emission factor utilized in box 20. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton, pounds/gallon, pounds/million cubic feet, etc.
- 22) Source of Emission Factor:** Indicate the source of the emission factor used in box 20. See the bottom of Form 4.0 for typical sources of emission factors.
- 23) Ash or Sulfur %:** For combustion sources only, enter the percent ash in the fuel in the PM_{2.5}, PM₁₀, and PM (total particulate matter) rows. Enter the percent sulfur in the fuel in the SO₂ row.
- 24) Combined Control Efficiency %:** The combined control efficiency is the product of the control efficiency multiplied by the capture efficiency. See the instructions for Form CE-01 for additional information on calculating the combined control efficiency. If only one emission control device is used, enter the percent control efficiency. Be sure to enter the control efficiency in the box corresponding to the air pollutant for which that efficiency is appropriate. For example, a device may be 90% efficient in removing PM from the air stream but significantly less efficient in removing PM-10.

If two control device applies to the same pollutant at an emission point, the control efficiency is calculated using the following formula:

$$\text{Control Efficiency} = CE_1 + CE_2 - [(CE_1 \times CE_2) / 100]$$

where CE₁ = Control Efficiency for First Device
CE₂ = Control Efficiency for Second Device

When two devices are used to remove the pollutant PM₁₀ from the same emission point, the control efficiencies must be combined. For example, if the first device has a control efficiency of 50% and the second device has an efficiency of 80%, the calculation of combined efficiency is as follows:

$$\begin{aligned} \text{Control Efficiency} &= 50 + 80 - [(50 \times 80) / 100] \\ &= 130 - [4000 / 100] \\ &= 130 - [40] \\ &= 90\% \end{aligned}$$

Thus, the control efficiency for PM₁₀ at this emission point would be 90%. This formula only works for combining two control efficiencies. For combining more than two control efficiencies use the following formula:

$$\text{Control Efficiency} = 1 - (1 - \text{CE}_1) \times (1 - \text{CE}_2) \times \dots \times (1 - \text{CE}_n)$$

Where $\text{CE}_1, \text{CE}_2, \dots, \text{CE}_n$, and Control Efficiency are the control efficiencies in decimal and n is the total number of control equipment.

Note that the control efficiency of a secondary piece of emission control equipment is dependent upon particle size, grain loading to the device, air flows, etc. Therefore, caution should be used in assigning the control efficiency to the second control device. It may be considerably less efficient as a secondary control device than it would be as the primary emission control device.

25) Actual Emissions (Tons/Yr): This is the amount in tons per year of the pollutant emitted at the emission unit described. All figures should be rounded to two decimal places. There are two possible formulas.

Method 1: If the Sulfur or Ash percent is not given or the unit is not a combustion source, use the following formula:

$$\text{Actual Emissions} = \text{Actual Throughput (Box 11)} \times \text{Emission Factor} \times [(100 - \text{Percent Control Efficiency}) / 100] / 2000.$$

For example, assume the Actual Throughput is 30,000 tons of grain processed, the PM_{10} emission factor is .91 pounds of PM_{10} emitted per ton of grain processed and a PM_{10} control device for this emission point has an efficiency of 90%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 30,000 \times .91 \times [(100 - 90) / 100] / 2000 \\ &= 27,300 \times [10 / 100] / 2000 \\ &= 27,300 \times [.1] / 2000 \\ &= 2,730 / 2000 \\ &= 1.365 \text{ tons of PM-10 emitted per year} \end{aligned}$$

Note: If no control devices are used, the Control Efficiency is 0%. You would enter 13.65 in the PM_{10} box in Box 25.

Method 2: If the Sulfur or Ash percent is greater than 0, the following formula must be used:

$$\text{Actual Emissions} = \text{Actual Throughput} \times \text{Emission Factor} \times \% \text{ Ash or Sulfur from fuel analysis} \times [(100 - \text{Percent Control Efficiency}) / 100] / 2000.$$

For example, assume the Actual Throughput is 10,000 tons of fuel burned, the SO_2 emission factor is 30 pounds of SO_2 emitted per percent of sulfur in the fuel burned, the Sulfur content of the fuel is 1.7% and the SO_2 control device has an efficiency of 50%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 10,000 \times 30 \times 1.7 \times [(100 - 50) / 100] / 2000 \\ &= 300,000 \times 1.7 \times [50 / 100] / 2000 \\ &= 300,000 \times 1.7 \times [.5] / 2000 \\ &= 510,000 \times [.5] / 2000 \\ &= 255,000 / 2000 \\ &= 127.50 \text{ tons of SO}_2 \text{ emitted per year} \end{aligned}$$

You would enter 127.50 tons in the SO_2 box in Box 25, Actual Emissions on Form 4.0.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM CE-01 POLLUTION CONTROL EQUIPMENT DATA SHEET

This form is **REQUIRED** to be completed for **each** piece of air pollution emissions control equipment at Title V facilities. Duplicate this form as needed.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form CE-01 page of**: Since multiple forms CE-01 may need to be submitted, this box identifies each page of the total number of Forms CE-01 included. As an example, page 2 of 14.
- 4) **CONTROL EQUIPMENT NUMBER**: Enter the control equipment number for this pollution control device as specified on your Schematic - Process Flow Diagram (Form 1.2).
- 5) **Type of Pollution Control Equipment**: Describe the type of pollution control equipment being represented on this form. For example, pulse jet baghouse, venturi scrubber, etc.
- 6) **Manufacturer**: List the name of the manufacturer of this piece of pollution control equipment.
- 7) **Model**: List the model of this piece of pollution control equipment.
- 8) **Serial Number**: Enter the Serial Number of this piece of pollution control equipment.
- 9) **Date Installed**: Enter the date of installation at your facility of this piece of pollution control equipment.
- 10) **Does This Equipment Exhaust to the Atmosphere?** Mark the box that is appropriate. Examples of sources that do not vent to the atmosphere are those that vent back into the work place, or to other processes or control devices.

Associated Equipment

- 11) **Associated Emission Units**: Enter the associated emission unit number(s) for this pollution control device as specified on your Schematic - Process Flow Diagram (Form 1.2).

Emissions Data

- 12) **Equipment Control Efficiency Basis**: Check the box that describes the basis upon which you determined this device's emission control efficiency.

Stack tests may be used to quantify emissions in your application.

Previously performed stack tests

For stack tests please include the test date and the test method used. If stack test data is used a copy of the REPORT SUMMARY including required protocol forms must be attached. **Do not submit the entire stack test report.**

- 13) Pollutant Controlled:** Specify the different air pollutants being controlled by this piece of pollution control equipment.
- 14) Capture Efficiency:** Enter the percent emission capture efficiency of this control device. For example, although a baghouse may be 99% efficient in controlling particulate emissions, the pickup hood at the process may be only partially successful in capturing all of the air contaminants emitted by the process. Estimates of capture efficiency are acceptable if actual capture efficiency is unknown. Be aware that capture efficiencies may be different for different pollutants, i.e. PM-10 vs. PM. If a hood is not used and the system is a closed system, the capture efficiency can be assumed to be 100%.
- 15) Control Equipment Efficiency %:** Pollution control efficiencies may be obtained from the manufacturer's design control efficiency. Other sources of pollution control equipment efficiency are the AP-42 control factors, or by calculating the efficiency from the tested inlet and outlet concentrations. If two or more control equipment are used to remove the same pollutant, refer to the instructions for Form 4.0 (Box #24) above to calculate the efficiency of the multiple control device system.
- 16) Combined Control Efficiency %:** The Combined Control Efficiency is the product of Capture Efficiency and Control Equipment Efficiency. The resulted combined control efficiency, with consideration given to capture efficiency, should be used in calculating the potential (Form 3.0, Box #26) and the actual (Form 4.0, Box #24) emissions.

For example, if the capture efficiency is 75% and control equipment efficiency is 90%, the combined control efficiency would be $0.75 \times 0.90 = 0.675$ or 67.5%.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM ME-01 CONTINUOUS MONITORING SYSTEMS

This form is not required unless your company has continuous emission monitors operating at this facility or unless operational parameter monitoring is being utilized for compliance demonstration purposes.

Continuous Monitoring Systems (CMS) can be used to demonstrate compliance with some permit emission limits and requirements. If you intend to demonstrate compliance with a Continuous Monitoring System(s) for any emission unit or stack/vent, you must complete a copy of this form for each Continuous Monitoring System you have. For example, if you have a Continuous Monitoring System that monitors both NO_x and SO₂, only fill out one of these forms for that monitor.

Duplicate this form as needed.

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0.
- 2) **EIQ Number**: Enter the EIQ number.
- 3) **Form ME-01 page of**: Since multiple forms ME-01 may need to be submitted, this box identifies each page of the total number of forms ME-01 included. As an example, page 2 of 14.

Continuous Monitoring System (CMS) Description

- 4) **Monitoring Equipment Number**: Enter the monitoring equipment number as specified on your Schematic - Process Flow Diagram (form 1.2).
- 5) **Name of Manufacturer**: List the manufacturer of this continuous emissions monitor.
- 6) **Model Name-Model Number-Model Year**: self-explanatory
- 7) **Date of Installation**: Enter the date of installation at your facility of this continuous monitoring system.
- 8) **Type of Monitor**: Check the box or boxes that describe this monitoring system.
- 9) **Measurement Basis**: self-explanatory
- 10) **Pollutant(s) / Parameter(s) Monitored by CMS**: Check all the boxes that apply to this monitor regarding the pollutants or operational parameters monitored by this CMS. Note: TRS stands for Total Reduced Sulfur.

Associated Equipment

- 11) **Emission Point Number**: List the emission point number (as specified on the Schematic - Process Flow Diagram) that is associated with this continuous monitoring system. In other words, identify where the emissions are vented after they are monitored by this CMS.
- 12) **Emission Unit Numbers**: List all emission units (processes) that are monitored by this CMS.

13) MONITOR OPERATIONS

Fill out this question by completing one box for each type of parameter or pollutant you identified in question 10. For example, if the CMS monitors both NO_x and SO₂, you would use two of the following boxes, one for NO_x and one for SO₂.

Questions 14 and 15 are monitor type specific. Answer only if they apply. Question 16 applies to all monitor types.

14) Data Reduction Procedures for OPACITY MONITORS Only: self-explanatory

15) Data Reduction Procedures for GAS MONITORS Only: self-explanatory

16) Primary Data Acquisition System (DAS) Information: self-explanatory

17) Additional Explanations or Comments Regarding This Continuous Monitoring System:
Please attach any additional explanations or comments you may have.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS FORM 5.0 TITLE V ANNUAL EMISSIONS SUMMARY/EMISSIONS FEE

Form Description:

This form is **REQUIRED** for all Title V facilities. It is used to provide an annual summary of the actual emissions from your facility. It is also used to calculate the Title V permit emissions fees due July 1 of each year. Form 5.0 consists of two pages. Page 1 is used to report actual emissions of regulated air pollutants often referred to as criteria pollutants, and for fee calculation. Page 2 is used to report the emissions of HAPs and additional regulated air pollutants not reported on page 1.

Initial Applications:

- Fees are required for the portion of the year that you were subject to the Title V program. For example, if an existing facility becomes subject to the Title V program on November 1, only pollutants emitted during November and December are subject to fees.
- If the initial application is submitted on or after July 1, any fees owed for the preceding year are due when the application is submitted.
- If the initial application is submitted prior to July 1, any fees owed for the preceding year are due by July 1.
- An initial application must include all of the Part 1, Part 2 and Part 3 forms. In subsequent years, the emissions inventories and fee payments need only be accompanied by the forms specified on Form 5.0.

General Instructions:

- Report emission values to the nearest hundredth of a ton. Emission values less than 0.005 tons do not need to be reported.
- If your facility did not emit a pollutant listed on page 1 of this form, enter "0.00".
- Include fugitive emissions, but do not include emissions from insignificant activities (567 IAC 22.103).
- If you discover an error in your calculations, submit the necessary revised forms along with a cover letter explaining the error.
- Send two copies of all forms (three if your facility is located in Linn or Polk county) and checks made payable to:

Iowa Department of Natural Resources
Air Quality Bureau
7900 Hickman Road, Suite 1
Windsor Heights, Iowa 50324

Form Specific Instructions:

- Enter the Facility Name and EIQ Number as it appears on Form 1.0.
- Enter the emission year for which you are reporting.
- Check the appropriate submission type (a) or (b).
- Total Emissions (tons): Enter the total plant-wide emissions of each criteria pollutant and ammonia listed in the table. The totals should come directly from the values you reported on Form 4.0 for each emission unit. The values listed in this column should NOT take into account any emissions fee cap. For example, if your facility emitted more than 4,000 tons of an individual air pollutant, enter the actual amount emitted in this column.
- Emissions Subject to Emissions Fees (tons): Enter the total plant-wide emissions of each criteria pollutant subject to fees. PM_{2.5}, total particulate matter (PM), carbon monoxide (CO), and ammonia (NH₃) emissions are not subject to fees. Please note that PM₁₀ emissions are subject to

fees. Also, you are only required to pay fees on the first 4,000 tons of each air pollutant emitted. Therefore, if your facility emitted more than 4,000 tons of an individual pollutant, enter 4,000 tons in this column for that pollutant.

- **Criteria Pollutant Fee Subtotal (tons):** Add the values reported in the Emissions Subject to Fees column and list the total here. If your facility emitted HAPs and/or additional "regulated air pollutants" as defined in 567 IAC 22.100, report them on page 2. Instructions for completing page 2 are located on the form.
- **Emissions Fee Calculation:** Add the Criteria Pollutant Fee Subtotal and HAP and Additional Regulated Air Pollutant Fee Subtotal from page 2 (if applicable), and enter the sum as the Emissions Subject to Fee TOTAL.
- **Annual Emissions Fee Payment:** Completion of this section of the form is only required when submitting the annual fee payment due by July 1. Enter the Emissions Subject to Fees TOTAL calculated above, as well as the Fee Rate. The Environmental Protection Commission (EPC) sets the Fee Rate each year. Your facility will be notified by mail immediately after the fee rate is set. Multiply the Emissions Subject to Fee TOTAL by the Fee Rate to calculate the Fee Due.

Below is a list of fee rates set previously by the Environmental Protection Commission:

Emission Year	Fee Rate (\$ per ton)	Emission Year	Fee Rate (\$ per ton)
1993	\$24.00	2004	\$31.60
1994	\$12.00	2005	\$32.75
1995	\$22.10	2006	\$35.20
1996	\$22.10	2007	\$39.00
1997	\$21.10	2008	\$52.00
1998	\$23.10	2009	\$56.00
1999	\$24.50	2010	\$56.00
2000	\$25.40	2011	\$56.00
2001	\$29.00	2012	\$56.00
2002	\$30.75	2013	\$56.00
2003	\$32.25	2014	\$56.00

IOWA TITLE V OPERATING PERMIT APPLICATION INSTRUCTIONS PART 2 - REQUIREMENTS AND COMPLIANCE

**REMEMBER THAT YOU MUST SUBMIT A FORM 1.0 (PART 1),
FACILITY INFORMATION, AND A SIGNED PART 3,
APPLICATION CERTIFICATION, WITH ALL PART 2 SUBMISSIONS.**

Part 2 of the application is designed to assist you in identifying what air quality requirements may apply to your facility.

- In Part 2 you will identify each requirement and indicate how each requirement is monitored, reported, or measured.
- After identifying each requirement you will indicate whether the source is in compliance with each requirement, and how you have determined the sources compliance status.
- For sources that are not in compliance, you will be given the opportunity to propose a plan for coming into compliance and a schedule for measuring your progress toward that goal.

Although we have provided an outline of the major air quality requirements that you may be subject to, **you are ultimately responsible for being aware of, and providing information to the DNR on all existing and new regulations, both state and federal, that must be incorporated into your permit.**

Incorporated into Part 2 of the application are references to U.S. Code of Federal Regulations (CFR) and Iowa Administrative Code (IAC) rules and regulations that may apply to your facility

New Clean Air Act Regulations are published in the Federal Register.

Because regulations published in the Federal Register may become effective before being published in the Code of Federal Regulations, we recommend that you utilize the EPA Website at <http://www.epa.gov> and the Federal Register to keep apprised of any new regulations.

Iowa Statutes Regarding Air Quality are published in the Code of Iowa.

New Iowa Rules are published in the Iowa Administrative Bulletin. Regulations are incorporated into the Iowa Administrative Code periodically.

The permit application must be supplemented if, due to construction, modification, or new regulatory requirement, your permit application no longer accurately describes the operation or regulatory requirements of the facility.

After your Title V permit is issued you may need to modify the permit if changes are made at your facility. Please refer to 567 IAC 22.110-113.

The following forms are required to be submitted in order to be considered a complete Part 2 of the Title V application.

- **Part 2 - General Facility Requirements** form
- **Part 2 - Emission Point Information** form to account for each significant emission unit located at the facility.
- **Part 2 - CAM Calculations** form

Additional Part 2 forms such as the **Part 61 NESHAP Information, Boiler and Process Heater Information** and **Engine Information** forms may be required to be submitted as determined by the completion of the above forms.

Part 2 - General Facility Requirements

Answer each of the listed questions for the facility. Refer to the referenced appendices for specific information regarding each question. The General Facility Requirements form may direct the applicant to fill out the following additional Part 2 forms: Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP) Information, Boiler and Process Heater Information and the Engine Information form. Guidance for these forms are contained within the General Facility Information form.

Part 2 - Emission Point Information

This form is to be used to list the applicable requirements for each emission point present at the facility. A separate form shall be created for each emission point located at the facility. If the current Title V permit for the facility grouped similar/identical emission points into a tabular format, the applicant may choose to copy that formatting in this form. Also, if there are new significant emission units or other emission units in the permit that are similar/identical or have similar requirements, these units can also be combined into a tabular format in the Part 2 forms.

The information requested in this form can be found in the DNR issued construction permits, PSD permits (DNR or EPA issued), Iowa Administrative Code, Federal requirements (NSPS, NESHAP, etc.), Title V permit, etc. If this application is associated with a renewal permit application, the applicant should use the current Title V permit to assist with the completion of these forms.

Section I: Emission Point Information

Complete the emission point information for each emission point located at the facility.

- Field 1** – Enter the identification information for the emission point.
- Field 2** – Enter the identification information for the emission unit(s) associated with the emission point.
- Field 3** – Enter the description of the emission unit(s) associated with the emission point.
- Field 4** – Enter the identification information for the piece(s) of control equipment associated with the emission point.
- Field 5** – Enter the description of the piece(s) of control equipment associated with the emission point.
- Field 6** – Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If multiple materials are processed through the emission unit(s), then list all application materials or fuels.
- Field 7** – Enter the maximum hourly production rate for this emission unit. For combustion units this is the maximum heat input capacity (in MMBtu/hr) for the equipment.

Section II: Emission Limits

Use this section to document the applicable emission limit(s) for all applicable pollutant(s) for each emission point present at the facility. These limits can be found under "Emission Limits" in current DNR issued construction permits. If there are no applicable emission limits for an individual emission point, state "N/A" in this section.

1. Copy Fields 8, 9 and 10 in this section for each applicable pollutant for the emission point.
2. Complete one set of Fields (8-10) for each applicable pollutant.
3. Complete each field as defined below:

Field 8:

- a. This is the applicable pollutant expressed for the emission point. The order of pollutants for each emission point shall be as follows;
Opacity
PM_{2.5}
PM₁₀
Particulate Matter (PM)
Sulfur Dioxide (SO₂)
Nitrogen Oxides (NO_x)
Volatile Organic Compounds (VOC)
Carbon Monoxide (CO)
Lead (Pb)
Hazardous Air Pollutants (HAP's) – Including limits for specific HAPs (i.e. Mercury, Formaldehyde, Hexane, etc.)
Other – i.e. Greenhouse Gases, Greenhouse Gas CO₂ equivalent

Field 9:

- a. This field is the applicable emission limit(s) for the pollutant listed in Field 8. The emission limits shall be listed in the following order: lb/hr, tons/yr, concentration (gr/dscf), other (lb/gallon, etc.)

Field 10:

- a. This field is used to state the source of the emission limit(s) listed in Field 9.
- b. Examples of authority for requirement would be Iowa Administrative Code, DNR construction permit, NSPS, NESHAP, etc.
- c. If multiple "Authority for Requirement" exists for the emission limit(s), be sure to cite all of the applicable sources.

Section III: Operational Limits & Reporting/Recordkeeping Requirements

This section is intended to list all applicable operational limits and recordkeeping requirements for each emission point present at the facility.

Field 11:

- a. This field is to list all of the applicable operational limitations placed on the emission point. In recent DNR issued construction permits, these limits are found in " Operating Requirements and Associated Recordkeeping ".
- b. Examples of these limitations would include, but are not limited to:
 - i. Process throughput limitations
 - ii. Hours of operation limitations
 - iii. Control equipment monitoring requirements
 - iv. Raw material limitations

Field 12:

- a. This field is to list all of the applicable reporting and recordkeeping requirements associated with the applicable emission limit(s) or operation limit(s) for the emission point. In recent DNR issued construction permits, these requirements can be found in " Operating Requirements and Associated Recordkeeping ".

Field 13:

- a. In this field, list the source(s) from which the listed requirements in Fields 11 and 12 were derived.

Section IV: NSPS/NESHAP

This section is intended to list each New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) that has been evaluated for applicability for each emission point.

The applicant shall list each relevant NSPS subpart that was evaluated for applicability for the emission point and the applicability of that subpart to the emission point. You may refer to Appendix H: **NSPS Reference List** for a list of current NSPS subparts. In the cases where an emission point is not subject to a NSPS that was evaluated, the applicant may choose to explain why that subpart does not apply.

The applicant shall list each relevant NESHAP subpart that was evaluated for applicability for the emission point and the applicability of that subpart to the emission point. You may refer to Appendix I: **Part 63 NESHAP Reference List** for a list of current NESHAP subparts. In the cases where an emission point is not subject to a NESHAP that was evaluated, the applicant may choose to explain why that subpart does not apply.

Section V: Monitoring Requirements

To complete this section, the applicant shall complete the **CAM Calculations** form (spreadsheet) to determine the level of monitoring required for each emission point at the facility. This **CAM Calculations** form (spreadsheet) shall be submitted with the Part 2 application. Along with this form, the facility shall submit background documentation for how the pre-control emission potential was calculated on a Part 1 CA-01 form or similar calculation sheet for each emission unit. Please refer to Appendix J: **Compliance Assurance Monitoring** for the information that should be contained in these calculation sheets.

1. Compliance Assurance Monitoring (CAM) Plan Required?
 - a. Check Yes or No based on predicted CAM requirements from the **CAM Calculations** form.
 - b. If Yes, list each control equipment identification and applicable pollutant as predicted by the **CAM Calculations** form.
 - c. Submit a CAM plan for each piece of control equipment subject to CAM requirements.
2. Continuous Emissions Monitoring Required?
 - a. Check Yes or No based on required continuous emissions monitor(s) for each emission point
 - b. If Yes, list each monitoring equipment identification and the applicable pollutant(s) and monitoring requirements.

Section VI: Compliance Plan, Schedule & Certification

In this section, the applicant shall state the compliance status of the emission point.

1. Check the appropriate box for each statement.

2. If "No" is checked for either statement, the applicant shall complete a compliance plan for each emission point/unit determined to be out of compliance. The compliance plan shall contain the following information:
 - a. **Term, condition, or applicable requirement** with which your facility is currently out of compliance,
 - b. **Date** non-compliance with the permit requirement began,
 - c. **Description** of the non-compliance,
 - d. **Cause** of non-compliance,
 - e. **Corrective actions** taken to bring your facility back into compliance,
 - f. **Schedule**, with specific dates, for submitting progress reports, and
 - g. **Date** by which your facility will be **back in compliance** with this requirement.

IOWA TITLE V PERMIT APPLICATION INSTRUCTIONS PART 3 - APPLICATION CERTIFICATION

All Title V Permit Applications and/or permit emissions fee submittals must be accompanied with this application certification. Applications or emissions fee payments submitted without appropriate certification signatures will not be considered to be complete.

Complete the Facility Name, EIQ Number, Facility Number, Mailing Address, City and ZIP Code as it appears on Form 1.0.

APPLICATION CONTENTS

Check the boxes indicating which forms are included with this submittal.

CERTIFICATION OF EMISSIONS FEES, APPLICATION FEES AGREEMENT, STATEMENT OF CERTIFICATION OF COMPLIANCE, AND CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

The rules cited on the form and in the Act require that a responsible company official certifies the truth, accuracy and completeness of the application, the emissions fees submitted, and the compliance status of the facility during the reporting year.

By signing the application fees agreement, the responsible company official agrees to application fees based on the current fee schedule and authorized by Senate File 488 (signed by Governor Branstad on May 15, 2015), and rules and a fee schedule adopted by the Environmental Protection Commission (EPC) on December 15, 2015.

The responsible company official should be designated on Form 1.0 and should be the same person signing the certifications and fees agreement. The responsible official must meet the definition in 567 IAC 22.100.

WARNING: Significant enforcement authority is provided in the Clean Air Act Amendments of 1990 for sources or officials (see definition of responsible official in 567 IAC 22.100) who knowingly misrepresent the emissions or conditions at their facility.

APPENDICES TO THE APPLICATION

Appendix A: Hazardous Air Pollutants

Table A-1
Hazardous Air Pollutants - by alpha

CAS Number	Chemical Name	VOC/PM	CAS Number	Chemical Name	VOC/PM
75-07-0	Acetaldehyde	VOC	72-55-9	DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)	VOC ¹
60-35-5	Acetamide	VOC	117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	VOC ¹
75-05-8	Acetonitrile	VOC	334-88-3	Diazomethane	VOC
98-86-2	Acetophenone	VOC	132-64-9	Dibenzofuran	VOC ¹
53-96-3	2-Acetylaminofluorene	VOC ¹	96-12-8	1,2-Dibromo-3-chloropropane	VOC
107-02-8	Acrolein	VOC	84-74-2	Dibutyl phthalate	VOC ¹
79-06-1	Acrylamide	VOC	106-46-7	1,4-Dichlorobenzene	VOC
79-10-7	Acrylic acid	VOC	91-94-1	3,3'-Dichlorobenzidine	VOC ¹
107-13-1	Acrylonitrile	VOC	111-44-4	Dichloroethyl ether (Bis(2-chloroethyl) ether)	VOC
107-05-1	Allyl chloride	VOC	542-75-6	1,3-Dichloropropene	VOC
92-67-1	4-Aminobiphenyl	VOC ¹	62-73-7	Dichlorvos	VOC
62-53-3	Aniline	VOC	111-42-2	Diethanolamine	VOC
90-04-0	o-Anisidine	VOC	64-67-5	Diethyl sulfate	VOC
0	Antimony Compounds	PM	119-90-4	3,3'-Dimethoxybenzidine	VOC ¹
0	Arsenic Compounds	PM ²	60-11-7	4-Dimethylaminoazobenzene	VOC ¹
1332-21-4	Asbestos (friable)	PM	121-69-7	N,N-Dimethylaniline	VOC
71-43-2	Benzene	VOC	119-93-7	3,3'-Dimethylbenzidine	VOC ¹
92-87-5	Benzidine	VOC ¹	79-44-7	Dimethylcarbonyl chloride	VOC
98-07-7	Benzotrichloride	VOC	68-12-2	Dimethylformamide	VOC
100-44-7	Benzyl chloride	VOC	57-14-7	1,1-Dimethylhydrazine	VOC
0	Beryllium Compounds	PM	131-11-3	Dimethyl phthalate	VOC
92-52-4	Biphenyl	VOC	77-78-1	Dimethyl sulfate	VOC
542-88-1	Bis(chloromethyl) ether	VOC	534-52-1	4,6-Dinitro-o-cresol (including salts)	VOC ¹
75-25-2	Bromoform	VOC	51-28-5	2,4-Dinitrophenol	VOC ¹
106-99-0	1,3-Butadiene	VOC	121-14-2	2,4-Dinitrotoluene	VOC
0	Cadmium Compounds	PM	123-91-1	1,4-Dioxane (1,4-Diethylene oxide)	VOC
156-62-7	Calcium cyanamide	PM	122-66-7	1,2-Diphenylhydrazine	VOC
133-06-2	Captan	VOC ¹	106-89-8	Epichlorohydrin (l-Chloro-2,3-epoxypropane)	VOC
63-25-2	Carbaryl	VOC ¹	106-88-7	1,2-Epoxybutane (1,2-Butylene oxide)	VOC
75-15-0	Carbon disulfide	VOC	140-88-5	Ethyl acrylate	VOC
56-23-5	Carbon tetrachloride	VOC	100-41-4	Ethylbenzene	VOC
463-58-1	Carbonyl sulfide	VOC	75-00-3	Ethyl chloride (Chloroethane)	VOC
120-80-9	Catechol	VOC	106-93-4	Ethylene dibromide (Dibromoethane)	VOC
133-90-4	Chloramben	VOC ¹	107-06-2	Ethylene dichloride (1,2-Dichloroethane)	VOC
57-74-9	Chlordane	VOC ¹	107-21-1	Ethylene glycol	VOC
7782-50-5	Chlorine	VOC	151-56-4	Ethyleneimine (Aziridine)	VOC
79-11-8	Chloroacetic acid	VOC	75-21-8	Ethylene oxide	VOC
532-27-4	2-Chloroacetophenone	VOC	96-45-7	Ethylene thiourea	VOC
108-90-7	Chlorobenzene	VOC	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	VOC
510-15-6	Chlorobenzilate	VOC ¹	0	Fine Mineral Fibers	PM
67-66-3	Chloroform	VOC	50-00-0	Formaldehyde	VOC
107-30-2	Chloromethyl methyl ether	VOC	0	Glycol Ethers, except CAS #111-76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol	VOC
126-99-8	Chloroprene (2-chloro-1,3-butadiene)	VOC	76-44-8	Heptachlor	VOC
0	Chromium Compounds	PM	118-74-1	Hexachlorobenzene	VOC
0	Cobalt Compounds	PM	87-68-3	Hexachloro-1,3-butadiene	VOC
0	Coke Oven Emissions	VOC/PM ³	77-47-4	Hexachlorocyclopentadiene	VOC
1319-77-3	Cresol/Cresylic acid (mixed isomers)	VOC	67-72-1	Hexachloroethane	VOC
108-39-4	m-Cresol	VOC	822-06-0	Hexamethylene-1,6-diisocyanate	VOC
95-48-7	o-Cresol	VOC			
106-44-5	p-Cresol	VOC			
98-82-8	Cumene	VOC			
0	Cyanide Compounds	PM ²			
94-75-7	2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters)	VOC ¹			

Iowa Title V Operating Permit Application Instructions
Appendix A: Hazardous Air Pollutants

CAS Number	Chemical Name	VOC/PM
680-31-9	Hexamethylphosphoramide	VOC
110-54-3	Hexane	VOC
302-01-2	Hydrazine	
7647-01-0	Hydrochloric acid (HCl)	
7664-39-3	Hydrogen fluoride (HF)	
123-31-9	Hydroquinone	VOC ¹
78-59-1	Isophorone	VOC
0	Lead Compounds	PM
58-89-9	Lindane (1,2,3,4,5,6-Hexachlorocyclohexane)	VOC ¹
108-31-6	Maleic anhydride	VOC ¹
0	Manganese Compounds	PM
0	Mercury Compounds	PM ²
67-56-1	Methanol	VOC
72-43-5	Methoxychlor	VOC ¹
74-83-9	Methyl bromide (Bromomethane)	VOC
74-87-3	Methyl chloride (Chloromethane)	VOC
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	NR ⁴
60-34-4	Methylhydrazine	VOC
74-88-4	Methyl iodide (Iodomethane)	VOC
108-10-1	Methyl isobutyl ketone (MIBK) (Hexone)	VOC
624-83-9	Methyl isocyanate	VOC
80-62-6	Methyl methacrylate	VOC
1634-04-4	Methyl tert-butyl ether (MTBE)	VOC
101-14-4	4,4'-Methylenebis(2-chloroaniline)	VOC ¹
75-09-2	Methylene chloride (Dichloromethane)	NR ⁴
101-77-9	4,4'-Methylenedianiline	VOC ¹
101-68-8	4,4'-Methylenediphenyl diisocyanate (MDI)	VOC
91-20-3	Naphthalene	VOC
0	Nickel Compounds	PM
98-95-3	Nitrobenzene	VOC
92-93-3	4-Nitrobiphenyl	VOC ¹
100-02-7	4-Nitrophenol	VOC ¹
79-46-9	2-Nitropropane	VOC
62-75-9	N-Nitrosodimethylamine	VOC
684-93-5	N-Nitroso-N-methylurea	VOC
59-89-2	N-Nitrosomorpholine	VOC
56-38-2	Parathion	VOC ¹
82-68-8	Pentachloronitrobenzene (Quintobenzene)	VOC
87-86-5	Pentachlorophenol	VOC ¹
108-95-2	Phenol	VOC
106-50-3	p-Phenylenediamine	VOC ¹
75-44-5	Phosgene	VOC
7803-51-2	Phosphine	
7723-14-0	Phosphorus (yellow or white)	PM ²
85-44-9	Phthalic anhydride	VOC ¹

CAS Number	Chemical Name	VOC/PM
1336-36-3	Polychlorinated biphenyls (PCBs) (Aroclors)	VOC ¹
0	Polycyclic Organic Matter	VOC ¹
1120-71-4	1,3-Propane sultone	VOC
57-57-8	beta-Propiolactone	VOC
123-38-6	Propionaldehyde	VOC
114-26-1	Propoxur (Baygon)	VOC ¹
78-87-5	Propylene dichloride (1,2-Dichloropropane)	VOC
75-56-9	Propylene oxide	VOC
75-55-8	1,2-Propylenimine (2-Methylaziridine)	VOC
91-22-5	Quinoline	VOC
106-51-4	Quinone (p-Benzoquinone)	VOC
0	Radionuclides (including radon)	PM ²
0	Selenium Compounds	PM
100-42-5	Styrene	VOC
96-09-3	Styrene oxide	VOC
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	VOC ¹
79-34-5	1,1,2,2-Tetrachloroethane	VOC
127-18-4	Tetrachloroethylene (Perchloroethylene)	NR ⁴
7550-45-0	Titanium tetrachloride	
108-88-3	Toluene	VOC
95-80-7	2,4-Toluenediamine (2,4-Diaminotoluene)	VOC ¹
584-84-9	2,4-Toluene diisocyanate	VOC
95-53-4	o-Toluidine	VOC
8001-35-2	Toxaphene (chlorinated camphene)	VOC ¹
120-82-1	1,2,4-Trichlorobenzene	VOC
79-00-5	1,1,2-Trichloroethane	VOC
79-01-6	Trichloroethylene	VOC
95-95-4	2,4,5-Trichlorophenol	VOC
88-06-2	2,4,6-Trichlorophenol	VOC
121-44-8	Triethylamine	VOC
1582-09-8	Trifluralin	VOC ¹
540-84-1	2,2,4-Trimethylpentane	VOC
51-79-6	Urethane (Ethyl carbamate)	VOC
108-05-4	Vinyl acetate	VOC
593-60-2	Vinyl bromide (Bromoethene)	VOC
75-01-4	Vinyl chloride (Chloroethene)	VOC
75-35-4	Vinylidene chloride (1,1-dichloroethylene)	VOC
1330-20-7	Xylenes (mixed isomers)	VOC
108-38-3	m-Xylene	VOC
95-47-6	o-Xylene	VOC
106-42-3	p-Xylene	VOC

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC (40 CFR 51.100)

Table A-2
Hazardous Air Pollutants - by CAS Number

CAS Number	Chemical Name	VOC/PM	CAS Number	Chemical Name	VOC/PM
0	Antimony Compounds	PM	75-15-0	Carbon disulfide	VOC
0	Arsenic Compounds	PM ²	75-21-8	Ethylene oxide	VOC
0	Beryllium Compounds	PM	75-25-2	Bromoform	VOC
0	Cadmium Compounds	PM	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	VOC
0	Chromium Compounds	PM	75-35-4	Vinylidene chloride (1,1-dichloroethylene)	VOC
0	Cobalt Compounds	PM	75-44-5	Phosgene	VOC
0	Coke Oven Emissions	VOC/PM ³	75-55-8	1,2-Propylenimine (2-Methylaziridine)	VOC
0	Cyanide Compounds	PM ²	75-56-9	Propylene oxide	VOC
0	Fine Mineral Fibers	PM	76-44-8	Heptachlor	VOC
0	Glycol Ethers, except CAS #111-76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol	VOC	77-47-4	Hexachlorocyclopentadiene	VOC
0	Lead Compounds	PM	77-78-1	Dimethyl sulfate	VOC
0	Manganese Compounds	PM	78-59-1	Isophorone	VOC
0	Mercury Compounds	PM ²	78-87-5	Propylene dichloride (1,2-Dichloropropane)	VOC
0	Nickel Compounds	PM	79-00-5	1,1,2-Trichloroethane	VOC
0	Polycyclic Organic Matter	VOC ¹	79-01-6	Trichloroethylene	VOC
0	Radionuclides (including radon)	PM ²	79-06-1	Acrylamide	VOC
0	Selenium Compounds	PM	79-10-7	Acrylic acid	VOC
50-00-0	Formaldehyde	VOC	79-11-8	Chloroacetic acid	VOC
51-28-5	2,4-Dinitrophenol	VOC ¹	79-34-5	1,1,2,2-Tetrachloroethane	VOC
51-79-6	Urethane (Ethyl carbamate)	VOC	79-44-7	Dimethylcarbamoyle chloride	VOC
53-96-3	2-Acetylaminofluorene	VOC ¹	79-46-9	2-Nitropropane	VOC
56-23-5	Carbon tetrachloride	VOC	80-62-6	Methyl methacrylate	VOC
56-38-2	Parathion	VOC ¹	82-68-8	Pentachloronitrobenzene (Quintobenzene)	VOC
57-14-7	1,1-Dimethylhydrazine	VOC	84-74-2	Dibutyl phthalate	VOC ¹
57-57-8	beta-Propiolactone	VOC	85-44-9	Phthalic anhydride	VOC ¹
57-74-9	Chlordane	VOC ¹	87-68-3	Hexachloro-1,3-butadiene	VOC
58-89-9	Lindane (1,2,3,4,5,6-Hexachlorocyclohexane)	VOC ¹	87-86-5	Pentachlorophenol	VOC ¹
59-89-2	N-Nitrosomorpholine	VOC	88-06-2	2,4,6-Trichlorophenol	VOC
60-11-7	4-Dimethylaminoazobenzene	VOC ¹	90-04-0	o-Anisidine	VOC
60-34-4	Methylhydrazine	VOC	91-20-3	Naphthalene	VOC
60-35-5	Acetamide	VOC	91-22-5	Quinoline	VOC
62-53-3	Aniline	VOC	91-94-1	3,3'-Dichlorobenzidine	VOC ¹
62-73-7	Dichlorvos	VOC	92-52-4	Biphenyl	VOC
62-75-9	N-Nitrosodimethylamine	VOC	92-67-1	4-Aminobiphenyl	VOC ¹
63-25-2	Carbaryl	VOC ¹	92-87-5	Benzidine	VOC ¹
64-67-5	Diethyl sulfate	VOC	92-93-3	4-Nitrobiphenyl	VOC ¹
67-56-1	Methanol	VOC	94-75-7	2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters)	VOC ¹
67-66-3	Chloroform	VOC	95-47-6	o-Xylene	VOC
67-72-1	Hexachloroethane	VOC	95-48-7	o-Cresol	VOC
68-12-2	Dimethylformamide	VOC	95-53-4	o-Toluidine	VOC
71-43-2	Benzene	VOC	95-80-7	2,4-Toluenediamine (2,4-Diaminotoluene)	VOC ¹
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	NR ⁴	95-95-4	2,4,5-Trichlorophenol	VOC
72-43-5	Methoxychlor	VOC ¹	96-09-3	Styrene oxide	VOC
72-55-9	DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)	VOC ¹	96-12-8	1,2-Dibromo-3-chloropropane	VOC
74-83-9	Methyl bromide (Bromomethane)	VOC	96-45-7	Ethylene thiourea	VOC
74-87-3	Methyl chloride (Chloromethane)	VOC	98-07-7	Benzotrichloride	VOC
74-88-4	Methyl iodide (Iodomethane)	VOC	98-82-8	Cumene	VOC
75-00-3	Ethyl chloride (Chloroethane)	VOC	98-86-2	Acetophenone	VOC
75-01-4	Vinyl chloride (Chloroethene)	VOC	98-95-3	Nitrobenzene	VOC
75-05-8	Acetonitrile	VOC	100-02-7	4-Nitrophenol	VOC ¹
75-07-0	Acetaldehyde	VOC	100-41-4	Ethylbenzene	VOC
75-09-2	Methylene chloride (Dichloromethane)	NR ⁴	100-42-5	Styrene	VOC

Iowa Title V Operating Permit Application Instructions
Appendix A: Hazardous Air Pollutants

CAS Number	Chemical Name	VOC/PM
100-44-7	Benzyl chloride	VOC
101-14-4	4,4'-Methylenebis(2-chloroaniline)	VOC ¹
101-68-8	4,4'-Methylenediphenyl diisocyanate (MDI)	VOC
101-77-9	4,4'-Methylenedianiline	VOC ¹
106-42-3	p-Xylene	VOC
106-44-5	p-Cresol	VOC
106-46-7	1,4-Dichlorobenzene	VOC
106-50-3	p-Phenylenediamine	VOC ¹
106-51-4	Quinone (p-Benzoquinone)	VOC
106-88-7	1,2-Epoxybutane (1,2-Butylene oxide)	VOC
106-89-8	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	VOC
106-93-4	Ethylene dibromide (Dibromoethane)	VOC
106-99-0	1,3-Butadiene	VOC
107-02-8	Acrolein	VOC
107-05-1	Allyl chloride	VOC
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	VOC
107-13-1	Acrylonitrile	VOC
107-21-1	Ethylene glycol	VOC
107-30-2	Chloromethyl methyl ether	VOC
108-05-4	Vinyl acetate	VOC
108-10-1	Methyl isobutyl ketone (MIBK) (Hexone)	VOC
108-31-6	Maleic anhydride	VOC ¹
108-38-3	m-Xylene	VOC
108-39-4	m-Cresol	VOC
108-88-3	Toluene	VOC
108-90-7	Chlorobenzene	VOC
108-95-2	Phenol	VOC
110-54-3	Hexane	VOC
111-42-2	Diethanolamine	VOC
111-44-4	Dichloroethyl ether (Bis(2-chloroethyl) ether)	VOC
114-26-1	Propoxur (Baygon)	VOC ¹
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	VOC ¹
118-74-1	Hexachlorobenzene	VOC
119-90-4	3,3'-Dimethoxybenzidine	VOC ¹
119-93-7	3,3'-Dimethylbenzidine	VOC ¹
120-80-9	Catechol	VOC
120-82-1	1,2,4-Trichlorobenzene	VOC
121-14-2	2,4-Dinitrotoluene	VOC
121-44-8	Triethylamine	VOC
121-69-7	N,N-Dimethylaniline	VOC
122-66-7	1,2-Diphenylhydrazine	VOC

CAS Number	Chemical Name	VOC/PM
123-31-9	Hydroquinone	VOC ¹
123-38-6	Propionaldehyde	VOC
123-91-1	1,4-Dioxane (1,4-Diethylene oxide)	VOC
126-99-8	Chloroprene (2-chloro-1,3-butadiene)	VOC
127-18-4	Tetrachloroethylene (Perchloroethylene)	NR ⁴
131-11-3	Dimethyl phthalate	VOC
132-64-9	Dibenzofuran	VOC ¹
133-06-2	Captan	VOC ¹
133-90-4	Chloramben	VOC ¹
140-88-5	Ethyl acrylate	VOC
151-56-4	Ethyleneimine (Aziridine)	VOC
156-62-7	Calcium cyanamide	PM
302-01-2	Hydrazine	
334-88-3	Diazomethane	VOC
463-58-1	Carbonyl sulfide	VOC
510-15-6	Chlorobenzilate	VOC ¹
532-27-4	2-Chloroacetophenone	VOC
534-52-1	4,6-Dinitro-o-cresol (including salts)	VOC ¹
540-84-1	2,2,4-Trimethylpentane	VOC
542-75-6	1,3-Dichloropropene	VOC
542-88-1	Bis(chloromethyl) ether	VOC
584-84-9	2,4-Toluene diisocyanate	VOC
593-60-2	Vinyl bromide (Bromoethene)	VOC
624-83-9	Methyl isocyanate	VOC
680-31-9	Hexamethylphosphoramide	VOC
684-93-5	N-Nitroso-N-methylurea	VOC
822-06-0	Hexamethylene-1,6-diisocyanate	VOC
1120-71-4	1,3-Propane sultone	VOC
1319-77-3	Cresol/Cresylic acid (mixed isomers)	VOC
1330-20-7	Xylenes (mixed isomers)	VOC
1332-21-4	Asbestos (friable)	PM
1336-36-3	Polychlorinated biphenyls (PCBs) (Aroclors)	VOC ¹
1582-09-8	Trifluralin	VOC ¹
1634-04-4	Methyl tert-butyl ether (MTBE)	VOC
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	VOC ¹
7550-45-0	Titanium tetrachloride	
7647-01-0	Hydrochloric acid (HCl)	
7664-39-3	Hydrogen fluoride (HF)	
7723-14-0	Phosphorus (yellow or white)	PM ²
7782-50-5	Chlorine	
7803-51-2	Phosphine	
8001-35-2	Toxaphene (chlorinated camphene)	VOC ¹

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC (40 CFR 51.100)

Appendix B: Accidental Release Prevention

Table B-1

LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by alpha

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
107-02-8	Acrolein [2-Propenal]	5,000	b
107-13-1	Acrylonitrile [2-Propenenitrile]	20,000	b
814-68-6	Acrylyl chloride [2-Propenoyl chloride]	5,000	b
107-18-6	Allyl alcohol [2-Propen-1-ol]	15,000	b
107-11-9	Allylamine [2-Propen-1-amine]	10,000	b
7664-41-7	Ammonia (anhydrous)	10,000	a, b
7664-41-7	Ammonia (conc 20% or greater)	20,000	a, b
7784-34-1	Arsenous trichloride	15,000	b
7784-42-1	Arsine	1,000	b
10294-34-5	Boron trichloride [Borane, trichloro-]	5,000	b
7637-07-2	Boron trifluoride [Borane, trifluoro-]	5,000	b
353-42-4	Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4-	15,000	b
7726-95-6	Bromine	10,000	a, b
75-15-0	Carbon disulfide	20,000	b
7782-50-5	Chlorine	2,500	a, b
10049-04-4	Chlorine dioxide [Chlorine oxide (ClO ₂)]	1,000	c
67-66-3	Chloroform [Methane, trichloro-]	20,000	b
542-88-1	Chloromethyl ether [Methane, oxybis[chloro-]	1,000	b
107-30-2	Chloromethyl methyl ether [Methane, chloromethoxy-]	5,000	b
4170-30-3	Crotonaldehyde [2-Butenal]	20,000	b
123-73-9	Crotonaldehyde, (E)- [2-Butenal, (E)-]	20,000	b
506-77-4	Cyanogen chloride	10,000	c
108-91-8	Cyclohexylamine [Cyclohexanamine]	15,000	b
19287-45-7	Diborane	2,500	b
75-78-5	Dimethyldichlorosilane [Silane, dichlorodimethyl-]	5,000	b
57-14-7	1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]	15,000	b
106-89-8	Epichlorohydrin [Oxirane, (chloromethyl)-]	20,000	b
75-21-8	Ethylene oxide [Oxirane]	10,000	a, b
107-15-3	Ethylenediamine [1,2-Ethanediamine]	20,000	b
151-56-4	Ethyleneimine [Aziridine]	10,000	b
7782-41-4	Fluorine	1,000	b
50-00-0	Formaldehyde (solution)	15,000	b
110-00-9	Furan	5,000	b
302-01-2	Hydrazine	15,000	b
7647-01-0	Hydrochloric acid (conc 37% or greater)	15,000	d
74-90-8	Hydrocyanic acid	2,500	a, b
7647-01-0	Hydrogen chloride (anhydrous) [Hydrochloric acid]	5,000	a
7664-39-3	Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid]	1,000	a, b
7783-07-5	Hydrogen selenide	500	b
7783-06-4	Hydrogen sulfide	10,000	a, b
13463-40-6	Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-]	2,500	b
78-82-0	Isobutyronitrile [Propanenitrile, 2-methyl-]	20,000	b

Iowa Title V Operating Permit Application Instructions
Appendix B: Accidental Release Prevention

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
108-23-6	Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]	15,000	b
126-98-7	Methacrylonitrile [2-Propenenitrile, 2-methyl-]	10,000	b
74-87-3	Methyl chloride [Methane, chloro-]	10,000	a
79-22-1	Methyl chloroformate [Carbonochloridic acid, methylester]	5,000	b
60-34-4	Methyl hydrazine [Hydrazine, methyl-]	15,000	b
624-83-9	Methyl isocyanate [Methane, isocyanato-]	10,000	a, b
74-93-1	Methyl mercaptan [Methanethiol]	10,000	b
556-64-9	Methyl thiocyanate [Thiocyanic acid, methyl ester]	20,000	b
75-79-6	Methyltrichlorosilane [Silane, trichloromethyl-]	5,000	b
13463-39-3	Nickel carbonyl	1,000	b
7697-37-2	Nitric acid (conc 80% or greater)	15,000	b
10102-43-9	Nitric oxide [Nitrogen oxide (NO)]	10,000	b
8014-95-7	Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹	10,000	e
79-21-0	Peracetic acid [Ethaneperoxoic acid]	10,000	b
594-42-3	Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]	10,000	b
75-44-5	Phosgene [Carbonic dichloride]	500	a, b
7803-51-2	Phosphine	5,000	b
10025-87-3	Phosphorus oxychloride [Phosphoryl chloride]	5,000	b
7719-12-2	Phosphorus trichloride	15,000	b
110-89-4	Piperidine	15,000	b
107-12-0	Propionitrile [Propanenitrile]	10,000	b
109-61-5	Propyl chloroformate [Carbonochloridic acid, propylester]	15,000	b
75-56-9	Propylene oxide [Oxirane, methyl-]	10,000	b
75-55-8	Propyleneimine [Aziridine, 2-methyl-]	10,000	b
7446-09-5	Sulfur dioxide (anhydrous)	5,000	a, b
7783-60-0	Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-]	2,500	b
7446-11-9	Sulfur trioxide	10,000	a, b
75-74-1	Tetramethyllead [Plumbane, tetramethyl-]	10,000	b
509-14-8	Tetranitromethane [Methane, tetranitro-]	10,000	b
7550-45-0	Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-]	2,500	B
584-84-9	Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] ¹	10,000	a
91-08-7	Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹	10,000	a
26471-62-5	Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-1] ¹	10,000	a
75-77-4	Trimethylchlorosilane [Silane, chlorotrimethyl-]	10,000	b
108-05-4	Vinyl acetate monomer [Acetic acid ethenyl ester]	15,000	b

1 The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater.
- c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

Table B-2

LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
50-00-0	Formaldehyde (solution)	15,000	b
57-14-7	1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]	15,000	b
60-34-4	Methyl hydrazine [Hydrazine, methyl-]	15,000	b
67-66-3	Chloroform [Methane, trichloro-]	20,000	b
74-87-3	Methyl chloride [Methane, chloro-]	10,000	a
74-90-8	Hydrocyanic acid	2,500	a, b
74-93-1	Methyl mercaptan [Methanethiol]	10,000	b
75-15-0	Carbon disulfide	20,000	b
75-21-8	Ethylene oxide [Oxirane]	10,000	a, b
75-44-5	Phosgene [Carbonic dichloride]	500	a, b
75-55-8	Propyleneimine [Aziridine, 2-methyl-]	10,000	b
75-56-9	Propylene oxide [Oxirane, methyl-]	10,000	b
75-74-1	Tetramethyllead [Plumbane, tetramethyl-]	10,000	b
75-77-4	Trimethylchlorosilane [Silane, chlorotrimethyl-]	10,000	b
75-78-5	Dimethyldichlorosilane [Silane, dichlorodimethyl-]	5,000	b
75-79-6	Methyltrichlorosilane [Silane, trichloromethyl-]	5,000	b
78-82-0	Isobutyronitrile [Propanenitrile, 2-methyl-]	20,000	b
79-21-0	Peracetic acid [Ethaneperoxoic acid]	10,000	b
79-22-1	Methyl chloroformate [Carbonochloridic acid, methylester]	5,000	b
91-08-7	Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹	10,000	a
106-89-8	Epichlorohydrin [Oxirane, (chloromethyl)-]	20,000	b
107-02-8	Acrolein [2-Propenal]	5,000	b
107-11-9	Allylamine [2-Propen-1-amine]	10,000	b
107-12-0	Propionitrile [Propanenitrile]	10,000	b
107-13-1	Acrylonitrile [2-Propenenitrile]	20,000	b
107-15-3	Ethylenediamine [1,2-Ethanediamine]	20,000	b
107-18-6	Allyl alcohol [2-Propen-1-ol]	15,000	b
107-30-2	Chloromethyl methyl ether [Methane, chloromethoxy-]	5,000	b
108-05-4	Vinyl acetate monomer [Acetic acid ethenyl ester]	15,000	b
108-23-6	Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]	15,000	b
108-91-8	Cyclohexylamine [Cyclohexanamine]	15,000	b
109-61-5	Propyl chloroformate [Carbonochloridic acid, propylester]	15,000	b
110-00-9	Furan	5,000	b
110-89-4	Piperidine	15,000	b
123-73-9	Crotonaldehyde, (E)- [2-Butenal, (E)-]	20,000	b
126-98-7	Methacrylonitrile [2-Propenenitrile, 2-methyl-]	10,000	b
151-56-4	Ethyleneimine [Aziridine]	10,000	B
302-01-2	Hydrazine	15,000	b
353-42-4	Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4-	15,000	b
506-77-4	Cyanogen chloride	10,000	c
509-14-8	Tetranitromethane [Methane, tetranitro-]	10,000	b
542-88-1	Chloromethyl ether [Methane, oxybis[chloro-]	1,000	b
556-64-9	Methyl thiocyanate [Thiocyanic acid, methyl ester]	20,000	b
584-84-9	Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] ¹	10,000	a

Iowa Title V Operating Permit Application Instructions
Appendix B: Accidental Release Prevention

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
594-42-3	Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]	10,000	b
624-83-9	Methyl isocyanate [Methane, isocyanato-]	10,000	a, b
814-68-6	Acrylyl chloride [2-Propenoyl chloride]	5,000	b
4170-30-3	Crotonaldehyde [2-Butenal]	20,000	b
7446-09-5	Sulfur dioxide (anhydrous)	5,000	a, b
7446-11-9	Sulfur trioxide	10,000	a, b
7550-45-0	Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-]	2,500	b
7637-07-2	Boron trifluoride [Borane, trifluoro-]	5,000	b
7647-01-0	Hydrochloric acid (conc 37% or greater)	15,000	d
7647-01-0	Hydrogen chloride (anhydrous) [Hydrochloric acid]	5,000	a
7664-39-3	Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid]	1,000	a, b
7664-41-7	Ammonia (anhydrous)	10,000	a, b
7664-41-7	Ammonia (conc 20% or greater)	20,000	a, b
7697-37-2	Nitric acid (conc 80% or greater)	15,000	b
7719-12-2	Phosphorus trichloride	15,000	b
7726-95-6	Bromine	10,000	a, b
7782-41-4	Fluorine	1,000	b
7782-50-5	Chlorine	2,500	a, b
7783-06-4	Hydrogen sulfide	10,000	a, b
7783-07-5	Hydrogen selenide	500	b
7783-60-0	Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-]	2,500	b
7784-34-1	Arsenous trichloride	15,000	b
7784-42-1	Arsine	1,000	b
7803-51-2	Phosphine	5,000	b
8014-95-7	Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹	10,000	e
10025-87-3	Phosphorus oxychloride [Phosphoryl chloride]	5,000	b
10049-04-4	Chlorine dioxide [Chlorine oxide (ClO ₂)]	1,000	c
10102-43-9	Nitric oxide [Nitrogen oxide (NO)]	10,000	b
10294-34-5	Boron trichloride [Borane, trichloro-]	5,000	b
13463-39-3	Nickel carbonyl	1,000	B
13463-40-6	Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-]	2,500	b
19287-45-7	Diborane	2,500	b
26471-62-5	Toluene diisocyanate (unspecified isomer) [Benzene,1,3-diisocyanatomethyl-1] ¹	10,000	a

1 The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater.
- c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

Table B-3

LIST OF REGULATED FLAMMABLE¹ SUBSTANCES AND THRESHOLD QUANTITIES - by alpha

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
75-07-0	Acetaldehyde	10,000	g
74-86-2	Acetylene [Ethyne]	10,000	f
598-73-2	Bromotrifluorethylene [Ethene, bromotrifluoro-]	10,000	f
106-99-0	1,3-Butadiene	10,000	f
106-97-8	Butane	10,000	f
25167-67-3	Butene	10,000	f
106-98-9	1-Butene	10,000	f
107-01-7	2-Butene	10,000	f
590-18-1	2-Butene-cis	10,000	f
624-64-6	2-Butene-trans [2-Butene, (E)]	10,000	f
463-58-1	Carbon oxysulfide [Carbon oxide sulfide (COS)]	10,000	f
7791-21-1	Chlorine monoxide [Chlorine oxide]	10,000	f
590-21-6	1-Chloropropylene [1-Propene, 1-chloro-]	10,000	g
557-98-2	2-Chloropropylene [1-Propene, 2-chloro-]	10,000	g
460-19-5	Cyanogen [Ethanedinitrile]	10,000	f
75-19-4	Cyclopropane	10,000	f
4109-96-0	Dichlorosilane [Silane, dichloro-]	10,000	f
75-37-6	Difluoroethane [Ethane, 1,1-difluoro-]	10,000	f
124-40-3	Dimethylamine [Methanamine, N-methyl-]	10,000	f
463-82-1	2,2-Dimethylpropane [Propane, 2,2-dimethyl-]	10,000	f
74-84-0	Ethane	10,000	f
107-00-6	Ethyl acetylene [1-Butyne]	10,000	f
75-00-3	Ethyl chloride [Ethane, chloro-]	10,000	f
60-29-7	Ethyl ether [Ethane, 1,1'-oxybis-]	10,000	g
75-08-1	Ethyl mercaptan [Ethanethiol]	10,000	g
109-95-5	Ethyl nitrite [Nitrous acid, ethyl ester]	10,000	f
75-04-7	Ethylamine [Ethanamine]	10,000	f
74-85-1	Ethylene [Ethene]	10,000	f
1333-74-0	Hydrogen	10,000	f
75-28-5	Isobutane [Propane, 2-methyl-]	10,000	f
78-78-4	Isopentane [Butane, 2-methyl-]	10,000	g
78-79-5	Isoprene [1,3,-Butadiene, 2-methyl-]	10,000	g
75-29-6	Isopropyl chloride [Propane, 2-chloro-]	10,000	g
75-31-0	Isopropylamine [2-Propanamine]	10,000	g
74-82-8	Methane	10,000	f
74-89-5	Methylamine [Methanamine]	10,000	f
563-46-2	2-Methyl-1-butene	10,000	g
563-45-1	3-Methyl-1-butene	10,000	f
115-10-6	Methyl ether [Methane, oxybis-]	10,000	f
107-31-3	Methyl formate [Formic acid, methyl ester]	10,000	g
115-11-7	2-Methylpropene [1-Propene, 2-methyl-]	10,000	f
504-60-9	1,3-Pentadiene	10,000	f
109-66-0	Pentane	10,000	g
109-67-1	1-Pentene	10,000	g

Iowa Title V Operating Permit Application Instructions
Appendix B: Accidental Release Prevention

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
646-04-8	2-Pentene, (E)-	10,000	g
627-20-3	2-Pentene, (Z)-	10,000	g
463-49-0	Propadiene [1,2-Propadiene]	10,000	f
74-98-6	Propane	10,000	f
115-07-1	Propylene [1-Propene]	10,000	f
74-99-7	Propyne [1-Propyne]	10,000	f
7803-62-5	Silane	10,000	f
116-14-3	Tetrafluoroethylene [Ethene, tetrafluoro-]	10,000	f
75-76-3	Tetramethylsilane [Silane, tetramethyl-]	10,000	g
10025-78-2	Trichlorosilane [Silane, trichloro-]	10,000	g
79-38-9	Trifluorochloroethylene [Ethene, chlorotrifluoro-]	10,000	f
75-50-3	Trimethylamine [Methanamine, N,N-dimethyl-]	10,000	f
689-97-4	Vinyl acetylene [1-Buten-3-yne]	10,000	f
75-01-4	Vinyl chloride [Ethene, chloro-]	10,000	a,f
109-92-2	Vinyl ethyl ether [Ethene, ethoxy-]	10,000	g
75-02-5	Vinyl fluoride [Ethene, fluoro-]	10,000	f
107-25-5	Vinyl methyl ether [Ethene, methoxy-]	10,000	f
75-35-4	Vinylidene chloride [Ethene, 1,1-dichloro-]	10,000	g
75-38-7	Vinylidene fluoride [Ethene, 1,1-difluoro-]	10,000	f

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

- a Mandated for listing by Congress.
- f Flammable gas.
- g Volatile flammable liquid.

Table B-4
LIST OF REGULATED FLAMMABLE¹ SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
60-29-7	Ethyl ether [Ethane, 1,1 ¹ -oxybis-]	10,000	g
74-82-8	Methane	10,000	f
74-84-0	Ethane	10,000	f
74-85-1	Ethylene [Ethene]	10,000	f
74-86-2	Acetylene [Ethyne]	10,000	f
74-89-5	Methylamine [Methanamine]	10,000	f
74-98-6	Propane	10,000	f
74-99-7	Propyne [1-Propyne]	10,000	f
75-00-3	Ethyl chloride [Ethane, chloro-]	10,000	f
75-01-4	Vinyl chloride [Ethene, chloro-]	10,000	a,f
75-02-5	Vinyl fluoride [Ethene, fluoro-]	10,000	f
75-04-7	Ethylamine [Ethanamine]	10,000	f
75-07-0	Acetaldehyde	10,000	g
75-08-1	Ethyl mercaptan [Ethanethiol]	10,000	g
75-19-4	Cyclopropane	10,000	f
75-28-5	Isobutane [Propane, 2-methyl-]	10,000	f
75-29-6	Isopropyl chloride [Propane, 2-chloro-]	10,000	g
75-31-0	Isopropylamine [2-Propanamine]	10,000	g
75-35-4	Vinylidene chloride [Ethene, 1,1-dichloro-]	10,000	g
75-37-6	Difluoroethane [Ethane, 1,1-difluoro-]	10,000	f
75-38-7	Vinylidene fluoride [Ethene, 1,1-difluoro-]	10,000	f
75-50-3	Trimethylamine [Methanamine, N,N-dimethyl-]	10,000	f
75-76-3	Tetramethylsilane [Silane, tetramethyl-]	10,000	g
78-78-4	Isopentane [Butane, 2-methyl-]	10,000	g
78-79-5	Isoprene [1,3,-Butadiene, 2-methyl-]	10,000	g
79-38-9	Trifluorochloroethylene [Ethene, chlorotrifluoro-]	10,000	f
106-97-8	Butane	10,000	f
106-98-9	1-Butene	10,000	f
106-99-0	1,3-Butadiene	10,000	f
107-00-6	Ethyl acetylene [1-Butyne]	10,000	f
107-01-7	2-Butene	10,000	f
107-25-5	Vinyl methyl ether [Ethene, methoxy-]	10,000	f
107-31-3	Methyl formate [Formic acid, methyl ester]	10,000	g
109-66-0	Pentane	10,000	g
109-67-1	1-Pentene	10,000	g
109-92-2	Vinyl ethyl ether [Ethene, ethoxy-]	10,000	g
109-95-5	Ethyl nitrite [Nitrous acid, ethyl ester]	10,000	f
115-07-1	Propylene [1-Propene]	10,000	f
115-10-6	Methyl ether [Methane, oxybis-]	10,000	f
115-11-7	2-Methylpropene [1-Propene, 2-methyl-]	10,000	f
116-14-3	Tetrafluoroethylene [Ethene, tetrafluoro-]	10,000	f
124-40-3	Dimethylamine [Methanamine, N-methyl-]	10,000	f
460-19-5	Cyanogen [Ethanedinitrile]	10,000	f

Iowa Title V Operating Permit Application Instructions
Appendix B: Accidental Release Prevention

CAS No.	Chemical name	Threshold quantity (lbs)	Basis for listing
463-49-0	Propadiene [1,2-Propadiene]	10,000	f
463-58-1	Carbon oxysulfide [Carbon oxide sulfide (COS)]	10,000	f
463-82-1	2,2-Dimethylpropane [Propane, 2,2-dimethyl-]	10,000	f
504-60-9	1,3-Pentadiene	10,000	f
557-98-2	2-Chloropropylene [1-Propene, 2-chloro-]	10,000	g
563-45-1	3-Methyl-1-butene	10,000	f
563-46-2	2-Methyl-1-butene	10,000	g
590-18-1	2-Butene-cis	10,000	f
590-21-6	1-Chloropropylene [1-Propene, 1-chloro-]	10,000	g
598-73-2	Bromotrifluorethylene [Ethene, bromotrifluoro-]	10,000	f
624-64-6	2-Butene-trans [2-Butene, (E)]	10,000	f
627-20-3	2-Pentene, (Z)-	10,000	g
646-04-8	2-Pentene, (E)-	10,000	g
689-97-4	Vinyl acetylene [1-Buten-3-yne]	10,000	f
1333-74-0	Hydrogen	10,000	f
4109-96-0	Dichlorosilane [Silane, dichloro-]	10,000	f
7791-21-1	Chlorine monoxide [Chlorine oxide]	10,000	f
7803-62-5	Silane	10,000	f
10025-78-2	Trichlorosilane [Silane, trichloro-]	10,000	g
25167-67-3	Butene	10,000	f

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

- a Mandated for listing by Congress.
- f Flammable gas.
- g Volatile flammable liquid.

Appendix C: Part 61 NESHAP Reference List

Pollutant	Facility or Emission Unit type	Iowa Rules 567 IAC	40 CFR 61 Subpart
RADON	Underground Uranium Mines; Department of Energy Facilities; Phosphorus Fertilizer Plants: and Facilities processing or disposing of Uranium ore and tailings	Federal Only	B, Q, R, T, W
BERYLLIUM	Beryllium Extraction Plants; Ceramic Plants, Foundries, Incinerators, Propellant Plants, and Machine Shops that process Beryllium containing material; and Rocket Motor Firing Test Sites	23.1(3)"b" and "c"	C, D
MERCURY	Mercury Ore Processing; Manufacturing Processes using Mercury Chlor-alkali Cells; Sludge Incinerators; and Sludge Drying Plants	23.1(3)"d"	E
VINYL CHLORIDE	Ethylene Dichloride Manufacturing via Oxygen, HCl and Ethylene; Vinyl Chloride Manufacturing; and Polyvinyl Chloride Manufacturing	23.1(3)"e"	F
RADIO-NUCLIDES	Department of Energy; Nuclear Regulatory Commission Licensed Facilities; Other Federal Facilities; and Elemental Phosphorus Plants	Federal Only	H, I, K
BENZENE	Fugitive Process, Storage, and Transfer Equipment Leaks; Coke By-Product Recovery Plants; Benzene Storage Vessels; Benzene Transfer Operations; and Benzene Waste Operations	23.1(3)"f" and "k-n"	J, L, Y, BB, FF
ASBESTOS	Asbestos Mills; Roadway Surfacing with Asbestos Tailings; Manufacture of products containing Asbestos; Demolition; Renovation; and Spraying and Disposal of Asbestos Waste	23.1(3)"a"	M
INORGANIC ARSENIC	Glass manufacturer; Primary Copper Smelter; Arsenic Trioxide and Metallic Arsenic Production Facilities	23.1(3)"h", "i" and "j"	P, N, O
VOLATILE HAZARDOUS AIR POLLUTANTS (VHAP)	Pumps, Compressors, Pressure Relief Devices, Connections, Valves, Lines, Flanges, Product Accumulator Vessels, etc. in VHAP Service	23.1(3)"g"	V

Appendix D: Stratospheric Ozone Depleting Chemicals

A. Class I

1. Group I	Chemical	CAS Number
	CFCl ₃ -Trichlorofluoromethane (CFC-11)	
	CF ₂ Cl ₂ -Dichlorodifluoromethane (CFC-12)	75-43-4
	C ₂ F ₃ Cl ₃ -Trichlorotrifluoroethane (CF-113)	76-13-1
	C ₂ F ₄ Cl ₂ -Dichlorotetrafluoroethane (CFC-114)	76-14-2
	C ₂ F ₅ Cl-Monochloropentafluoroethane(CFC-115)	
	All isomers of the above chemicals	
2. Group II:	Chemical	CAS Number
	CF ₂ ClBr-Bromochlorodifluoromethane (Halon-1211)	353-59-3
	CF ₃ Br-Bromotrifluoroethane (Halon - 1301)	598-73-2
	C ₂ F ₄ Br ₂ -Dibromotetrafluoroethane (Halon-2402)	124-73-2
	All isomers of the above chemicals	
3. Group III	Chemical	CAS Number
	CF ₃ Cl-Chlorotrifluoromethane (CFC-13)	75-72-9
	C ₂ FCl ₅ -(CFC-111)	
	C ₂ F ₂ Cl ₄ -(CFC-112)	
	C ₃ FCl ₇ -(CFC-211)	
	C ₃ F ₂ Cl ₆ -(CFC-212)	
	C ₃ F ₃ Cl ₅ -(CFC-213)	
	C ₃ F ₄ Cl ₄ -(CFC-214)	
	C ₃ F ₅ Cl ₃ -(CFC-215)	
	C ₃ F ₆ Cl ₂ -(CFC-216)	
	C ₃ F ₇ Cl-(CFC-217)	
	All isomers of the above chemicals	
4. Group IV:	Chemical	CAS Number
	CCl ₄ -Carbon tetrachloride	56-23-5
5. Group V:	Chemical	CAS Number
	C ₂ H ₃ Cl ₃ -1,1,1 trichloroethane (Methyl chloroform)	71-55-6
	All isomers of the above chemical except 1,1,2 trichloroethane	
6. Group VI.	Chemical	CAS Number
	CH ₃ Br-Bromomethane (Methyl Bromide)	74-83-9
7. Group VII.	Chemical	
	CH ₂ Br ₂	
	CHF ₂ Br (HBFC-22B1)	
	CH ₂ FBr	
	C ₂ HFBr ₄	
	C ₂ HF ₂ Br ₃	
	C ₂ HF ₃ Br ₂	
	C ₂ HF ₄ Br	
	C ₂ H ₂ FBr ₃	

C₂H₂F₂Br₂
C₂H₂F₃Br
C₂H₃FBr₂
C₂H₃F₂Br
C₂H₄FBr
C₃HFBr₆
C₃HF₂Br₅
C₃HF₃Br₄
C₃HF₄Br₃
C₃HF₅Br₂
C₃HF₆Br
C₃H₂FBr₅
C₃H₂F₃Br₄
C₃H₂F₃Br₃
C₃H₂F₄Br₂
C₃H₂F₅Br
C₃H₃FBr₄
C₃H₃F₂Br₃
C₃H₃F₃Br₂
C₃H₃F₄Br
C₃H₄FBr₃
C₃H₄F₂Br₂
C₃H₄F₃Br
C₃H₅FBr₂
C₃H₅F₂Br
C₃H₆FBr

8. Group VIII. Chemical
CH₂BrCl (Chlorobromomethane)

B. Class II

Chemical	CAS Number
CHCl ₂ -Dichlorofluoromethane (HCFC-21)	75-43-4
CHF ₂ Cl-Chlorodifluoromethane (HCFC-22)	75-45-6
C ₂ HFCI-Chlorofluoromethane (HCFC-31)	
C ₂ HFCI ₄ -(HCFC-121)	
C ₂ HF ₂ Cl ₃ -(HCFC-122)	
C ₂ HF ₃ Cl ₂ -2, 2-Dichloro-1, 1, 1-trifluoroethane (HCFC-123)	306-83-2
C ₂ HF ₄ Cl-1-Chloro-1, 1, 1, 2-tetrafluoroethane (HCFC-124)	2873-89-0
C ₂ H ₂ FCI ₃ -(HCFC-131)	
C ₂ H ₂ F ₂ Cl ₂ -(HCFC-132)	
C ₂ H ₂ F ₃ Cl-(HCFC-133)	
C ₂ H ₃ FCI ₂ -1, 1-Dichloro-1-fluoroethane (HCFC-141b)	1717-00-6
C ₂ H ₃ F ₂ Cl-1-Chloro-1, 1-difluoroethane (HCFC-142b)	75-68-3
C ₂ H ₄ FCI-Chlorofluoroethane (HCFC-151)	110587-14-9
C ₃ HFCI ₄ -(HCFC-221)	
C ₃ HF ₂ Cl ₅ -(HCFC-222)	
C ₃ HF ₃ Cl ₄ -(HCFC-223)	
C ₃ HF ₄ Cl ₃ -(HCFC-224)	
C ₃ HF ₅ Cl ₂ -(HCFC-225ca)	
C ₃ HF ₅ Cl ₂ - (HCFC-225cb)	
C ₃ HF ₆ Cl-(HCFC-226)	
C ₃ H ₂ FCI ₅ -(HCFC-231)	
C ₃ H ₂ F ₂ Cl ₄ -(HCFC-232)	
C ₃ H ₂ F ₃ Cl ₃ -(HCFC-233)	
C ₃ H ₂ F ₅ Cl ₂ -(HCFC-234)	
C ₃ H ₂ F ₅ Cl-(HCFC-235)	
C ₃ H ₃ FCI ₄ -(HCFC-241)	
C ₃ H ₃ F ₂ Cl ₃ -(HCFC-242)	
C ₃ H ₃ F ₃ Cl ₂ -(HCFC-243)	
C ₃ H ₃ F ₄ Cl-(HCFC-244)	
C ₃ H ₄ FCI ₃ -(HCFC-251)	
C ₃ H ₄ F ₂ Cl ₂ -(HCFC-252)	
C ₃ H ₄ F ₃ Cl-(HCFC-253)	
C ₃ H ₅ FCI ₂ -(HCFC-261)	
C ₃ H ₅ F ₂ Cl-(HCFC-262)	
C ₃ H ₆ FCI-(HCFC-271)	

All isomers of the above chemicals

Appendix E: Acid Rain and CSAPR

Acid Rain Program Under Title IV

(567 IAC 22.120 - 22.148 *Acid Rain*; 1990 Clean Air Act Sections 401-416)

Utilities and other facilities which combust fossil fuel and generate electricity for wholesale or retail sale may be subject to Acid Rain program requirements, including the requirement to hold an **Acid Rain permit under 40 CFR 72 and 567 IAC 22.122**.

Utilities designated as "Phase I" or "Phase II" sources will need to apply for an Acid Rain permit. Other facilities that may be permitted are certain new units that began commercial operation on or after November 15, 1990, and existing units that increase electric generation from less than 25 megawatts to 25 megawatts or more.

Nationally standardized forms are required for applying for Acid Rain permits or for the Acid Rain portions of the Title V permit application and compliance plans. The compliance plan content requirements (567 IAC 22.105(2)"h" - Standard application form and required information - compliance plan) for Title V operating permit applications apply and must be included in the acid rain portion of the compliance plan of Title IV affected sources (567 IAC 22.105(2)"j").

Certain cogeneration units, qualifying facilities, independent power facilities, and solid waste incinerators may need to apply for a permit. Requirements to apply for an Acid Rain permit are detailed in 567 IAC 22.128. Certain types of units will not be subject to the requirements of the Acid Rain program and are listed in 567 IAC 22.122(2). Other units may be exempted (see 567 IAC 22.123 *Acid Rain Exemptions*). Facilities may petition EPA for an acid rain applicability determination. Petitions must conform to EPA requirements and should be sent by the facility's certifying official to:

Regular or certified mail address:

US EPA
Clean Air Markets Division
1200 Pennsylvania Avenue, NW
Mail Code 6204N
Washington, DC 20460

Overnight mail address:

Package delivery / Street Address:
US EPA
Clean Air Markets Division (6204J)
1310 L St., NW
Washington, DC 20001
Tel: (202) 343-9150

For further information about applying for an applicability determination, call EPA's Acid Rain Hotline @ (202) 343-9620.

Acid Rain permits will be required in addition to Title V operating permits. Applicable requirements from the Acid Rain regulations must be included in the Title V operating permit application.

Following is a list of selected Acid Rain regulations that can be obtained by calling the Acid Rain Hotline at (202) 343-9620:

Acid Rain Program: General provisions and permits, allowance system, continuous emission monitoring, excess emissions, and administrative appeals.

- 40 CFR 72 as amended through March 28, 2011
- 40 CFR 73 and 74 as amended through April 28, 2006
- 40 CFR 78 as amended through August 8, 2011
- 40 CFR 75 as amended through January 18, 2012

40 CFR 76 as amended through October 15, 1999
40 CFR 77 as amended through May 12, 2005

Acid Rain Program: Nitrogen oxides emission reduction program.
40 CFR 76 as amended through October 15, 1999

Acid Rain Program: Permits and allowance system (opt-in).
40 CFR 74 as amended through April 28, 2006

Acid Rain Program: Permits and allowance system (substitution & compensating units).
40 CFR 72 as amended through March 28, 2011
40 CFR 73 as amended through April 28, 2006

Cross State Air Pollution Rule (CSAPR, aka Transport Rule)

(567 IAC 22.120 - 22.123 Acid Rain; 1990 Clean Air Act Section 110; 40 CFR Part 97, 40 CFR 52.38)

Utilities and other facilities which combust fossil fuel and generate electricity for sale may be subject to CSAPR program requirements, including the requirement to incorporate CSAPR conditions into the Title V permit under 40 CFR 97 subparts AAAAA, BBBBB, and CCCCC.

Applicability:

Any stationary boiler or combustion turbine is a CSAPR affected unit if it burns fossil fuel, has served, on or after January 1, 2005, a generator of greater than 25 MW nameplate capacity that produces electricity for sale, except:

1. A qualifying cogeneration unit and not selling more than one-third of unit's potential electrical output, or 219,000 MWh, whichever is greater on an annual basis; or
2. A qualifying solid waste incineration unit
 - a. throughout the later of 2005 or the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a solid waste incineration unit throughout each calendar year ending after the later of 2005 or such 12-month period; and
 - b. with an average annual fuel consumption of fossil fuel for the first 3 consecutive calendar years of operation starting no earlier than 2005 of less than 20 percent (on a Btu basis) and an average annual fuel consumption of fossil fuel for any 3 consecutive calendar years thereafter of less than 20 percent (on a Btu basis).

Please read 40 CFR 97 subparts AAAAA, BBBBB, and CCCCC for complete applicability information, including retired unit exemptions.

CSAPR Conditions

As explained in the preamble of the CSAPR regulations promulgated on August 8, 2011, the requirements established in the CSAPR trading programs are "applicable requirements" that must be included in a source's title V permit pursuant to 40 Code of Federal Regulations (CFR) parts 70.

For sources with existing title V permits, permitting authorities should incorporate CSAPR applicable requirements in accordance with the procedures in the approved operating permit program, as applicable to the specific permit. Such procedures include the permit renewal provisions at 40 CFR § 70.7(c), the reopening for cause provisions at 40 CFR § 70.7(f), and the significant permit modification provisions at 40 CFR § 70.7(e)(4). For sources that become newly subject to title V permitting, the initial permit issued pursuant to 40 CFR § 70.7(a) will need to include the CSAPR applicable requirements.

Appendix F: Prevention of Significant Deterioration (PSD) Information Worksheet

(567 IAC 22.4 Special requirements for major stationary sources located in areas designated attainment or unclassified (PSD) and 567 IAC Chapter 33: Special Regulations and Construction Permit Requirements for Major Stationary Sources – Prevention of Significant Deterioration (PSD) of Air Quality; PSD 40 CFR 52.21)

The State of Iowa has committed to establishing and maintaining National Ambient Air Quality Standards (NAAQS). A plan is set forth (as described in 40 CFR 52 subparts A and Q) for the state to prevent the significant deterioration (PSD) of air quality in any portion of the State where the existing air quality is better than the NAAQS. Included in this plan, and reflected in state rule (567 IAC chapters 20-35), are requirements for air pollution sources to undergo review and obtain permits to construct and modify air pollution sources.

This worksheet will assist you in determining whether your facility may be considered to be a “major stationary source” of air pollution and subject to PSD review as a part of Iowa's air quality permitting process.

Sources which are not considered to be major stationary sources may be subject to air permitting review. The construction and modification of air contaminant sources in Iowa are regulated under Code of Iowa Chapter 455B and 567 Iowa Administrative Code chapters 20 - 35.

If, after completing this worksheet you determine that the facility is a major stationary source or are unsure of whether the facility is subject to PSD - read and become familiar with the requirements of:
40 CFR 52.21 Subpart A (General Provisions) and,
40 CFR 52 Subpart Q (Iowa)
567 Iowa Administrative Code section 22.4 and chapter 33

1) Is the facility defined as one of the following (some SIC codes applying to specific categories are given in parentheses). Please indicate the categories the facility belongs to by checking the boxes next to the category numbers in the table.

SOURCE CATEGORY	SIC	SOURCE CATEGORY	SIC
1 <input type="checkbox"/>	Fossil fuel-fired steam electric plants of more than 250 MMBtu/hr	15 <input type="checkbox"/>	Phosphate rock processing plants (1475)
2 <input type="checkbox"/>	Coal cleaning plants (with thermal dryers)	16 <input type="checkbox"/>	Coke oven batteries (3312)
3 <input type="checkbox"/>	Kraft pulp mills (2611, 2621)	17 <input type="checkbox"/>	Sulfur recovery plants (2819)
4 <input type="checkbox"/>	Portland cement plants (3241)	18 <input type="checkbox"/>	Carbon black plants (furnace process) (2895)
5 <input type="checkbox"/>	Primary zinc smelters (3339)	19 <input type="checkbox"/>	Primary lead smelters (3339)
6 <input type="checkbox"/>	Iron and steel mills (332x)	20 <input type="checkbox"/>	Fuel conversion plants
7 <input type="checkbox"/>	Primary aluminum ore reduction plants (3334)	21 <input type="checkbox"/>	Sintering plants
8 <input type="checkbox"/>	Primary copper smelters (3331)	22 <input type="checkbox"/>	Secondary metal production plants (334x)
9 <input type="checkbox"/>	Municipal incinerators capable of charging more than 250 tons of refuse per day	23 <input type="checkbox"/>	Chemical process plants (*) (28xx)
10 <input type="checkbox"/>	Hydrofluoric acid plants (2819, 2899)	24 <input type="checkbox"/>	Fossil-fuel boilers (or combination thereof) totaling more than 250 MMBtu/hr
11 <input type="checkbox"/>	Sulfuric acid plants (2819)	25 <input type="checkbox"/>	Petroleum storage & transfer units, total storage capacity over 300,000 barrels
12 <input type="checkbox"/>	Nitric acid plants (2873)	26 <input type="checkbox"/>	Taconite ore processing plants (1011)
13 <input type="checkbox"/>	Petroleum refineries (2911)	27 <input type="checkbox"/>	Glass fiber processing plants
14 <input type="checkbox"/>	Lime plants (3274)	28 <input type="checkbox"/>	Charcoal production plants (2819, 2861)

(*) Excluding ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140.

- 2) Facilities not defined by the 28 source categories listed above and located in attainment areas are considered to be a major stationary source if the source has a potential to emit more than 250 tpy of any single regulated pollutant (except GHG for which the thresholds are both 250 tpy on a mass basis and 100,000 tpy on a CO_{2e} basis).
- 3) Review the current PTE of your entire facility for each regulated pollutant (information from Part 1 Form 1.5 Potential Emissions - Significant Activities):
- 4) Is the current PTE of the facility greater than or equal to the 100/250 (100/250 and 100,000 CO_{2e} for GHGs) tpy threshold for your facility, making your facility a major stationary source?
 - NO, my facility IS NOT a major stationary source and therefore is not presently subject to PSD requirements.
 - YES, my facility is currently considered a major stationary source.

Appendix G: Proposed Limits and Alternative Operating Scenarios

Proposed Limits

Proposals for establishing operating limits on emissions (e.g. hours of operation or product throughput) or on the mode of operation of an emission unit(s), and/or control equipment should be submitted with the information outlined below. Due to the complex nature of evaluating and setting alternative limits, additional information may be required upon review.

Any proposals for establishing or modifying limits on emissions or operations may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Proposed limitations may not be used as a basis for establishing the applicability of any requirement until AFTER the department has incorporated the limitation into a permit.

Proposals for emission limitations (e.g. pound per hour (lb/hr) or grains per standard cubic feet (gr/scf) should be done through the construction permits section of the Air Quality Bureau. The construction permits section performs National Ambient Air Quality Standard (NAAQS) evaluations on this type of emission limits. This type of evaluation is beyond the scope of the reviews performed by the Title V operating permits section as mandated by 40 CFR 70.

Because the material submitted for this portion of the application is a proposal it is necessary that, with each appropriate section of the application, information on the unrestricted (or currently permitted) potential operational parameters and emissions be submitted in the other parts of the application.

Alternative Operating Scenarios

Proposals for reasonably anticipated operating scenarios may be included in the permit application. Two primary guidelines provided for alternative operating scenarios follow:

First, any proposals for establishing alternative operating scenarios may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Second, the proposal must also include a statement that the source shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which it is operating.

Because the material submitted for this portion of the application is a proposal it is necessary that, with each affected section of the application, information on all operating scenarios be included. Material provided in the bulk of the application need not be duplicated for this part of the submission, but must be referenced by form and page number in this proposal if it is to be considered for this proposal.

Early Reduction

Facilities that do not already have a federally enforceable Hazardous Air Pollutant (HAP) early reduction commitment in place must follow the guidelines as set forth in 40 CFR 63, Subpart D, as amended through November 21, 1994.

The Clean Air Act Amendments of 1990 Section 112(i)(5) provides that an existing source may obtain a six-year extension to compliance requirements with an emission standard promulgated under Section 112(d) if the source has achieved and demonstrated a reduction of 90 percent (95% for particulate HAPs) or more in emissions of hazardous air pollutants prior to the proposal of an applicable 112(d) standard. Please read 40 CFR 63 subpart D for detailed qualifications for early reductions

To ensure continued achievement of the emission reduction, a federally enforceable emission limitation, reflecting the reduction, can be established for the source in a Title V operating permit.

If the source is proposing an early reduction program, attach the information required in 40 CFR 63, Subpart D.

Required Documentation

For any Proposed Limits and/or Alternative Operations Scenarios, submit a written summary of the proposed limits. Include a table of contents for all materials submitted in support of the proposal.

Appendix H: NSPS Reference List

Standards of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources

Source Categories subject to NSPS	567 IAC 23.1(5)	Effective date of Construction, Modification or Reconstruction	40 CFR 60 Subpart
Municipal solid waste landfills – Emissions Guidelines & Compliance Times	"a"	Before: 05/30/91	Cc
Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times	"c"	On or Before 11/30/99	Part 62 Subpart III
Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times		See rule for details	DDDD
Sewage Sludge Incineration Units - Emission Guidelines and Compliance Times		On or Before 10/14/2010	MMMM
Emission Guidelines for Greenhous Gas Emissions and Compliance Times for Electric Utility Generating Units		On or Before 1/8/2014	UUUU

Source Categories subject to NSPS	567 IAC 23.1(2)	Effective date of Construction, Modification or Reconstruction	40 CFR 60 Subpart
Fossil fuel-fired steam generators >250 MMBtu/hr not covered under 40 CFR 60 subparts Da, or Db (after 06/19/86)	"a"	After: 08/17/71	D
Electric utility steam generators >250 MMBtu/hr Combined cycle gas turbines > 250 MMBtu/hr not covered under 40 CFR 60 subpart KKKK	"z"	After: 09/18/78 (generators) After: 02/28/05 (turbines)	Da
Industrial-commercial-institutional steam generators > 100 MMBtu/hr not covered under 40 CFR 60 subparts Da, Ea, Eb, GG (heat recovery), AAAA, or KKKK (heat recovery)	"ccc"	After: 06/19/84	Db
Industrial-commercial-institutional steam generators ≥10 MMBtu but ≤100 MMBtu/hr not covered under 40 CFR 60 subparts GG (heat recovery), AAAA, or KKKK (heat recovery)	"lll"	After: 06/09/89	Dc
Incinerators > 50 tons/day not covered under 40 CFR 60 subparts Cb, Eb, AAAA, or BBBB	"b"	After: 08/17/71	E
Municipal waste combustors > 250 tons/day not covered by 40 CFR 60 subpart Eb	"nnn"	After: 12/20/89 and on or before 09/20/94	Ea
Large municipal waste combustors > 250 tons/day	"sss"	After: 09/20/94	Eb
Portland cement plants	"c"	After: 08/17/71	F
Nitric acid plants	"d"	After: 08/17/71 and on or before 10/14/11	G
Nitric acid plants		After 10/14/11	Ga
Sulfuric acid plants	"e"	After: 08/17/71	H
Asphalt concrete plants	"f"	After: 6/11/73	I
Petroleum refineries	"g"	After: 6/11/73	J
Petroleum storage vessels with capacity > 40,000 gallons	"bb"	After: 6/11/73 and prior to 5/19/78	K
Petroleum storage vessels with capacity > 40,000 gallons	"cc"	After: 5/18/78 and prior to 7/23/84	Ka
Volatile organic liquid storage vessels (including petroleum liquids)	"ddd"	After: 07/23/84	Kb

Iowa Title V Operating Permit Application Instructions
Appendix H: NSPS Reference List

Source Categories subject to NSPS	567 IAC 23.1(2)	Effective date of Construction, Modification or Reconstruction	40 CFR 60 Subpart
Secondary lead smelters	"h"	After: 06/11/73	L
Secondary brass and bronze production plants	"i"	After: 06/11/73	M
Oxygen process furnaces	"j"	After: 06/11/73	N
Oxygen process steelmaking facilities	"yy"	After: 01/20/83	Na
Sewage treatment plants	"k"	After: 06/11/73	O
Primary copper smelters	"m"	After: 10/16/74	P
Primary zinc smelters	"n"	After: 10/16/74	Q
Primary lead smelters	"o"	After: 10/16/74	R
Primary aluminum reduction plants	"p"	After: 10/23/74	S
Wet process phosphoric acid plants in the phosphate fertilizer industry	"q"	After: 10/22/74	T
Superphosphoric acid plants in the phosphate fertilizer industry	"r"	After: 10/22/74	U
Diammonium phosphate plants in the phosphate fertilizer industry	"s"	After: 10/22/74	V
Triple superphosphate plants in the phosphate fertilizer industry	"t"	After: 10/22/74	W
Granular triple superphosphate storage facilities in the phosphate fertilizer industry	"u"	After: 10/22/74	X
Coal preparation plants > 200 tons/day	"v"	After: 10/24/74	Y
Ferroalloy production facilities	"w"	After: 10/21/74	Z
Steel plants	"l"	After 10/21/74 and on or before 8/17/83	AA
Electric arc furnaces and argon-oxygen decarburization vessels	"ww"	After: 08/17/83	AAa
Kraft pulp mills	"x"	After: 09/24/76	BB
Glass manufacturing plants	"dd"	After: 06/15/79	CC
Grain elevators	"ooo"	After: 08/03/78 and on or before 7/9/14	DD
Grain elevators		After: 7/9/14	DDa
Surface coating metal furniture	"gg"	After: 11/28/80	EE
Stationary gas turbines ≥ 10 MMBtu/hr not covered under 40 CFR 60 subpart KKKK	"aa"	After: 10/03/77	GG
Lime manufacturing plants	"y"	After: 05/03/77	HH
Lead-acid battery manufacturing plants	"hh"	After: 01/14/80	KK
Metallic mineral processing plants	"rr"	After: 08/24/82	LL
Automobile and light-duty truck surface coating operations	"ee"	After: 10/05/79	MM
Phosphate rock plants > 4 tons/hr	"ii"	After: 09/21/79	NN
Ammonium sulfate manufacture	"ff"	After: 02/04/80	PP
Graphic arts industry: publication rotogravure printing	"jj"	After: 08/28/80	QQ

Iowa Title V Operating Permit Application Instructions
Appendix H: NSPS Reference List

Source Categories subject to NSPS	567 IAC 23.1(2)	Effective date of Construction, Modification or Reconstruction	40 CFR 60 Subpart
Pressure sensitive tape and label surface coating operations	"qq"	After: 12/30/80	RR
Industrial surface coating: large appliances	"kk"	After: 12/24/80	SS
Metal coil surface coating	"ll"	After: 01/05/81	TT
Asphalt processing and asphalt roofing manufacture	"mm"	After: 11/18/80	UU
Equipment leaks of VOC in the synthetic organic chemicals manufacturing industry	"nn"	After: 01/05/81 and on or before 11/07/06	VV
Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry		After 11/07/06	VVa
Beverage can surface coating industry	"oo"	After: 11/26/80	WW
Bulk gasoline terminals	"pp"	After: 12/17/80	XX
New residential wood heaters	federal only	After: 07/01/88	AAA
Rubber tire manufacturing industry	"eee"	After: 01/20/83	BBB
VOC emissions from the polymer manufacturing industry	"mmm"	After: 09/30/87 or 01/10/89 (depend on processes, see rule for details)	DDD
Flexible vinyl and urethane coating and printing	"uu"	After: 01/18/83	FFF
Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, or KKK	"tt"	After: 01/04/83 and on or before 11/07/06	GGG
Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, GGG, or KKK		After 11/07/06	GGGa
Synthetic fiber production facilities > 551 tons/year	"ss"	Construction or reconstruction after: 11/23/82	HHH
VOC emissions from synthetic organic chemical manufacturing industry air oxidation unit processes	"jjj"	After: 10/21/83	III
Petroleum dry cleaners (total dryer capacity > 84 pounds)	"vv"	After: 12/14/82	JJJ
Equipment leaks of VOC from on-shore natural gas processing plants not covered under 40 CFR 60 subparts VV or GGG	"zz"	After: 01/20/84 and on or before 8/23/2011	KKK
On shore natural gas processing: SO ₂ emissions	"aaa"	After: 01/20/84 and on or before 8/23/2011	LLL
VOC emissions from synthetic organic chemical manufacturing industry distillation operations	"kkk"	After: 12/30/83	NNN
Nonmetallic mineral processing plants (including sand and gravel processing) not covered under 40 CFR 60 subparts F or I	"bbb"	After: 08/31/83	OOO
Wool fiberglass insulation manufacturing plants	"xx"	After: 02/07/84	PPP
VOC emissions from petroleum refinery wastewater systems	"ggg"	After: 05/04/87	QQQ
VOC emissions from the synthetic organic chemical manufacturing industry (SOCMI) reactor processes not covered under 40 CFR 60 subpart DDD	"qqq"	After: 06/29/90	RRR
Magnetic tape coating facilities	"hhh"	After: 01/22/86	SSS

Iowa Title V Operating Permit Application Instructions
Appendix H: NSPS Reference List

Source Categories subject to NSPS	567 IAC 23.1(2)	Effective date of Construction, Modification or Reconstruction	40 CFR 60 Subpart
Industrial surface coating: Surface coating of plastic parts for business machines	"fff"	After: 01/08/86	TTT
Calciners and dryers in mineral industries not covered under 40 CFR 60 subpart LL	"ppp"	After: 04/23/86	UUU
Polymeric coating of supporting substrates facilities	"iii"	After: 04/30/87	VVV
Municipal solid waste landfills	"rrr"	On or After: 05/30/91 and before 7/17/14	WWW
Municipal solid waste landfills		On or After: 7/17/14	XXX
New small municipal waste combustion units \geq 35 tons/day but \leq 250 tons/day	"uuu"	Construction after 08/30/99, reconstruction or modification after 06/06/01	AAAA
Commercial and industrial solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, O, AAAA, BBBB, MMMM, LLLL, or 40 CFR 63 subpart EEE	"vvv"	Construction after 5/20/11, reconstruction or modification after 9/21/11	CCCC
Other solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, CCCC, DDDD, AAAA, BBBB, or 40 CFR 63 subparts EEE, or LLL	"www"	Construction after 12/09/04, reconstruction or modification after 06/16/06	EEEE
Stationary compression ignition internal combustion engines	"yyy"	After 07/11/05	IIII
Stationary spark ignition internal combustion engines	"zzz"	See Rule	JJJJ
Stationary combustion turbines \geq 10 MMBtu/hr	"aaa"	After 02/18/05	KKKK
New Sewage Sludge Incineration Units		Construction after 10/14/10, modification after 9/21/11	LLLL
Crude Oil and Natural Gas Production, Transmission and Distribution		After 8/23/2011	OOOO
Crude Oil and Natural Gas Facilities		After ???	OOOOa
Standards of Performance for Greenhouse Gas Emissions for Electric Utility Generating Units		After 1/8/2014	TTTT

Appendix I: Part 63 NESHAP Reference List

Table I-1: Categories of Major Sources of Hazardous Air Pollutants Sorted by Industry Group

INDUSTRY GROUP - Source Category ^a	40 CFR 63 Subpart	Final Date	Compliance Date ^b
<u>FUEL COMBUSTION</u>			
Engine Test Cells/Stands (Combined with Rocket Testing Facilities)	PPPPP	5/27/2003	See Rule
Electric Utility Steam Generating Units (Coal- and Oil-fired)	UUUUU	2/15/2011	4/16/2015 (remanded 6/29/15)
Industrial, Commercial & Institutional Boilers and Process Heaters	DDDDD	3/21/2011	3/21/2014
Reciprocating Internal Combustion Engines (RICE)	ZZZZ	6/15/2004	See Rule
Stationary Combustion Turbines	YYYY	3/5/2004	3/5/2007
<u>NON-FERROUS METALS PROCESSING</u>			
Primary Aluminum Reduction Plants	LL	10/07/1997	10/07/1999
Primary Copper Smelting	QQQ	6/12/2002	6/12/2005
Primary Lead Smelting	TTT	6/4/1999	5/4/2001
Primary Magnesium Refining	TTTTT	10/10/2003	10/10/2004
Secondary Aluminum Production	RRR	3/23/2000	3/24/2003
Secondary Lead Smelting	X	6/23/1995	6/23/1997
<u>FERROUS METALS PROCESSING</u>			
Coke Oven Batteries	L	10/27/93	Variable
Coke Ovens: Pushing, Quenching, & Battery Stacks	CCCCC	4/14/2003	4/14/2006
Ferroalloys Production: Ferromanganese & Silicomanganese	XXX	5/20/1999	5/20/2001
Integrated Iron & Steel Manufacturing Facilities	FFFFF	5/20/2003	5/20/2006
Iron & Steel Foundries	EEEEE	4/22/2004	4/22/2007
Steel Pickling: HCL Process Facilities & Hydrochloric Acid Regeneration Plants	CCC	6/22/1999	6/22/2001
<u>MINERAL PRODUCTS PROCESSING</u>			
Asphalt Processing & Asphalt Roofing Manufacturing	LLLLL	4/29/2003	5/1/2006
Brick & Structural Clay Products Manufacturing	JJJJJ	10/26/2015	12/26/2018
Clay Ceramics Manufacturing	KKKKK	5/16/2003	(vacated)
Lime Manufacturing Plants	AAAAA	1/5/2004	1/5/2007
Mineral Wool Production	DDD	6/01/1999	6/01/2002
Portland Cement Manufacturing Industry	LLL	6/14/1999	6/10/2002
Refractory Products Manufacturing (formerly Chromium Refractories)	SSSSS	4/16/2003	4/17/2006
Taconite Iron Ore Processing	RRRRR	10/30/2003	10/30/2006
Wool Fiberglass Manufacturing	NNN	6/14/1999	6/14/2002
<u>PETROLEUM AND NATURAL GAS PRODUCTION AND REFINING</u>			
Natural Gas Transmission & Storage Facilities	HHH	06/17/99	06/17/02
Oil & Natural Gas Production Facilities	HH	06/17/99	06/17/02
Petroleum Refineries: Catalytic Cracking, Catalytic Reforming & Sulfur Recovery Units	UUU	4/11/2002	4/11/2005
Petroleum Refineries (Other Sources Not Distinctly Listed)	CC	08/18/95	08/18/98
<u>LIQUIDS DISTRIBUTION</u>			
Gasoline Distribution (Stage 1)	R	12/14/1994	12/15/1997
Marine Vessel Loading Operations	Y	9/19/1995	9/19/1998
Organic Liquids Distribution (non-gasoline)	EEEE	2/3/2004	2/3/2007
<u>SURFACE COATING PROCESSES</u>			
Aerospace Manufacturing and Rework Facilities	GG	9/1/1995	9/1/1998
Magnetic Tape Manufacturing Operations	EE	12/15/1994	12/15/1996

Iowa Title V Operating Permit Application Instructions
Appendix I: Part 63 NESHAP Reference List

INDUSTRY GROUP - Source Category ^a	40 CFR 63 Subpart	Final Date	Compliance Date ^b
Paper and Other Web Coating	JJJJ	12/4/2002	12/4/2005
Printing, Coating, and Dyeing of Fabrics and Other Textiles	O O O O	5/29/2003	5/29/2006
Printing and Publishing Industry	KK	5/30/1996	5/30/1999
Surface Coating of Automobiles and Light-Duty Trucks	IIII	4/26/2004	4/26/2007
Surface Coating of Large Appliances	NNNN	7/23/2002	7/23/2005
Surface Coating of Metal Cans	KKKK	11/13/2003	11/13/2006
Surface Coating of Metal Coil	SSSS	6/10/2002	6/10/2005
Surface Coating of Metal Furniture	RRRR	5/23/2003	5/23/2006
Surface Coating of Miscellaneous Metal Parts and Products (includes Asphalt/Coal Tar Application-metal pipes)	MMMM	1/2/2004	1/2/2007
Surface Coating of Plastic Parts and Products	PPPP	4/19/2004	4/19/2007
Surface Coating of Wood Building Products (formerly Flat Wood Paneling Products)	QQQQ	5/28/2003	5/28/2006
Shipbuilding & Ship Repair (Surface Coating)	II	12/15/1995	12/16/1996
Wood Furniture Manufacturing Operations	JJ	12/7/1995	11/21/1997
<u>WASTE TREATMENT AND DISPOSAL</u>			
Hazardous Waste Combustors	EEE	9/30/1999	9/30/2003
Municipal Solid Waste Landfills	AAAA	1/16/2003	See rule
Off-Site Waste Recovery Operations	DD	7/1/1996	2/1/2000
Publicly Owned Treatment Works (POTW)	VVV	10/26/1999	10/26/2002
Site Remediation	GGGGG	10/8/2003	10/8/2006
<u>AGRICULTURAL CHEMICALS PRODUCTION</u>			
Pesticide Active Ingredient Production	MMM	6/23/1999	12/23/2003
<ul style="list-style-type: none"> • 4-Chloro-2-Methylphenoxyacetic Acid • 2,4-D Salts & Esters • 4,6-dinitro-o-cresol • Butadiene Furfural Cotrimer (R-11) ^c • Captafol ^c • Captan ^c • Chloroneb • Chlorothalonil ^c • Dacthal (tm) ^c • Sodium Pentachlorophenate • Tordon (tm) Acid ^c 			
<u>FIBERS PRODUCTION PROCESSES</u>			
Cellulose Products Manufacturing	UUUU	6/11/2002	6/11/2005
<ul style="list-style-type: none"> • Cellulose Food Casing • Rayon • Cellulosic Sponge • Cellophane 			
Cellulose Ethers Production			
<ul style="list-style-type: none"> • Caroxymethylcellulose • Methyl cellulose • Cellulose Ethers 			
<u>FOOD AND AGRICULTURE PROCESSES</u>			
Manufacturing of Nutritional Yeast (formerly Bakers Yeast)	CCCC	5/21/2001	5/21/2004
Solvent Extraction for Vegetable Oil Production	GGGG	4/12/2001	4/12/2004
<u>PHARMACEUTICAL PRODUCTION PROCESSES</u>			
Pharmaceuticals Production ^c	GGG	9/21/1998	10/21/2002
<u>POLYMERS AND RESINS PRODUCTION</u>			
Flexible Polyurethane Foam Production	III	10/7/1998	10/08/2001
Polyether Polyols Production	PPP	6/1/1999	6/1/2002
Polymers & Resins I	U	9/5/1996	7/31/1997
<ul style="list-style-type: none"> • Butyl Rubber 			

Iowa Title V Operating Permit Application Instructions
Appendix I: Part 63 NESHAP Reference List

INDUSTRY GROUP - Source Category ^a	40 CFR 63 Subpart	Final Date	Compliance Date ^b
<ul style="list-style-type: none"> • Epichlorohydrin Elastomer • Ethylene Propylene Rubber • Hypalon (tm) ^c • Neoprene • Nitrile Butadiene Rubber • Polybutadiene Rubber ^c • Polysulfide Rubber ^c • Styrene Butadiene Rubber & Latex ^c 	W	3/8/1995	3/3/1998
Polymers & Resins II <ul style="list-style-type: none"> • Epoxy Resin • Non-Nylon Polyamides 	OOO	1/20/2000	1/20/2003
Polymers & Resins III <ul style="list-style-type: none"> • Amino Resins • Phenolic Resins 	JJJ	9/12/1996	7/31/1997
Polymers & Resins IV <ul style="list-style-type: none"> • Acrylonitrile Butadiene Styrene Resin • Methyl Methacrylate Acrylonitrile Butadiene Styrene Resin ^c • Methyl Methacrylate Butadiene Styrene Resin ^c • Polyethylene Terephthalate Resin • Polystyrene Resin • Styrene Acrylonitrile Resin • Nitrile Resin 	J	7/10/2002	7/10/2005
Polyvinyl Chloride and Copolymers Production			
<u>PRODUCTION OF INORGANIC CHEMICALS</u>			
Hydrochloric Acid Production (includes Fumed Silica)	NNNNN	4/17/2003	4/17/2006
Mercury Cell Chlor-Alkali Plants	IIIII	12/19/2003	12/19/2006
Phosphoric Acid/Phosphate Fertilizer	AA/BB	6/10/1999	6/10/2002
<u>PRODUCTION OF INORGANIC & ORGANIC CHEMICALS</u>			
Generic MACT <ul style="list-style-type: none"> • Acetal Resins • Acrylic/Modacrylic Fibers • Hydrogen Fluoride • Polycarbonates Production ^c 	YY	6/29/1999	6/29/2002
Generic MACT + <ul style="list-style-type: none"> • Carbon Black Production • Cyanide Chemicals Manufacturing • Ethylene Production • Spandex Production 	YY	7/12/2002	7/12/2005
<u>PRODUCTION OF ORGANIC CHEMICALS</u>			
Hazardous Organic NESHAP (HON)	F,G,H,I	4/22/1994	5/12/1998
<ul style="list-style-type: none"> • Synthetic Organic Chemical Manufacturing Industry (SOCMI) • SOCMI-Process Vents, Storage Vessels, Transfer Operations, & Wastewater • Equipment Leaks • Certain Processes Subject to the Negotiated Regulation for Equipment Leaks • Tetrahydrobenzaldehyde Manufacture (Formerly known as Butadiene Dimers Production) 	F		(New Sources) 5/14/2001
	G		5/14/2001
	H		5/12/1999
	I		Variable
	F	05/12/1998	05/12/2001
Miscellaneous Organic Chemical Production & Processes (MON)	FFFF	11/10/2003	5/10/2008
<ul style="list-style-type: none"> • Alkyd Resins • Ammonium Sulfate • Benzyltrimethylammonium Chloride • Carbonyl Sulfide • Chelating Agents • Chlorinated Paraffins ^c • Ethylidene Norbornene ^c • Explosives • Hydrazine • Maleic Anhydride Copolymers 			

Iowa Title V Operating Permit Application Instructions
Appendix I: Part 63 NESHAP Reference List

INDUSTRY GROUP - Source Category ^a	40 CFR 63 Subpart	Final Date	Compliance Date ^b
<ul style="list-style-type: none"> • Manufacture of Paints, Coatings, & Adhesives • OBPA/1,3-diisocyanate ^c • Photographic Chemicals • Phthalate Plasticizers • Polyester Resins • Polymerized Vinylidene Chloride • Polymethyl Methacrylate Resins • Polyvinyl Acetate Emulsions • Polyvinyl Alcohol • Polyvinyl Butyral • Quaternary Ammonium Compounds • Rubber Chemicals • Symmetrical Tetrachloropyridine ^c 			
<u>MISCELLANEOUS PROCESSES</u>			
Boat Manufacturing	VVVV	8/22/2001	8/22/2004
Chromium Electroplating	N	1/25/1995	
<ul style="list-style-type: none"> • Decorative Chromium Electroplating 			1/25/1996
<ul style="list-style-type: none"> • Hard Chromium Electroplating 			1/25/1997
<ul style="list-style-type: none"> • Chromic Acid Anodizing 			1/25/1997
Commercial Sterilizers	O	12/6/1994	12/6/1998
Degreasing Organic Cleaners (Halogenated Solvent Cleaning)	T	12/2/1994	12/2/1997
Dry Cleaning (Perchloroethylene)	M	9/22/1993	9/23/1996
<ul style="list-style-type: none"> • Industrial Dry-to-dry Machines • Industrial Transfer Machines • Commercial Transfer Machines 			
Flexible Polyurethane Foam Fabrication	MMMMM	4/14/2003	4/14/2004
Friction Products Manufacturing	QQQQQ	10/18/2002	10/18/2005
Industrial Process Cooling Towers	Q	9/8/1994	3/8/1995
Leather Tanning & Finishing Operations	TTTT	2/27/2002	2/27/2005
Miscellaneous Coating Manufacturing	HHHHH	12/11/2003	12/11/2006
Plywood and Composite Wood Products	DDDD	7/30/2004	10/1/2007
(formerly Plywood and Particle Board Manufacturing)			
Pulp & Paper (chemical) MACT I	S	4/15/1998	4/16/2001
Pulp & Paper (combustion) MACT II	MM	1/12/2001	See Rule
Pulp & Paper (mechanical) MACT III	S	4/15/1998	4/16/2001
Reinforced Plastics Composites Production	WWWWW	4/21/2003	4/21/2006
Rubber Tire Manufacturing	XXXX	7/9/2002	7/11/2005
Semiconductor Production	BBBBB	5/22/2003	5/22/2006
Wet Formed Fiberglass Mat Production	HHHH	4/11/2002	4/11/2005

Notes:

- a Only major sources within any category shall be subject to emission standards under Section 112 unless a finding is made of a threat of adverse effects to human health or the environment for the area sources in a category. All listed categories are exclusive of any specific operations or processes included under other categories that are listed separately.
- b The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<http://www.epa.gov/ttn/atw/mactfnlalp.html>).
- c Equipment handling specific chemicals for these categories or subsets of these categories are subject to a negotiated standard for equipment leaks contained in the HON, which was finalized on April 22, 1994. The specific processes affected within the categories are listed in 40 CFR 63 Subpart I.

Table I-2: Categories of Area Sources of Hazardous Air Pollutants

Source Category ^a	40 CFR 63 Subpart	Final Date ^g	Compliance Date ^b
Acrylic and Modacrylic Fibers Production ^c	LLLLLL	7/16/2007	1/16/2008
<ul style="list-style-type: none"> Aluminum, Copper, and Other Nonferrous Foundries ^c Aluminum Foundries Copper Foundries 	ZZZZZZ	6/25/2009	6/27/2011
Other Nonferrous Foundries			
Asphalt Processing & Asphalt Roofing Manufacturing ^{c, e}	AAAAAAA	12/2/2009	12/2/2010
Brick & Structural Clay		12/16/2010	
Carbon Black Production ^d	MMMMMM	7/16/2007	7/16/2007
Chemical Manufacturing ^f	VVVVVV	10/29/2009	10/29/2012
<ul style="list-style-type: none"> Agricultural Chemicals & Pesticides Manufacturing Cyclic Crude & Intermediate Production Industrial Inorganic Chemical Manufacturing Industrial Organic Chemical Manufacturing Inorganic Pigments Manufacturing Miscellaneous Organic Chemical Manufacturing (MON) Pharmaceutical Production Plastic Materials and Resins Manufacturing Synthetic Rubber Manufacturing 			
Chemical Manufacturing: Chromium Compounds ^d	NNNNNN	7/16/2007	1/16/2008
Chemical Preparations ^{c, e}	BBBBBBB	12/30/09	12/30/2010
Chromium Electroplating and Anodizing Tanks ^c	N	1/25/1995	
<ul style="list-style-type: none"> Chromic Acid Anodizing Hard Chromium Electroplating Decorative Chromium Electroplating 			1/25/1997 1/25/1997 1/25/1996
Clay Ceramics Manufacturing ^c	RRRRRR	12/26/2007	12/26/2007
Commercial Sterilizers ^c	O	12/6/1994	12/6/1998
Dry Cleaning Facilities ^c	M	9/22/1993	9/23/1996
Electric Arc Furnaces Steel Facilities ^d	YYYYYY	12/28/2007	6/30/2008
Electric Utility Steam Generating Units (Coal- and Oil-fired)	UUUUU	3/16/2011	
Ferroalloys Production Facilities ^c	YYYYYY	12/23/2008	6/22/2009
Flexible Polyurethane Foam Production and Fabrication ^c	OOOOOO	7/16/2007	7/16/2008
<ul style="list-style-type: none"> Flexible Polyurethane Foam Production Flexible Polyurethane Foam Fabrication 			
Gasoline Distribution Stage I (Bulk Terminals, Bulk Plants, & Pipeline Facilities) ^c	BBBBBB	1/10/2008	1/10/2011
Gasoline Distribution Stage I (Dispensing Facilities) ^c	CCCCCC	1/10/2008	1/10/2011
Glass Manufacturing ^d	SSSSSS	12/26/2007	12/28/2009
Gold Mine Ore Processing and Production ^{d, e}	EEEEEEE	2/17/2011	2/17/2014
Halogenated Solvent Cleaners ^c	T	12/2/1994	12/2/1997
Hazardous Waste Incineration ^d	EEE	9/30/1999	9/30/2002
Hospital Sterilizers ^c	WWWWW	12/28/2007	12/29/2008
Industrial, Commercial, and Institutional Boilers ^c	JJJJJ	3/21/2011	See rule
Iron and Steel Foundries ^c	ZZZZZ	1/2/2008	See rule
<ul style="list-style-type: none"> Iron Foundries Steel Foundries 			
Lead Acid Battery Manufacturing ^c	PPPPP	7/16/2007	7/16/2008

Iowa Title V Operating Permit Application Instructions
Appendix I: Part 63 NESHAP Reference List

Source Category ^a	40 CFR 63 Subpart	Final Date ^g	Compliance Date ^b
Medical Waste Incinerators	(See 40 CFR 60 Subparts Ce and Ec)		
Metal Fabrication and Finishing ^c	XXXXXX	7/23/2008	7/25/2011
<ul style="list-style-type: none"> • Electrical and Electronic Equipment Finishing Operations • Fabricated Metal Products • Fabricated Plate Work (Boiler Shops) • Fabricated Structural Metal Manufacturing • Heating Equipment, Except Electric • Industrial Machinery and Equipment Finishing Operations • Iron and Steel Forging • Primary Metal Products Manufacturing • Valves and Pipe Fittings 			
Mercury Cell Chlor-Alkali Plants ^d	IIIII	12/19/2003	12/19/2006
Municipal Solid Waste Landfills	AAAA	1/16/2003	See rule
Municipal Waste Combustors	(See 40 CFR 60 Subparts Ea, Eb, and AAAA)		
Oil and Natural Gas Production ^c	HH	1/3/2007	See rule
Other Solid Waste Incineration	(See 40 CFR 60 Subpart EEEE)		
Paint Stripping and Miscellaneous Surface Coating ^c	HHHHHH	1/9/2008	1/10/2011
<ul style="list-style-type: none"> • Motor Vehicle and Mobile Equipment Surface Coating • Paint Stripping • Miscellaneous Surface Coating 			
Paints & Allied Products Manufacturing ^c	CCCCCC	12/3/2009	12/3/2012
Plating & Polishing ^c	WWWWW W	7/1/2008	7/1/2010
Polyvinyl Chloride and Copolymers Production ^{c,e}	DDDDDD	1/23/2007	1/23/2007
Portland Cement Manufacturing ^d	LLL	6/14/1999	6/10/2002
Prepared Feeds Manufacturing ^c	DDDDDDD	1/5/2010	1/5/2012
Primary Copper Smelting ^{d,e}	EEEEEE	1/23/2007	1/23/2007
Primary Nonferrous Metals - Zinc, Cadmium, and Beryllium ^{d,e}	GGGGGG	1/23/2007	1/23/2007
Publicly Owned Treatment Works ^c	VVV	10/26/1999	10/26/2002
Reciprocating Internal Combustion Engines ^c	ZZZZ	1/18/2008	See rule
Secondary Aluminum Production ^c	RRR	3/23/2000	3/24/2003
Secondary Copper Smelting ^{d,e}	FFFFFF	1/23/2007	1/23/2007
Secondary Lead Smelting ^d	X	6/23/1995	6/23/1997
Secondary Nonferrous Metals Processing ^c	TTTTTT	12/26/2007	12/26/2007
Sewage Sludge Incineration	(See 40 CFR 60 Subparts MMMM & LLLL)		
Wood Preserving ^c	QQQQQQ	7/16/2007	7/16/2007
Wool Fiberglass Manufacturing	NN	7/29/2015	7/31/2017

Notes:

- a A finding of threat of adverse effects to human health or the environment was made for each category of area sources listed.
- b The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<http://www.epa.gov/ttn/atw/area/compilation.html>).
- c If you own or operate an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.
- d If you own or operate an area source subject to this subpart, you must obtain a permit under 40 CFR part 70 or 40 CFR part 71.
- e The Department is not adopting this standard because Iowa does not have, and likely will not have, any affected facilities.
- f Any area source that installed a federally-enforceable control device on an affected CPMU is required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 if the control device on the affected CPMU is necessary to maintain the source's emissions at area source levels. For new and existing sources subject to this rule on December 21, 2012 and subject to title V as a result of this rule, a complete title V permit application must be submitted no later than December 21, 2013. New and existing sources that become subject to this rule after December 21, 2012 must submit a complete title V permit application no later than 12 months after becoming subject to this rule if the source is subject

Iowa Title V Operating Permit Application Instructions
Appendix I: Part 63 NESHAP Reference List

to title V as a result of this rule. Otherwise, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

g Tentative dates have been italicized.

Appendix J: Compliance Assurance Monitoring

This form will assist you in identifying emission units that are subject to Compliance Assurance Monitoring (CAM) requirements. CAM was developed by the Environmental Protection Agency and became effective on November 21, 1997. The regulations related to CAM are located in Title 40, Code of Federal Regulations, Part 64 (40 CFR 64), 567 IAC 223.108(3)"d", and the 1990 Clean Air Act, as amended, Section 504. CAM applies to some major sources that are required to obtain a Title V operating permit. Facilities that operate emission control devices subject to federally enforceable regulations may be subject to CAM.

The CAM rule aims to have owners and operators maintain their control equipment at levels that assure compliance. It requires owners and operators to develop CAM plans that select representative parameters upon which compliance can be assured. CAM plans are required as part of the Title V operating permit application. The DNR is responsible for approving the CAM plans and incorporating the appropriate terms and conditions in the Title V permit as specified in 40 CFR 64.6(c) - (e). For sources with approved CAM plans, existing periodic monitoring requirements will be replaced by CAM requirements.

1) Applicability - 40 CFR 64.2

CAM applicability is determined on a **pollutant-by-pollutant basis for each emissions unit**. The CAM Applicability Flowchart at the end of this section will assist you in determining CAM applicability. CAM applies to each pollutant-specific emissions unit (PSEU)² that meets ALL of the following criteria:

- Located at a major source required to obtain a Title V operating permit;
- Subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof) that is not exempt (see list of exemptions in section 2);
- A control device is used to achieve compliance with the emission limitation or standard;
- The potential uncontrolled emissions of the applicable regulated air pollutant are greater than or equal to the major source thresholds (ex. 100 tons per year of particulate matter (PM & PM₁₀), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), carbon monoxide (CO), or lead; 10 tons per year of any hazardous air pollutant (HAP); or 25 tons per year of any combination of HAPs); and
- The PSEU is not an exempt backup utility power emissions unit as defined in the exemptions in section 2.

2) CAM Exemptions - 40 CFR 64.2(b)

A. Emission limitations or standards from the following programs are not required to be considered for CAM applicability. Please note, that this does not mean that the pollutant or emission unit as a whole is exempted from CAM if other emissions standards apply.

- New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) proposed after November 15, 1990
- Stratospheric ozone protection requirements
- Acid Rain program requirements
- Emission limitations or standards that apply solely under an emissions trading program
- An emissions cap that meets the requirements specified in 40 CFR 70.4(b)(12)
- Emission limitations or standards for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.

² Pollutant-specific emissions unit means an emissions unit considered separately with respect to each regulated air pollutant. (40 CFR 64.1)

B. Municipally-owned backup utility power emission units where:

- the unit is exempt from all acid rain program monitoring requirements,
- the unit operates for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations (note: the facility must provide documentation of historical operating data and relevant contractual obligations to show that this criteria is satisfied), and
- actual emissions from the unit are less than 50 percent of the major source thresholds.

3) **Instructions for using the Part 2 - CAM Calculations spreadsheet to determine applicability**

This spreadsheet is protected when downloaded from the website. If the column headings are incomplete when viewing a sheet, click the "Review" tab in the ribbon and select "Unprotect Sheet". This will allow the user to modify the row and column sizes in order to fully view the information with the cells. Be sure not to alter the formulas contained in the sheets or the form will not function properly.

A. Tab 1 - EmissionUnits

1. Complete the requested facility information.
2. Answer the question "Is Your Facility a Major Source?" Do the potential emissions from your facility surpass the Title V major source thresholds? If yes, continue to #3. If no, CAM does not apply to your facility and no further information is needed.
3. Complete one row for each emission unit located at the facility. If the number of rows is insufficient for your facility, use the *Part 2 - CAM Calculations – Large Facility* spreadsheet.
4. In the case of emission unit(s) that is subject to an emission standard for a single HAP, list that HAP name in the Source Description for that unit.

B. Tabs 2-8 – Pollutants

Complete the required information for each pollutant emitted from each emission point. Once the point is reached at which the applicability (CAM Required?) column for a pollutant turns to "No", you may stop completing the calculations for that pollutant.

1. **Controlled Source for XX?** – Is a control device, as defined by 40 CFR 64.1, used to achieve compliance with an emission limitation or standard?
2. **Subject to XX Standards?** – Is the emission unit subject to an emission limit or standard as defined by 40 CFR 64.1?
3. **Post 90 NSPS NESHAP/Exemption?** – Does the emission limit or standard meet the requirements for the exemptions listed in section 2 of this appendix? Please note the exemptions listed in section 2 "A" only apply to the specific emission limit or standard from the applicable program. These exemptions do not universally apply to the emission unit or pollutant. If a unit is subject to multiple emission limits for a pollutant where one of the limits does qualify for a CAM exemption but other limits do not qualify for the exemption, answer "No" in this column.
4. **Pre-Control Emission Potential (Tons/yr)** – Potential emissions of the pollutant prior to passing through the control device. Submit background documentation for how the pre-control emission potential was calculated on a Form CA-01 or similar calculation sheet for each emission unit. Please refer below for the information that should be contained in these calculation sheets.

5. **>=Major?** – Are the pre-control potential emissions greater than major source thresholds? (Yes or No) (Auto Completed)
6. **Post-Control Emission Potential (Tons/yr)** – Potential emissions of the pollutant after passing through the control device. This would be equal to the potential emissions based on the applicable emission limitations or standards. If an emission unit has multiple emission limits for a pollutant, calculate the potential emissions using the most stringent, non-exempted limit.
7. **>=Major** – Are the post-control emission potential emissions greater than major source thresholds (Yes or No)? (Auto Completed)
8. **CAM Required?** – Is CAM required for the pollutant and when the CAM plan is due (Initial, Significant Modification, or Renewal)? (Auto Completed)

4) Example CAM Calculations

There are six basic approaches for calculating the potential pre-controlled emissions from any given emission unit. These methods are (in order of reliability):

1. Stack test measuring emissions prior to passing through the control device (including the 95% confidence interval).
2. Mass balance.
3. EPA approved pre-controlled emission factors.
4. Stack test measuring emissions after passing through the control device (including the 95% confidence interval).
5. Vendor supplied uncontrolled emission factors.
6. Engineering estimates based on best available process operating data.

Potential to emit is calculated assuming equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8,760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment.

Only federally enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions. ‘Bottlenecks’ do not count unless federally enforceable.

Calculation of potential emissions must be done with “worst-case” values for each pollutant.

Emission Calculations

If the source of an emission factor is not a widely available source (such as WebFIRE, AP-42, etc.), a copy of the document must be submitted with the application.

If the source of an emission factor is a stack test, please indicate the test date and the test method used and include a copy of the REPORT SUMMARY. Do not submit the entire stack test report. The most recent and approved stack test should be used.

In case of a PM/PM₁₀/PM_{2.5} test with less than the minimum catch (or detection limit) of 2.54 mg, 1.44 mg, and 1.35 mg, respectively, the emissions calculation should be based on the minimum catch. Please note that a PM/PM₁₀/PM_{2.5} test should be designed to catch a minimum of 3 times the detection limits. Similarly, for the tests of other pollutants, the emissions calculation should be based on the

minimum/detect level if the stack test reports less than the minimum/detect level of the applicable test method. You have the option of testing for long enough to capture the minimum sample weight required by the test method if you wish to.

PM/PM₁₀/PM_{2.5} from a paint booth:

PM, PM₁₀ and PM_{2.5} are considered to be equal from surface coating operations. To calculate PM_{2.5} and PM₁₀ emissions the spray transfer efficiency (TE) of the spray gun must be inserted in the formula used to calculate the VOC and HAP emissions. The transfer efficiency is the percentage of paint from the gun that actually adheres to the part being painted.

$$(\text{Density lb/gal}) \times (\text{Max. annual paint usage gal/hr}) \times (\text{Max.\% solid}) \times (1-\text{TE}) \times (1 \text{ ton}/2000 \text{ lbs}) \times 8760 \text{ hrs/yr}$$

Calculations using stack test data:

When calculating potential emissions using the average results from a stack test, always include the 95% confidence interval in the emission factor used.

Pre-Control Stack Test

$$[(\text{Average Test result lb/hr}) + (95\% \text{ confidence Interval})] \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

When calculating pre-controlled potentials based on a stack test that was completed post control, use the overall control efficiency listed on the Form CE-01.

Post-Control Stack Test

$$[(\text{Average Test result lb/hr}) + (95\% \text{ confidence Interval})] / (1-\text{CE}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs})$$

Mass balance:

When calculating potential emissions using mass balance, if multiple raw materials or fuels are used in the emission unit use the product that yields the highest potential emissions for each applicable pollutant.

Example

	Top Coat	Base Coat
Paint Weight (lbs/gal)	8.75	7.21
% VOC	25	42
% Solids	75	58
% Xylene	8	2
% Toluene	0	15

Calculate the yearly potential VOC emissions

To calculate the maximum amount of VOC emitted from this spray booth in one year, the highest amounts of each constituent from the base or top coat must be used.

In this case the top coat VOC = 0.25 x 8.75 lbs/gal = 2.19 lbs VOC/gal.

The base coat VOC = 0.42 x 7.21 lbs/gal = 3.03 lbs VOC/gal, which is the higher VOC content.

First, multiply the greatest VOC density (base coat 3.03 lbs/gal) by the maximum paint used per hour (7 gallons). To convert it to tons per year divide the answer by 2,000 lbs/ton.

$$(\text{Density lbs/gal}) \times (\text{Max. rated capacity gal/yr}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2,000 \text{ lb}) = 3.03 \text{ lbs/gal} \times 7 \text{ gal/hr} \times 8,760 \text{ hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} = 92.90 \text{ tons/yr}$$

5) CAM Plan Guideline Worksheet

Use the following worksheet when developing your CAM plans in order to be sure that all of the requirements for CAM plans are being met for your facility.

- Identify the emissions unit, applicable emissions limit or standard, and description of the control technology.
- Describe the indicators to be monitored.
 - Indicators of performance may include, but are not limited to, direct (pressure drop, temperature, etc.) or predicted emissions (including visible emissions or opacity), process and control device parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities conducted by the owner or operator.
 - The design of indicator ranges or designated conditions may be:
 - Based on a single maximum or minimum value if appropriate (e.g., maintaining condenser temperatures a certain number of degrees below the condensation temperature of the applicable compound(s) being processed) or at multiple levels that are relevant to distinctly different operating conditions (e.g., high versus low load levels).
 - Expressed as a function of process variables (e.g., an indicator range expressed as minimum to maximum pressure drop across a venturi throat in a particulate control scrubber).
 - Expressed as maintaining the applicable parameter in a particular operational status or designated condition (e.g., position of a damper controlling gas flow to the atmosphere through a by-pass duct).
 - Established as interdependent between more than one indicator.
- Describe the indicator ranges, or the process by which indicators are to be established.
 - The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicator(s) such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions. Such range(s) or condition(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operating conditions at least to the level required to achieve compliance with the applicable requirements.
- Describe the performance criteria for monitoring, including:
 - Specifications for obtaining representative data
 - Verification procedures to confirm the monitoring equipment's operational status
 - Quality assurance and control procedures
 - Monitoring frequency
 - 4 times per hour (minimum) if **post**-control emissions are greater than or equal to the major source thresholds
 - 1 time per day (minimum) if **post**-control emissions are less than the major source thresholds
 - Data averaging period
- Provide detailed justification for the proposed monitoring parameters.
 - The owner or operator also shall submit any data supporting the justification, and may refer to generally available sources of information used to support the justification (such as generally available air pollution engineering manuals, or EPA or permitting authority publications on appropriate monitoring for various types of control devices or capture systems). To justify the appropriateness of the monitoring elements proposed, the owner or operator may rely in part

on existing applicable requirements that establish the monitoring for the applicable pollutant-specific emissions unit or a similar unit.

- Provide any emissions test data to support the proposed monitoring parameters.
 - The owner or operator shall submit control device (and process and capture system, if applicable) operating parameter data obtained during the conduct of the applicable compliance or performance test conducted under conditions specified by the applicable rule. If the applicable rule does not specify testing conditions or only partially specifies test conditions, the performance test generally shall be conducted under conditions representative of maximum emissions potential under anticipated operating conditions at the pollutant-specific emissions unit. Such data may be supplemented, if desired, by engineering assessments and manufacturer's recommendation to justify the indicator ranges (or, if applicable, the procedures for establishing such indicator ranges). Emission testing is not required to be conducted over the entire indicator range or range of potential emissions.
 - If existing data from unit-specific compliance or performance testing are not available, the owner or operator:
 - Shall submit a test plan and schedule for obtaining such data; or
 - May submit indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data, provided that the owner or operator demonstrates that factors specific to the type of monitoring, control device, or pollutant-specific emissions unit make compliance or performance testing unnecessary to establish indicator ranges at levels that satisfy the criteria in 40 CFR 64.3(a).
- An implementation plan for installing, testing, and operating the monitoring equipment (if required).

6) Deadlines for CAM Plans - 40 CFR 64.5

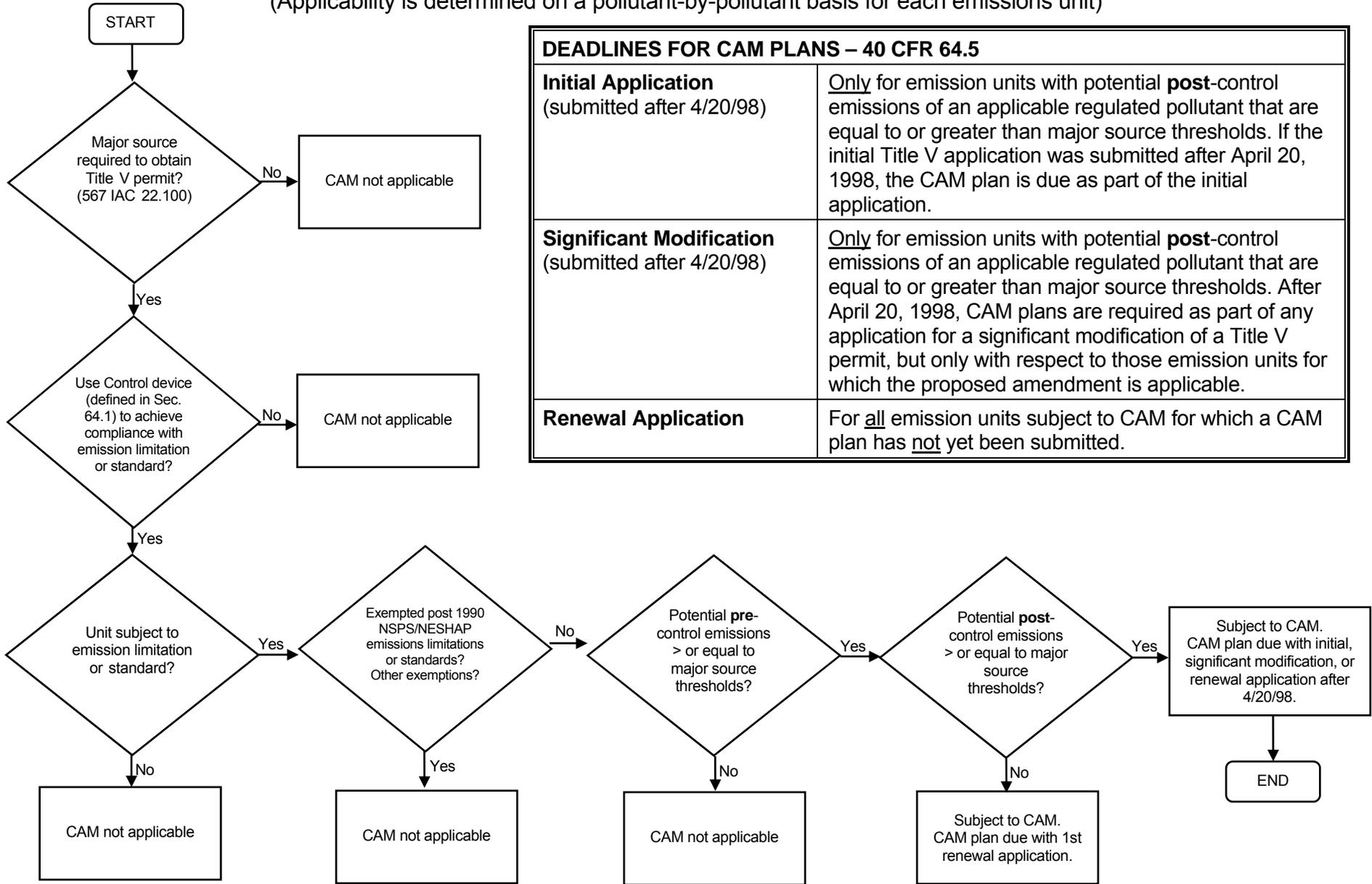
CAM plans are due as part of an initial, significant modification, or renewal Title V permit application. The majority of CAM plans will be due with renewal applications. Refer to the flowchart on the following page to determine when your CAM plan(s) are due.

7) Attachments

Attach any required CAM plan(s) to each Part 2 - Emission Point Information form for which CAM is applicable.

CAM Applicability Flowchart

(Applicability is determined on a pollutant-by-pollutant basis for each emissions unit)



DEADLINES FOR CAM PLANS – 40 CFR 64.5	
Initial Application (submitted after 4/20/98)	<u>Only</u> for emission units with potential post -control emissions of an applicable regulated pollutant that are equal to or greater than major source thresholds. If the initial Title V application was submitted after April 20, 1998, the CAM plan is due as part of the initial application.
Significant Modification (submitted after 4/20/98)	<u>Only</u> for emission units with potential post -control emissions of an applicable regulated pollutant that are equal to or greater than major source thresholds. After April 20, 1998, CAM plans are required as part of any application for a significant modification of a Title V permit, but only with respect to those emission units for which the proposed amendment is applicable.
Renewal Application	For <u>all</u> emission units subject to CAM for which a CAM plan has <u>not</u> yet been submitted.