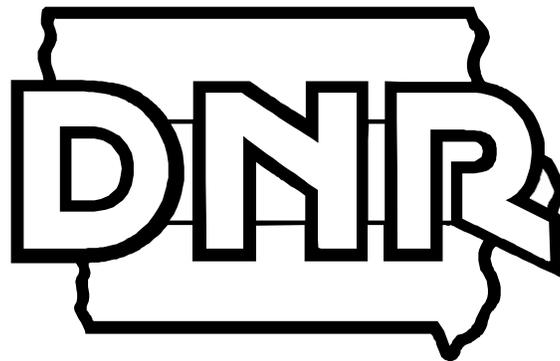


# **IOWA SMALL SOURCE**

(Also known as "Fifty Percent Permit")

## **OPERATING PERMIT APPLICATION**

### **INSTRUCTIONS**



Iowa Department of Natural Resources  
Environmental Protection Division  
Air Quality Bureau  
7900 Hickman Rd., Suite 1  
Urbandale, Iowa 50322

**APPLICATION INSTRUCTIONS  
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**Definitions**

Terms used in the air quality program and in this set of instructions are defined within the enclosed copy of the rules. General air program definitions are found in 567 IAC 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.

# IOWA SMALL SOURCE OPERATING PERMIT

## Application Instructions

Sources with a potential to emit less than the major source thresholds shown on page 5 do not need to obtain a Title V, Voluntary or Small Source Operating Permit. STOP HERE.

**Note:** This is a registration-type permit. No permit will be issued or mailed to the permitted source. However, upon completing this application and signing the certification, sources must begin operating under the limits established in Iowa Administrative Code (IAC) 22.300(6) or 22.300(4) (de minimus sources) for record keeping and all other requirements of the rule. (Eligibility see page 3.)

### 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 emission standards and the National Ambient Air Quality Standards. With the passage of the Clean Air Act Amendments of 1990 (referred to as the Act), states are required to implement an air quality operating permit program. Iowa's Operating Permit Program has three operating permits for facilities which meet the criteria for a major source. The major source criteria are discussed in the **Thresholds** Section (page 5) of this document. The three operating permits are the following: Title V, Voluntary and Small Source.

### Major Source Categories under Iowa's Operating Permit Program

(Title V, Voluntary and Small Source Operating Permits)

### Sources Required to Obtain a Title V Operating Permit

Title V sources are those facilities with potential and actual emissions that both exceed the major source thresholds (page 5).

## **Iowa Operating Permit for Small Sources**

### **Sources Qualifying for Voluntary Operating Permits**

Those facilities which would qualify for a Voluntary Operating Permit are those with after-control potential emissions that exceed the **Thresholds** (illustrated on page 4 and listed on page 5), but have actual emissions less than those thresholds for every 12-month rolling period. In obtaining a Voluntary Operating Permit potential emissions are limited through restrictions on hours of operation, process throughput or other means so that plant-wide potential emissions of each regulated air contaminant are brought below the Title V applicability thresholds.

### **---Exceptions---**

There are five major exceptions to the above statement concerning who may be eligible for the Voluntary Operating Permit Program.

- Any source which is not in compliance with all applicable regulations (other than the requirement to submit construction permits) is not eligible for a Voluntary Operating Permit.
- Sources subject to Title IV (Acid Rain) and solid waste incinerators subject to Section 129(e) of the Clean Air Act of 1990 are not eligible to apply for a Voluntary Operating Permit.
- 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 permit should have been obtained prior to initiating construction. Sources which have not submitted construction permit applications for unpermitted equipment by the application deadline of August 1, 1996, are not eligible for Voluntary Operating Permits and must apply for a Title V Permit.
- Sources which meet the criteria cited in 22.300(2)"a" and rule 22.300, and are subject to new source performance standards in the IAC 567 Chapter 23 or Section 111 of the Act are eligible only until five years from April 20, 1994, at which time a Title V Permit will be required.
- Sources which meet the criteria cited in 22.300(2)"a" and rule 22.300, and are subject to emission standards for HAPs for source categories listed in IAC 567 23.1(3) and (4) or Section 112 of the Act (Appendix D) are eligible only until five years from April 20, 1994, or until the final promulgation of a federal standard under 40 Code of Federal Regulation (CFR) Part 63 to which the source is subject, whichever is earlier. Once either of the above criteria have been met a Title V Permit is required. Questions regarding Section 112 of the Act may be directed to Christopher Kjellmark at (515) 281-7826.

## Iowa Operating Permit for Small Sources

### Sources Qualifying for Operating Permit for Small Sources

Facilities which qualify for a Small Source Operating Permit are those whose after-control potential emissions exceed the **Thresholds** (illustrated on page 4 and listed on page 5), but whose actual emissions are less than fifty percent of those thresholds for every 12-month rolling period. In obtaining a Small Source Operating Permit the owner agrees to limit plant-wide actual emissions of each regulated air contaminant to below fifty percent of the major source thresholds. Sources eligible for a Small Source Operating Permit may qualify for reduced record keeping requirements through classification as a "de minimus" emissions source (as defined in 567 IAC 22.300(4)). If you are unsure if you are a de minimus source contact the Iowa Air Emissions Assistance Program. Indicate your source classification (Small Source or De Minimus Source) at the top of Form 1.0.

### ---Exceptions---

There are three major exceptions to the above statement concerning who may be eligible for the Small Source Operating Permit.

- Sources subject to Title IV (Acid Rain) and solid waste incinerators subject to Section 129(e) of the Clean Air Act of 1990 are not eligible to apply for Small Source Operating Permits.
- Sources which meet the criteria cited in 22.300(2)"a" and rule 22.300, and are subject to new source performance standards in the IAC 567 Chapter 23 or Section 111 of the Act are eligible only until five years from April 20, 1994, then a Title V Permit is required.
- Sources which meet the criteria cited in 22.300(2)"a" and rule 22.300, and are subject to emission standards for HAPs for source categories listed in IAC 567 23.1(3) and (4) or Section 112 of the Act (Appendix D) are eligible only until five years from April 20, 1994, or until the final promulgation of a federal standard under 40 Code of Federal Regulation (CFR) Part 63 to which the source is subject, whichever is earlier. Once either of the above criteria have been met a Title V Permit is required. Questions regarding Section 112 of the Act may be directed to Christopher Kjellmark at (515) 281-7826.

**The DNR assists small businesses by funding the Iowa Air Emissions Assistance Program (IEAP). IEAP is available to assist businesses with fewer than 100 employees that are eligible for the Voluntary Operating Permit and Small Source Operating Permit. Please contact them at (319) 273-2079 or (800) 422-3109.**

**Iowa Operating Permit for Small Sources**

**Diagram of Applicability for an Operating Permit for Small Sources**

| <b>Operating Permit for Small Sources: Eligibility Thresholds</b> |  |  |   |  |  |  |
|---|--|--|---|--|--|--|
|   | <b>Criteria Pollutants</b>   | <b>Hazardous Air Pollutants</b>  |   |  |  |  |
| <b>Required to Obtain Title V or Voluntary Operating Permit</b>   | <i>100 tons potential</i>  | <i>OR 10 tons single HAP potential<br/>25 tons multiple HAPs potential</i> |   |  |  |  |
| <i>Both Options are under Fifty Percent Permit</i>                | <table border="1"> <tr> <td><b>Eligible for "Fifty Percent" Permit (actual emissions)</b></td> <td></td> </tr> <tr> <td><b>Eligible for "de minimus" Permit (actual emissions)</b></td> <td><i>2 tons single HAP<br/>5 tons multiple HAPs<br/>or less (actual)</i></td> </tr> </table> |  | <b>Eligible for "Fifty Percent" Permit (actual emissions)</b> |  | <b>Eligible for "de minimus" Permit (actual emissions)</b> | <i>2 tons single HAP<br/>5 tons multiple HAPs<br/>or less (actual)</i> |
|   | <b>Eligible for "Fifty Percent" Permit (actual emissions)</b>  |  |   |  |  |  |
| <b>Eligible for "de minimus" Permit (actual emissions)</b>        | <i>2 tons single HAP<br/>5 tons multiple HAPs<br/>or less (actual)</i>   |  |   |  |  |  |

Iowa DNR Air Quality Bureau

**Definitions**

Terms used in the air quality program and in this set of instructions are defined within the enclosed copy of the rules. General air program definitions are found in 567 IAC 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.

## Iowa Operating Permit for Small Sources

### Thresholds for Major Source Classification

To determine if your facility is a major source under Title V you should determine, considering enforceable permit restrictions, if plant-wide **POTENTIAL** emissions<sup>1</sup> 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) <sup>2</sup> | 10 tons per year  |
| All HAP's combined                                   | 25 tons per year  |

**Major sources under Title V are required to complete one of the following: Title V Operating Permit, Voluntary Operating Permit or Small Source Operating Permit (De Minimus Operating Permit) (permit thresholds on page 4).**

The full definition of Title V applicability, which includes New Source Performance Standards (NSPS)(Appendix B), National Emission Standards for Hazardous Air Pollutants (NESHAP)(Appendix A) and acid rain sources, is found in the enclosed copy of the rules in Chapter 22, page 23, 567 IAC 22.101. **READ THIS DEFINITION CAREFULLY.** Note that non-major sources that are not affected sources under Acid Rain or solid waste incinerators required to obtain a permit under 129(e) of the Act and that would otherwise be subject to Title V permitting (Voluntary and Small Source Permits) are deferred from that permitting for a period of 5 years from April 20, 1994.

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<sup>1</sup> Potential to emit may include fugitives for some source categories. Refer to 567 IAC 22.101 and 22.100 definitions of "Major source" and "Stationary source categories."

<sup>2</sup> List of included HAPs may be found in rules at 22.100.

## Iowa Operating Permit for Small Sources

### cont. **Thresholds for Major Source Classification**

**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 can not 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 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 are not included for determining applicability, except for fugitive HAPs. **Fugitive HAPs must be included in determining applicability.** Once Title V is determined to apply to a source, all fugitive emissions must be included the same as all other point sources of emissions.

### **SOURCES WITHOUT IOWA AIR QUALITY CONSTRUCTION PERMITS**

- 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.

For assistance in obtaining construction permit applications please contact Dean Peterson at (515) 281-5774 or Iowa Air Emissions Assistance Program.

**The DNR assists small businesses by funding the Iowa Air Emissions Assistance Program (IEAP). IEAP is available to assist businesses with fewer than 100 employees that are eligible for the Voluntary Operating Permit and Small Source Operating Permit. Please contact them at (319) 273-2079 or (800) 422-3109.**

## Iowa Operating Permit for Small Sources

### Filling Out The Application Forms

**Application for a Small Source Operating Permit is due by August 1, 1996.**

**Note: The forms contained in this application may be duplicated, but the copies must match the original documents.**

1. Provide an index to your application. Applications should be organized by form number with Form 1.0 first followed by Forms EU.1, PCE.1 and HAP.1. Each form type should be grouped in the order listed in Box 3 of Forms EU.1, PCE.1 and HAP.1.
2. Check the List of Exempted/Insignificant Activities located in the enclosed copy of the rules, 567--22.102 and 22.103. Sources which are required to obtain a Small Source Operating Permit may not need to list some of the equipment at their facility if it appears in the lists cited above.
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 submittals are preferred. Illegible documents are not acceptable and will be returned as incomplete.
4. Each emission unit should have an EU.1 and if required, a PCE.1. The facility should have a Form 1.0 which summarizes and certifies the application. The facility should complete as many HAP.1 forms as required to summarize their emissions, in most cases one form will be sufficient. If a facility has no HAPs a HAP.1 form is not required.
5. Emission factors will be the basis for many emission calculations. **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, FIRE, TANKS, the AIRS Facility Subsystem emission factors, all of the AP-42 stationary source volume, and the draft parts of AP-42 undergoing revision. To access the CHIEF website, go to [www.epa.gov/ttn/chief/](http://www.epa.gov/ttn/chief/). **For CHIEF information, call (919) 541-5285.**

## **Iowa Operating Permit for Small Sources**

b) Fax CHIEF offers AP-42 sections for immediate delivery by facsimile machine. A facsimile (Fax) machine with a phone headset as part of the fax machine is required equipment for using Fax CHIEF. This ensures that your fax phone line can transmit the signal indicating that it is ready to receive the CHIEF fax. To connect with Fax CHIEF dial (919) 541-5626, or 541-0548 and follow the directions. Only two documents may be requested per call. You should be aware that many of the documents are quite lengthy.

c) The Factor Information and Retrieval Data System (FIRE) is a personal computer program containing EPA's recommended criteria and hazardous air pollutant emission estimation factors. FIRE includes information about industries and their emitting processes, the chemicals emitted, and the emission factors themselves. FIRE is a user-friendly, menu-driven system with an interface patterned after Microsoft Windows. Users can browse through records in the database or can select specific emission factors. FIRE is distributed on a compact disc, free to government agencies. Other requesters must purchase FIRE or download it from the CHIEF website at [www.epa.gov/ttn/chief/fire.html](http://www.epa.gov/ttn/chief/fire.html). Users will need an IBM compatible pc that runs MS-DOS version 3.3 or later, with fixed disc having at least 10 MB of available storage, 512 KB free RAM, and a VGA color monitor. MS-DOS 5.0 or later is recommended. Contact Info CHIEF at (919) 541-5285 for help or more information.

d) XATEF is the Crosswalk/Air Toxic Emission Factor database developed for use on pc's. Crosswalk lists the chemicals that could be expected to be emitted from a given source. XATEF is a collection of air toxic emission factor data for those pollutants which links toxic air pollution data to potential emission sources. The XATEF system preceded FIRE. You should be aware that some of the latest air toxic emission factor data has not yet been incorporated into FIRE and you may wish to access the XATEF database. Contact Anne Pope at (919) 541-5373 for more information.

e) 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 toxic emissions. AP-42 Volume I addresses hundreds of stationary point and area sources, and Volume II deals with mobile sources. Emission data for many polluting activities are obtained from source tests, material balance studies, and engineering estimates. EPA supplies AP-42 to government control agencies, and others should purchase the document or download it at [www.epa.gov/ttn/chief/ap42.html](http://www.epa.gov/ttn/chief/ap42.html). For more details, contact the Info CHIEF, (919) 541-5285. Copies of AP-42 are also available from the National Technical Information Service at (703) 487-4650.

f) TANKS is a user-friendly pc software program for estimating volatile organic compound emissions from both fixed and floating roof storage tanks. A brochure describing TANKS is available from the Info CHIEF at (919) 541-5285. To download TANKS go to [www.epa.gov/ttn/chief/tanks.html](http://www.epa.gov/ttn/chief/tanks.html).

## **Iowa Operating Permit for SmallSources**

**g)** SPECIATE is a clearinghouse for speciation factors for both volatile organic compounds (VOC) and particulate matter (PM). SPECIATE runs on a pc and presents speciation data by source category and by Source Classification Code (SCC). To download SPECIATE go to [www.epa.gov/ttn/chief/software.html#speciate](http://www.epa.gov/ttn/chief/software.html#speciate).

**h)** Other sources of emission factors are your trade associations and equipment manufacturers.

**i)** The Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network provides access to CHIEF and many other air pollution information sources. It may be accessed via the following internet address: <http://www.epa.gov/ttn/>.

## Iowa Operating Permit for Small Sources

### IOWA SMALL SOURCE PERMIT APPLICATION INSTRUCTIONS FORM 1.0: FACILITY IDENTIFICATION

Indicate if your facility is a Small Source or De Minimus Source at the top of Form 1.0.

- 1) **Company/Facility Name:** Enter the official company name and/or plant designation for the facility that is submitting the Small Source Permit application. This name in most cases will be the same as on the mailing label. If your official company name has changed please enter the new facility name in the Box. This official facility name must be entered on every form submitted.
- 2) **EIQ Number:** This is the number printed on the mailing label of the application if one exists for your facility. An EIQ number is a unique number for a particular facility. This number must be entered on each form returned to IDNR. If you do not have an EIQ number or you do not know what your number is, contact Jason Marcel at (515) 242-5014 of the IDNR for assistance.
- 3,4,5) **Facility Street Address, City and ZIP Code:** The street address is the physical location of the facility.
- 6) **Facility Permit Contact Person:** The facility contact is the person most familiar with the operations of the plant and who should answer questions regarding the permit application submitted for the facility.
- 7) **Facility Contact Phone Number:** The facility phone number is the telephone number where the contact person can be reached.
- 8) **Mailing Street/P.O. Address, 9) City, 10) State and 11) ZIP Code:** The mailing address should be entered only if the mailing address of the facility is different from the street address, otherwise leave these Boxes blank.
- 12) **Parent Company/Owner Name:** Complete this block with the name of the parent company or owner if your company is owned wholly or in part by another company at a different location, otherwise leave this Box blank.
- 13) **Parent Company/Owner Mailing Address:** Enter the mailing address of the parent company or owner if one is identified in Box 12, otherwise leave the Box blank.
- 14), 15), 16) **City, State, Zip Code:** Enter the city, state, and Zip code of the parent company or owner if one is identified in Box 12, otherwise leave the Boxes blank.

## **Iowa Operating Permit for Small Sources**

17) **Parent Company Contact/Agent:** Enter the name of a person to contact at the parent company or the registered agent for the company if one is identified in Box 12, otherwise leave the Box blank.

18) **Parent Company Contact Phone Number:** Enter the telephone number of the contact if one is identified in Box 17, otherwise leave the Box blank.

### **Principal Activity - Process and Products**

19) **Activity Description:** Enter a written description of the activity occurring at this facility such as "Cereal Breakfast Foods manufacturing" or a similar description.

20) **Secondary Activities:** Enter a written description of any secondary activities that may be occurring at the facility such as "Cereal Box - Commercial Printing, Gravure", if none exist leave the Box blank.

21) **12 Month Period:** Record the beginning and ending date for the 12 month period, chosen within the 18 months preceding application submission, used to calculate actual annual emissions in the Box labeled "**Twelve Month Period used for Total Emissions.**"

22) **Actual - Facility Total Emissions (Tons Per Year)**  
Report the actual emissions for one contiguous 12-month period within the 18 months preceding submissions of the application to the department. This is the 12-month period that the operating data used to calculate the facilities annual actual emissions were generated.

23) **Designation of the Responsible Official:** Enter the information requested for the person designated as taking responsibility for the truth, accuracy, and completeness of the Small Source Permit Application. **Note:** The signature is submitted on Form 1.0.

### **Certification & Commitment to Operate under the Terms and Requirements of 567 IAC Rule 22.300**

The rules cited on the form and in the Act require that a responsible company official certify the truth, accuracy and completeness of the application.

The responsible company official should be designated in section 25 of Form 1.0 and should be the same person signing the certifications.

**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.**

## Iowa Operating Permit for Small Sources

### IOWA SMALL SOURCE PERMIT APPLICATION INSTRUCTIONS FORM EU.1: EMISSION UNIT DESCRIPTION

DUPLICATE THIS FORM AS NEEDED AND SUBMIT A COMPLETE COPY FOR EACH EMISSION UNIT (process) AT YOUR FACILITY. (Please ensure that the copies match the originals in this application packet.)

An emission unit is the specific process that generates 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 raw materials processed (also known as throughputs) - such as a grain dryer:

throughput 1: natural gas combustion - NO<sub>x</sub>, 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 (EU.1 and EU.2), with TWO "Form EU.1" completed (one for each emission unit).

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0, Box 1.
- 2) **EIO Number**: Enter the EIQ number from Form 1.0, Box 2.
- 3) **Form EU.1 - page of** : A separate Form EU.1 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 EU.1, this Box identifies each page of the total number of Forms EU.1 that have been included.
- 4) **EMISSION UNIT NUMBER**: Enter the identification number that your company assigns to this emission unit (examples: EU.1, EU.2 and EU.3). **Keep in mind that an emission unit is the specific process that generates the air pollution emissions, e.g. boiler, paint gun.**
- 5) **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 6) and specific "emission factor units"(lbs/ton, lbs/gal, etc). SCC numbers may be found in CHIEF or FIRE mentioned on page 7 and 8 respectively. If a SCC number does not exist for a process leave this Box blank.

## Iowa Operating Permit for Small Sources

- 6) **DESCRIPTION OF PROCESS:** Provide a written description of the process as defined by the SCC number entered in the preceding Box 5. If a SCC number and corresponding description is not available for this specific process please provide your best description of the process.
- 7) **Name of Manufacturer or Description:** Enter the name of the manufacturer of this emission unit (process equipment) or a written description which uniquely identifies this emission unit. An example would be a boiler with a missing name plate that is painted blue could be labeled "Blue Boiler."
- 8) **Raw Material - OR - Fuels Used:** Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If this unit has two throughputs only one raw material or fuel will be listed here, while the other will be listed on a second Form EU.1. Based on the example at the beginning of the instructions for this form two Form EU.1s would be produced. Each form would have a separate emission unit number in Box 4 and a different throughput in Box 8. One form would show natural gas in Box 8 and the other form would show grain in Box 8.
- 9) **Date of Installation or Modification:** Enter the date of the actual installation of the emission unit equipment. If this emission unit has been modified since it was originally installed, please enter the date of the last modification.
- 10) **Existing Federally Enforceable 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 permit or in an enforcement order. If none exist leave this Box blank.
- 11) **Permit or Rule Establishing Limit:** Enter the source of the operating limitation specified in Box 10. The source may be a construction or operating permit, or an administrative or court order. In either case list the permit number or the ordernumber here. If Box 10 is blank leave this Box blank.
- 12) **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 8.
- 13) **Air Pollution Control Equipment (CE) Number:** Enter the identification number your company has assigned to this piece of emission control equipment. Up to three different control devices may be identified for this emission unit.

## Iowa Operating Permit for Small Sources

### INFORMATION USED TO CALCULATE ACTUAL EMISSIONS

**Air Pollutant - Type:** In addition to the six criteria air pollutants listed there are seven spaces under "HAPs" which should be used to list the individual hazardous air pollutants (HAPs) which are emitted from this unit. Please indicate the identity of the pollutant by entering the Chemical Abstract Service (CAS) number, usually found on the Material Safety Data Sheet (MSDS). Use additional pages of Form EU.1 if more than 7 individual hazardous air pollutant are emitted from the unit. If no HAPs are emitted from this unit leave these boxes blank.

14) **Factor Source** : Indicate the source of the emission factor used in Box 15. See the bottom of Form EU.1 for typical sources of emission factors.

15) **Emission Factor**: Enter the numerical emission factor (in pounds per unit) used to calculate the units actual emissions. As noted at the bottom of the form, emission factors can be obtained for some processes from EPA documents or calculated from stack test data, worksheets, or continuous emission monitoring data. See Form PCE.1 instructions for a discussion of the use of stack test results.

16) **Units of Factor** : Enter the emission factor units that correspond to the numerical emission factor utilized in Box 15. 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.

17) **Ash or Sulfur %**: For combustion sources only, enter the percent ash in the fuel in the PM-10 column. Enter the percent sulfur in the fuel in the SO<sub>x</sub> column. Leave blank if this does not apply to the emission unit.

**Air Pollutant -Individual (HAP)**: List the individual hazardous air pollutants (HAPs). Please indicate the identity of the pollutant by entering the CAS number below the "CAS#" shown in the cell. Use additional pages if more than seven individual hazardous air pollutant are emitted from the unit.

18) **Factor Source** : Indicate the source of the emission factor used in Box 19. See the bottom of Form EU.1 for typical sources of emission factors.

19) **Emission Factor**: Enter the numerical emission factor (in pounds per unit) used to calculate the units actual emissions. As noted at the bottom of the form, emission factors can be obtained for some processes from EPA documents or calculated from stack test data, worksheets, or continuous emission monitoring data. See Form PCE.1 instructions if using stack test results.

## Iowa Operating Permit for Small Sources

20) **Units of Factor** : Enter the emission factor units that correspond to the numerical emission factor utilized in Box 19. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton (lbs/ton), pounds/gallon (lbs/gal), pounds/million cubic feet (lbs/mmcf), etc.

21) **Actual Emissions**: Report the actual emissions in **tons/year** of each HAP for one contiguous 12-month period within the 18 months preceding submission of the application to the department.

**Calculation of Actual Emissions (Tons/Yr)**: This is the amount in tons per year of the pollutant emitted at the emission unit described which will be used to calculate the annual facility total of each pollutant type. All figures should be rounded to two decimal places. There are two possible formulas. The calculation performed to complete this application do not need to be submitted to the IDNR but should be retained at the facility for future reference.

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

Actual Emissions = Actual Throughput (emission unit) x Emission Factor x [(100 - Overall Control Efficiency) ÷ 100] ÷ 2000.

**Note:** Overall Control Efficiency = (Capture Efficiency x Equipment Control Efficiency)  
If the Capture Efficiency is unknown assume 100%.

For example, assume the Actual Throughput is 30,000 tons of corn processed (internal operations), the PM-10 emission factor is .20 pounds of PM-10 emitted per ton of corn processed and a PM-10 control device for this emission unit has an Overall Control Efficiency of 90%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 30,000 \times .20 \times [(100 - 90) \div 100] \div 2000 \\ &= 6,000 \times [10 \div 100] \div 2000 \\ &= 6,000 \times [.1] \div 2000 \\ &= 600 \div 2000 \\ &= 0.30 \text{ tons of PM-10 emitted per year} \end{aligned}$$

Note: If no control devices are used, the Overall Control Efficiency is 0% and the value would be 3.00 tons per year.

## Iowa Operating Permit for Small Sources

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

Actual Emissions = Actual Throughput x Emission Factor x % Ash or Sulfur from fuel analysis x [(100 - Overall Control Efficiency) ÷ 100] ÷ 2000.

For example, assume the Actual Throughput is 1000 tons of fuel burned, the SO<sub>x</sub> emission factor is 30 pounds of SO<sub>x</sub> emitted per percent of sulfur in the fuel burned, the sulfur content of the fuel is 1.7% and the SO<sub>x</sub> control device has an Overall Control Efficiency of 50%. Using the formula above:

$$\begin{aligned} \text{Actual Emissions} &= 1000 \times 30 \times 1.7 \times [(100 - 50) \div 100] \div 2000 \\ &= 30,000 \times 1.7 \times [50 \div 100] \div 2000 \\ &= 30,000 \times 1.7 \times [.5] \div 2000 \\ &= 51,000 \times [.5] \div 2000 \\ &= 25,500 \div 2000 \\ &= 12.75 \text{ tons of SO}_x \text{ emitted per year} \end{aligned}$$

If you require assistance with calculating your emissions contact the Iowa Air Emissions Assistance Program.

**The DNR assists small businesses by funding the Iowa Air Emissions Assistance Program (IEAP). IEAP is available to assist businesses with fewer than 100 employees that are eligible for the Voluntary Operating Permit and Small Source Operating Permit. Please contact them at (319) 273-2079 or (800) 422-3109.**

## Iowa Operating Permit for Small Sources

### IOWA SMALL SOURCE PERMIT APPLICATION INSTRUCTIONS FORM PCE.1: POLLUTION CONTROL EQUIPMENT DATA SHEET

This form is **REQUIRED** to be completed for **each** piece of air pollution emission control equipment at small source facilities. Duplicate this form as needed. ( Please ensure that the copies match the originals in the application packet.)

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0, Box 1.
- 2) **EIO Number**: Enter the EIQ number from Form 1.0, Box 2.
- 3) **Form PCE.1 page of** : Since multiple forms PCE.1 may need to be submitted, this Box identifies each page of the total number of Forms PCE.1 included. As an example, page 2 of 14.
- 4) **Control Equipment (CE) No.** : Enter the control equipment number for this pollution control device. This should be a unique value such as CE1, CE2 or CE3.
- 5) **Type of Pollution Control Equipment**: Describe the type of pollution control equipment represented on this form. For example, pulse jet baghouse, venturi scrubber, etc.
- 6) **Name of Manufacturer or Description**: List the name of the pollution control equipment manufacturer or provide a unique description of the control equipment.
- 7) **Date of Installation or Modification**: Enter the date the pollution control equipment was installed at your facility. If this pollution control equipment has been modified since it was originally installed, please enter the date of the last modification.
- 8) **Does this Equipment Exhaust by Stack or Vent to the Atmosphere Outside the Building?** Mark the appropriate Box. 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.
- 9) **Emission Unit No. - Associated Equipment**: List the emission unit(s) associated with this piece of pollution control equipment in the Boxes to the right. List one unit per Box.

## Iowa Operating Permit for Small Sources

10) **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.**

### Stack testing for Operating Permit purposes

If you are planning to conduct a stack test for the purposes of quantifying emissions for the Operating Permit application:

- Obtain a DNR Operating Permit Stack Test Protocol form from the department by contacting Mark Stone at (515) 242-6001
- Provide all information as required by the protocol form with the Operating Permit Application.

**Pollutant Controlled**: Place the information in the appropriate column for the different air pollutants being controlled by this piece of pollution control equipment.

11) **% Capture** : 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 air contaminants emitted by the process. Be aware that capture efficiencies may be different for different pollutants. **If the capture efficiency is unknown assume 100 %.**

12) **Equipment Control 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.

13) **Overall Control Efficiency %** : Overall pollution control efficiency may be obtained by multiplying the capture efficiency by the equipment control efficiency.

## Iowa Operating Permit for Small Sources

**Hazardous Air Pollutants (HAPs) Controlled:** Place the information in the appropriate column for the different HAPs being controlled by this piece of pollution control equipment.

14) **% Capture** : 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. Be aware that capture efficiencies may be different for different pollutants. **If the capture efficiency is unknown assume 100 %.**

15) **Equipment Control 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.

16) **Overall Control Efficiency %** : Overall pollution control efficiency may be obtained by multiplying the capture efficiency by the equipment control efficiency.

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### IOWA SMALL SOURCE PERMIT APPLICATION INSTRUCTIONS FORM HAP.1: HAZARDOUS AIR POLLUTANTS (HAPs) DATA SHEET

- 1) **Company/Facility Name**: Enter the company name as it appears on Form 1.0, Box 1.
- 2) **EIO Number**: Enter the EIQ number from Form 1.0, Box 2.
- 3) **Form HAP.1 - page of** : Since some companies may need to use multiple Forms HAP.1, this Box identifies each page of the total number of Forms HAP.1 that have been included.
- 4) **CAS No.**: Enter the Chemical Abstract Service (CAS) number (Appendix C) of the hazardous air pollutant listed in column 5.
- 5) **Chemical Name**: Enter the name of the hazardous air pollutant that corresponds with the CAS number listed in column 4. The hazardous air pollutants of concern under the small source operating permit are the 188 chemicals or chemical families listed in the attached copy of the Iowa rules and Clean Air Act Amendments of 1990. Chemical abbreviations are in Appendix C.
- 6) **Actual Emissions (Tons/Yr)**: Summarize the **plant-wide Actual Emissions in tons per year** of each Hazardous Air Pollutant identified in Box 5 that is emitted from your facility.
- 7) **Totals this Page**: Enter, in tons per year, the total Hazardous Air Pollutant actual emissions **for this page**.
- 8) **Facility Totals - Actual Emissions of Hazardous Air Pollutants (HAPs)**: On the first Form HAP.1 (if multiple Forms HAP.1 are needed) enter the total of all HAP actual emissions for the plant by **adding up all of the individual Form HAP.1 page totals (Box 7)**. Place the total actual emissions value in the HAPs Box on **Form 1.0**.

## Iowa Operating Permit for Small Sources

### APPENDIX A National Emission Standards for Hazardous Air Pollutants

| Pollutant                                     | Facility or Emission Unit type  | Iowa Rules<br>567 IAC | 40 CFR 61<br>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 Chloralkali Cells; and Sludge Incinerators  | 23.1(3)"d"            | E                    |
| VINYL<br>CHLORIDE                             | Ethylene Dichloride Manufacturing via Oxygen, HCl and Ethylene; Vinyl Chloride Manufacturing; and Polyvinyl Chloride Manufacturing  | 23.1(3)"e"            | F                    |
| RADIO-<br>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<br>ARSENIC                          | Glass manufacturer; Primary Copper Smelter; Arsenic Trioxide and Metallic Arsenic Production Facilities   | 23.1(3)"I" and "j"    | N, O, P              |
| VOLATILE<br>HAZARDOUS<br>POLLUTANTS<br>(VHAP) | Pumps, Compressors, Pressure Relief Devices, Connections, Valves, Lines, Flanges, Product Accumulator AIR Vessels, etc. in VHAP Service   | 23.1(3)"g"            | V                    |

## Iowa Operating Permit for Small Sources

### APPENDIX B STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES Performance Standards promulgated as of August 31, 1993

| Source Categories subject to NSPS   | 567 IAC<br>23.1(2) | Effective date of Construction,<br>Modification or<br>Reconstruction | 40 CFR 60<br>Subpart |
|---|--------------------|--|----------------------|
| Fossil fuel-fired steam generators >250 MMBtu not covered under 40 CFR 60 subpart Da      | "a"                | After: 08/17/71  | D                    |
| Electric utility steam generators >250 MMBtu  | "z"                | After: 09/18/78  | Da                   |
| Industrial-commercial-institutional steam generators 100 MMBtu                            | "ccc"              | After: 06/19/84  | Db                   |
| Industrial-commercial-institutional steam generators $\geq$ 10 MMBtu but $\leq$ 100 MMBtu | "lll"              | After: 06/09/89  | Dc                   |
| Incinerators  | "b"                | After: 08/17/71  | E                    |
| Municipal waste combustors  | "nnn"              | Initial Construction   | Ea                   |
| Portland cement plants  | "c"                | After: 08/17/71  | F                    |
| Nitric acid plants  | "d"                | After: 08/17/71  | G                    |
| Sulfuric acid plants  | "e"                | Initial Construction   | 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 but prior to<br>5/19/78                               | K                    |
| Petroleum storage vessels with capacity > 40,000 gallons                                  | "cc"               | After: 5/18/78 but prior to<br>7/23/84                               | Ka                   |
| Volatile organic liquid storage vessels (including petroleum liquids)                     | "ddd"              | After: 07/23/84  | Kb                   |
| 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                    |

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| Source Categories subject to NSPS  | 567 IAC<br>23.1(2) | Effective date of Construction,<br>Modification or<br>Reconstruction | 40 CFR 60<br>Subpart |
|--|--------------------|--|----------------------|
| 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  | "v"                | After: 10/24/74  | Y                    |
| Ferroalloy production facilities   | "w"                | After: 10/24/74  | Z                    |
| Electric arc furnaces and argon-oxygen decarburization vessels                         | "ww"               | Constructed after 8/17/83  | AAa                  |
| Steel plants   | "l"                | After 10/21/74 and 8/17/83   | AA                   |
| 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  | DD                   |
| Surface coating metal furniture  | "gg"               | After: 11/28/80  | EE                   |
| Stationary gas turbines  | "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  | "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                   |
| 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  | VV                   |
| 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  | DDD                  |

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| Source Categories subject to NSPS  | 567 IAC<br>23.1(2) | Effective date of Construction,<br>Modification or<br>Reconstruction | 40 CFR 60<br>Subpart |
|--|--------------------|--|----------------------|
| Flexible vinyl and urethane coating and printing   | "uu"               | After: 01/18/83  | FFF                  |
| Equipment leaks of VOC in petroleum refineries   | "tt"               | After: 01/04/83  | GGG                  |
| VOC emissions from synthetic organic chemical manufacturing industry air oxidation unit processes  | "jjj"              | After: 10/21/83  | III                  |
| Synthetic fiber production facilities  | "ss"               | Construction or reconstruction<br>after: 11/23/82                    | HHH                  |
| Petroleum dry cleaners   | "vv"               | After: 12/14/82  | JJJ                  |
| Equipment leaks of VOC from on-shore natural gas processing plants                                 | "zz"               | After: 01/20/84  | KKK                  |
| On shore natural gas processing: SO <sub>2</sub> emissions   | "aaa"              | After: 01/20/84  | 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)                       | "bbb"              | After: 08/31/83  | OOO                  |
| Wool fiberglass insulation manufacturing plants  | "xx"               | After: 02/07/87  | 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 | "qqq"              | After: 08/31/93  | RRR                  |
| Magnetic tape coating facilities   | "hhh"              | After: 01/22/86  | SSS                  |
| Industrial surface coating: Surface coating of plastic parts for business machines                 | "fff"              | After: 01/08/86  | TTT                  |
| Calciners and dryers in mineral industries   | "ppp"              | After: 04/23/86  | UUU                  |
| Polymeric coating of supporting substrates facilities  | "iii"              | After: 04/30/87  | VVV                  |

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**APPENDIX C  
ACCEPTABLE ABBREVIATIONS FOR CHEMICALS**

| <b>CHEMICAL NAME</b>  | <b>ABBREVIATION</b> | <b>CAS_NO</b> |
|-----------------------|---------------------|---------------|
| ACETALDEHYDE          | ACETALDEHYDE        | 75-07-0       |
| ACETAMIDE             | ACETAMIDE           | 60-35-5       |
| ACETONITRILE          | ACETONITRILE        | 75-05-8       |
| ACETOPHENONE          | ACETOPHENONE        | 98-86-2       |
| 2-ACETYLAMINOFLUORENE | ACETYLAMIN,2        | 53-96-3       |
| ACROLEIN              | ACROLEIN            | 107-02-8      |
| ACRYLAMIDE            | ACRYLAMIDE          | 79-06-1       |
| ACRYLIC ACID          | ACRYLIC ACID        | 79-10-7       |
| ACRYLONITRILE         | ACRYLONITRIL        | 107-13-1      |
| ALLYL CHLORIDE        | ALLYL CHLORI        | 107-05-1      |
| 4-AMINOBIHENYL        | AMINOBIHEN,4        | 92-67-1       |
| ANILINE               | ANILINE             | 62-53-3       |
| O-ANISIDINE           | ANISIDINE,O-        | 90-04-0       |
| ANTIMONY COMPOUNDS    | ANTIMNY CMPS        | SB-C          |
| SB                    | ANTIMNY CMPS        | SB            |
| ARSENIC COMPOUNDS     | ARSENIC CMPS        | AS-C          |
| AS                    | ARSENIC CMPS        | AS            |
| FRIABLE ASBESTOS      | ASBESTOS (FR        | 1332-21-4     |
| BENZENE               | BENZENE             | 71-43-2       |
| BENZIDINE             | BENZIDINE           | 92-87-5       |
| BENZOTRICHLORIDE      | BENZOTRICHLO        | 98-07-7       |
| BENZYL CHLORIDE       | BENZYL CHLOR        | 100-44-7      |
| BERYLLIUM COMPOUNDS   | BERYL CMPS          | BE-C          |

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| CHEMICAL NAME             | ABBREVIATION | CAS_NO    |
|---------------------------|--------------|-----------|
| BE                        | BERYL CMPS   | BE        |
| BETA-PROPRIOLACTONE       | BETA-PROPRIO | 57-57-8   |
| BIPHENYL                  | BIPHENYL     | 92-52-4   |
| BIS (2-CHLOROETHYL) ETHER | BIS(2-CLETH) | 111-44-4  |
| BIS(CHLOROMETHYL)ETHER    | BIS(CLMETH)  | 542-88-1  |
| BROMOFORM                 | BROMOFORM    | 75-25-2   |
| BROMOMETHANE              | BROMOMETH    | 74-83-9   |
| 1,3-BUTADIENE             | BUTADIENE,13 | 106-99-0  |
| CADMIUM COMPOUNDS         | CADMIUM CMPS | CD-C      |
| CD                        | CADMIUM CMPS | CD        |
| CALCIUM CYANAMIDE         | CALCIUM CYAN | 156-62-7  |
| CAPTAN                    | CAPTAN       | 133-06-2  |
| CARBARYL                  | CARBARYL     | 63-25-2   |
| CARBON DISULFIDE          | CARBON DISUL | 75-15-0   |
| CARBON TETRACHLORIDE      | CARBON TETRA | 56-23-5   |
| CARBONYL SULFIDE          | CARBONYL SUL | 463-58-1  |
| CATECHOL                  | CATECHOL     | 120-80-9  |
| CHLORAMBEN                | CHLORAMBEN   | 133-90-4  |
| CHLORDANE                 | CHLORDANE    | 57-74-9   |
| CHLORINE                  | CHLORINE     | 7782-50-5 |
| CHLOROACETIC ACID         | CHLOROACETIC | 79-11-8   |
| CHLOROBENZENE             | CHLOROBENZ   | 108-90-7  |
| CHLOROETHANE              | CHLOROETHANE | 75-00-3   |
| CHLOROFORM                | CHLOROFORM   | 67-66-3   |
| CHLOROPRENE               | CHLOROPRENE  | 126-99-8  |

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| CHEMICAL NAME                            | ABBREVIATION | CAS_NO    |
|--|--------------|-----------|
| CR                                       | CHROMIM CMPS | CR        |
| CHROMIUM COMPOUNDS                       | CHROMIM CMPS | CR-C      |
| 2-CHLOROACETOPHENONE                     | CLACETOPHE,2 | 532-27-4  |
| CHLOROBENZILATE                          | CLBENZILATE  | 510-15-6  |
| CHLOROMETHYL METHYL ETHER                | CLMETH METH  | 107-30-2  |
| CARBON MONOXIDE                          | CO           | 630-08-0  |
| COBALT COMPOUNDS                         | COBALT CMPS  | CO-C      |
| CO                                       | COBALT CMPS  | CO        |
| COKE OVEN EMISSIONS                      | COKE OVEN GS | CKG       |
| CRESOL- MIXED ISOMERS                    | CRESOL MX IS | 1319-77-3 |
| M-CRESOL                                 | CRESOL,M     | 108-39-4  |
| O-CRESOL                                 | CRESOL,O     | 95-48-7   |
| P-CRESOL                                 | CRESOL,P     | 106-44-5  |
| CUMENE                                   | CUMENE       | 98-82-8   |
| CYANIDE COMPOUNDS (XCN)                  | CYANIDE CMP  | XCN       |
| 2,4-D [ACETIC ACID (2,4-DICHLOROPHENOXY) | D,2,4        | 94-75-7   |
| P,P-DICHLORODIPHENYL DICHLOROETHYLENE    | DDE (IOWA)   | 3547-04-4 |
| DIAZOMETHANE                             | DIAZOMETHANE | 334-88-3  |
| DIBENZOFURAN                             | DIBENZOFURAN | 132-64-9  |
| 1,2-DIBROMO-3-CHLOROPROPANE              | DIBROMO3,12  | 96-12-8   |
| 1,2-DIBROMOETHANE                        | DIBROMOET,12 | 106-93-4  |
| DIBUTYL PHTHALATE                        | DIBUTYL PHTH | 84-74-2   |
| DICHLORVOS                               | DICHLORVOS   | 62-73-7   |
| 1,4-DICHLOROBENZENE                      | DICLBENZ,14  | 106-46-7  |
| 3,3-DICHLOROBENZIDENE                    | DICLBENZD,33 | 91-94-1   |

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| CHEMICAL NAME            | ABBREVIATION | CAS_NO   |
|--------------------------|--------------|----------|
| 1,1-DICHLOROETHANE       | DICLETH,11-  | 75-34-3  |
| 1,2-DICHLOROPROPANE      | DICLPROP,12  | 78-87-5  |
| 1,3-DICHLOROPROPENE      | DICLPROPE,13 | 542-75-6 |
| DIETHYL SULFATE          | DIETH SULFAT | 64-67-5  |
| DIETHANOLAMINE           | DIETHANOLAMI | 111-42-2 |
| DIETHYLHEXYL PHTHALATE   | DIEYLHEX PHT | 117-81-7 |
| DIMETHYL AMINOAZOBENZENE | DIMETH AMINO | 60-11-7  |
| 1,1-DIMETHYL HYDRAZINE   | DIMETH HY,11 | 57-14-7  |
| DIMETHYL PHTHALATE       | DIMETH PHTHA | 131-11-3 |
| DIMETHYL SULFATE         | DIMETH SULFA | 77-78-1  |
| 3,3-DIMETHYLBENZIDENE    | DIMETHBNZ,33 | 119-93-7 |
| DIMETHYLFORMAMIDE, N,N-  | DIMETHFORMAM | 68-12-2  |
| 3,3-DIMETHOXYBENZIDENE   | DIMETHOXY,33 | 119-90-4 |
| DIMETHYLPHYLAMINE        | DIMETHYLPHYL | 121-69-7 |
| 4,6-DINITRO-O-CRESOL     | DINITRO-O-CR | 534-52-1 |
| 2,4-DINITROPHENOL        | DINITROPH,24 | 51-28-5  |
| 2,4-DINITROTOLUENE       | DINITRTOL,24 | 121-14-2 |
| 1,4-DIOXANE              | DIOXANE      | 123-91-1 |
| 1,2-DIPHENYLHYDRAZINE    | DIPHENHYD,12 | 122-66-7 |
| EPICHLOROHYDRIN          | EPICLHYDRIN  | 106-89-8 |
| 1,2-EPOXYBUTANE          | EPOXYBUT,12  | 106-88-7 |
| ETHYL ACRYLATE           | ETH ACRYLATE | 140-88-5 |
| ETHYL CARBAMATE          | ETHYL CARBAM | 51-79-6  |
| ETHYLBENZENE             | ETHYLBENZENE | 100-41-4 |
| ETHYLENE GLYCOL          | ETHYLENE GLY | 107-21-1 |

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| CHEMICAL NAME                              | ABBREVIATION | CAS_NO     |
|--|--------------|------------|
| ETHYLENE IMINE                             | ETHYLENE IMI | 151-56-4   |
| ETHYLENE OXIDE                             | ETHYLENE OXI | 75-21-8    |
| ETHYLENE THIUREA                           | ETHYLENE THI | 96-45-7    |
| FINE MINERAL FIBERS                        | FINE MNRLFIB | FMF        |
| FORMALDEHYDE                               | FORMALDEHYDE | 50-00-0    |
| GLYCOL ETHERS (MISC.)                      | GLYCOL ETHRS | 52286-19-8 |
| SULFURIC ACID MIST                         | H2SO4 MIST   | 7664-93-9  |
| HYDROCHLORIC ACID                          | HCL          | 7647-01-0  |
| HEPTACHLOR                                 | HEPTACHLOR   | 76-44-8    |
| 1,2,3,4,5,5-HEXACHLORO-1,3-CYCLOPENTADIENE | HEXACL-1,3-C | 77-47-4    |
| HEXAMETHYLENE-1,6-DIISOCYANATE             | HEXAMETHYL16 | 822-06-0   |
| N-HEXANE                                   | HEXANE       | 110-54-3   |
| HEXACHLOROETHANE                           | HEXCHLORETH  | 67-72-1    |
| HEXACHLORO-1,3-BUTADIENE                   | HEXCL-13-BUT | 87-68-3    |
| HEXACHLOROBENZENE                          | HEXCLBENZENE | 118-74-1   |
| HYDROGEN FLUORIDE                          | HF           | 7664-39-3  |
| HEXAMETHYL PHOSPHORAMIDE                   | HXMETH PHOSP | 680-31-9   |
| HYDRAZINE                                  | HYDRAZINE    | 302-01-2   |
| HYDROGEN SULFIDE                           | HYDROGEN SUL | 7783-06-4  |
| HYDROQUINONE                               | HYDROQUINONE | 123-31-9   |
| ISOPHORONE                                 | ISOPHORONE   | 78-59-1    |
| LEAD                                       | LEAD         | 7439-92-1  |
| LEAD COMPOUNDS                             | LEAD CMPS    | PB-C       |
| PB   | LEAD CMPS    | PB         |
| LINDANE, (ALL ISOMERS)                     | LINDANE ISO  | 58-89-9    |

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| CHEMICAL NAME                      | ABBREVIATION | CAS_NO    |
|------------------------------------|--------------|-----------|
| MALEIC ANHYDRIDE                   | MALEIC ANHYD | 108-31-6  |
| MANGANESE COMPOUNDS                | MANGAN CMPS  | MN-C      |
| MN                                 | MANGAN CMPS  | MN        |
| MERCURY COMPOUNDS                  | MERCURY CMPS | HG-C      |
| HG                                 | MERCURY CMPS | HG        |
| 4,4-METHYLENE BIS(2-CHLOROANILINE) | METEN BIS,44 | 101-14-4  |
| METHYL ETHYL KETONE                | METH ETH KET | 78-93-3   |
| METHYL HYDRAZINE                   | METH HYDRAZI | 60-34-4   |
| METHYL IODIDE                      | METH IODIDE  | 74-88-4   |
| METHYL ISOBUTYL KETONE             | METH ISOBUT  | 108-10-1  |
| METHYL ISOCYANATE                  | METH ISOCYAN | 624-83-9  |
| METHYL METHACRYLATE                | METH METHACR | 80-62-6   |
| METHYL TERT BUTYL ETHER            | METH TERT BU | 1634-04-4 |
| METHANOL                           | METHANOL     | 67-56-1   |
| 4,4-METHYLENE DIANILINE            | METHENE DIAN | 101-77-9  |
| METHYLENE(B)4-PHENYLISOCYANATE     | METHENE(B)4- | 101-68-8  |
| METHOXYCHLOR                       | METHOXYCHLOR | 72-43-5   |
| METHYL CHLORIDE                    | METHYL CHLOR | 74-87-3   |
| METHYLENE CHLORIDE                 | METHYLENE CL | 75-09-2   |
| NAPHTHALENE                        | NAPHTHALENE  | 91-20-3   |
| N,N-DIMETHYL CARBAMOYL CHLORIDE    | NDIMETH CARB | 79-44-7   |
| NICKEL COMPOUNDS                   | NICKEL CMPS  | NI-C      |
| NI                                 | NICKEL CMPS  | NI        |
| 4-NITROBIPHENYL                    | NITRBIPHEN,4 | 92-93-3   |
| NITROBENZENE                       | NITROBENZ    | 98-95-3   |

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| CHEMICAL NAME                    | ABBREVIATION | CAS_NO     |
|----------------------------------|--------------|------------|
| 4-NITROPHENOL                    | NITROPHENL,4 | 100-02-7   |
| 2-NITROPROPANE                   | NITROPROPA,2 | 79-46-9    |
| N-NITROSO-N-METHYLUREA           | NITROSO-N,N  | 684-93-5   |
| N-NITROSODIMETHYLAMINE           | NITROSODIMET | 62-75-9    |
| N-NITROSOMORPHOLINE              | NITROSOMOR,N | 59-89-2    |
| NITRIC OXIDE                     | NO           | 10102-43-9 |
| NITROGEN DIOXIDE                 | NO2          | 10102-44-0 |
| PARATHION                        | PARATHION    | 56-38-2    |
| POLYCHLORINATED BIPHENYLS (PCBS) | PCBS         | 1336-36-3  |
| PENTACHLOROPHENOL (PCP)          | PCP          | 87-86-5    |
| PENTACHLORONITROBENZENE          | PENTCLNITBEN | 82-68-8    |
| TETRACHLOROETHYLENE              | PERC         | 127-18-4   |
| PHENOL                           | PHENOL       | 108-95-2   |
| P-PHENYLENEDIAMINE               | PHENYLENED,P | 106-50-3   |
| PHOSGENE                         | PHOSGENE     | 75-44-5    |
| PHOSPHINE                        | PHOSPHINE    | 7803-51-2  |
| PHOSPHORUS (YELLOW OR WHITE)     | PHOSPHORUS   | 7723-14-0  |
| PHTHALIC ANHYDRIDE               | PHTHALIC ANH | 85-44-9    |
| PARTICULATE MATTER               | PM           | PM         |
| TSP                              | PM           | PM         |
| PARTICULATE MATTER <10 MICRONS   | PM10         | PM-10      |
| PM-10                            | PM10         | PM-10      |
| POLYCYCLIC ORGANIC MATTER        | POM          | POM        |
| 1,2-PROPYLENEIMINE               | PROP IM, 12  | 75-55-8    |

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| CHEMICAL NAME                            | ABBREVIATION | CAS_NO    |
|--|--------------|-----------|
| PROPANE SULTONE                          | PROPANESULT  | 1120-71-4 |
| PROPIONALDEHYDE                          | PROPIONALDEH | 123-38-6  |
| PROPOXUR                                 | PROPOXUR     | 114-26-1  |
| PROPYLENE OXIDE                          | PRPLENE OXID | 75-56-9   |
| QUINOLINE                                | QUINOLINE    | 91-22-5   |
| QUINONE                                  | QUINONE      | 106-51-4  |
| RADIONUCLIDES                            | RADIONUCLIDE | RAD       |
| REDUCED SULFUR COMPOUNDS                 | REDCD S CMPS | RSC       |
| SELENIUM COMPOUNDS                       | SELENIM CMPS | SE-C      |
| SE                                       | SELENIM CMPS | SE        |
| SULFUR DIOXIDE                           | SO2          | 7446-09-5 |
| OXIDES OF SULFUR (EXPRESSED AS SO2)      | SOX          | SOX       |
| STYRENE                                  | STYRENE      | 100-42-5  |
| STRYENE OXIDE                            | STYRENE OXID | 96-09-3   |
| 2,3,7,8-TETRACHLORODIBENZODIOXIN         | TCDD,2378    | 1746-01-6 |
| 1,1,1-TRICHLOROETHANE                    | TCE,111      | 71-55-6   |
| 1,1,2,2-TETRACHLOROETHANE                | TETCLET,1122 | 79-34-5   |
| TITANIUM TETRACHLORIDE                   | TITAN TETCL  | 7550-45-0 |
| TOTAL ORGANIC COMPOUNDS (TOC)            | TOC          | TOC       |
| TOTAL ORGANIC GAS                        | TOG          | TOX       |
| 2,4-TOLUENE DIAMINE (2,4-DIAMINOTOLUENE) | TOL DIAMIN24 | 95-80-7   |
| TOLUENE                                  | TOLUENE      | 108-88-3  |
| TOLUENE-2,4-DIISOCYANATE                 | TOLUENE24DII | 584-84-9  |
| O-TOLUIDINE                              | TOLUIDINE,O- | 95-53-4   |
| TOXAPHINE                                | TOXAPHINE    | 8001-35-2 |

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| CHEMICAL NAME              | ABBREVIATION | CAS_NO    |
|----------------------------|--------------|-----------|
| TRICHLOROETHYLENE          | TRICHLORETHY | 79-01-6   |
| 1,2,4-TRICHLOROBENZENE     | TRICLBNZ,124 | 120-82-1  |
| 1,1,2-TRICHLOROETHANE      | TRICLETH,112 | 79-00-5   |
| 2,4,5-TRICHLOROPHENOL      | TRICLPHN,245 | 95-95-4   |
| 2,4,6-TRICHLOROPHENOL      | TRICLPHN,246 | 88-06-2   |
| TRIETHYLAMINE              | TRIETHAMINE  | 121-44-8  |
| TRIFLURALIN                | TRIFLURALIN  | 1582-09-8 |
| 2,2,4-TRIMETHYLPENTANE     | TRIME-PENTAN | 540-84-1  |
| VINYLDENE CHLORIDE         | VINLIDENE CL | 75-35-4   |
| VINYL ACETATE              | VINYL ACETAT | 108-05-4  |
| VINYL BROMIDE              | VINYL BROMID | 593-60-2  |
| VINYL CHLORIDE             | VINYL CHLOR  | 75-01-4   |
| VOLATILE ORGANIC COMPOUNDS | VOC          | VOC       |
| M-XYLENE                   | XYLENE,M     | 108-38-3  |
| O-XYLENE                   | XYLENE,O     | 95-47-6   |
| P-XYLENE                   | XYLENE,P     | 106-42-3  |
| XYLENES (MIXED ISOMERS)    | XYLENES ISO  | 1330-20-7 |
| 1,2-DICHLOROETHANE         | DICHLORETH12 | 107-06-2  |

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| <b>APPENDIX D</b>                            |  |   |
|--|--|---|
| <b>SECTION 112 STANDARDS ADOPTED BY IOWA</b> |  |   |
| <b>SOURCE CATEGORY</b>                       | <b>STATE OF IOWA ADMINISTRATIVE CODE</b> | <b>FEDERAL REGISTER DATE/CITATION</b>   |
| Subpart A General Provisions                 | 23.1(4)"a"                               | 59 FR 12408 3/16/94, 59 FR 62585 12/6/94, 59 FR 4948 1/25/95, 60 FR 33122 6/27/95, 60 FR 45948 9/1/95, 60 FR 64330 12/15/95 |
| Aerospace Manufacturing                      | proposed rule expected final 5/15/96     | 9/1/95<br>60 FR 45948   |
| Gasoline Distribution                        | proposed rule expected final 5/15/96     | 12/14/94<br>59 FR 64303   |
| Marine Vessels                               | to be proposed                           | 9/19/95<br>60 FR 48388  |
| Petroleum Refineries                         | proposed rule expected final 5/15/96     | 8/18/95<br>60 FR 43244  |
| Secondary Lead Smelters                      | proposed rule expected final 5/15/96     | 6/23/95<br>60 FR 32587  |
| Shipbuilding/Repair                          | to be proposed                           | 12/15/95<br>60 FR 64330   |
| Wood Furniture Manufacturing                 | to be proposed                           | 12/7/95<br>60 FR 62930  |
| General Provisions                           | 567 IAC 23.1(4)"a"                       | 3/16/94<br>59 FR 12427  |
| Magnetic Tape                                | 567 IAC 23.1(4)"ae"                      | 12/15/94<br>59 FR 64580   |
| HON  | 567 IAC 23.1(4)<br>"f","g","h","I"       | 4/22/94<br>59 FR 19402  |
| Coke Ovens                                   | 567 IAC 23.1(4)"I"                       | 10/27/93<br>58 FR 57911   |
| Dry Cleaners                                 | 567 IAC 23.1(4)"m"                       | 9/22/93<br>58 FR 49354  |
| Chrome Electroplating                        | 567 IAC 23.1(4)"n"                       | 1/25/95<br>60 FR 4948   |
| Ethylene Oxide Sterilization                 | 567 IAC 23.1(4)"o"                       | 12/6/94<br>59 FR 62589  |
| Industrial Cooling Towers                    | 567 IAC 23.1(4)"q"                       | 9/8/94<br>59 FR 46339   |
| Halogenated Solvent Cleaning                 | 567 IAC 23.1(4)"t"                       | 12/2/94<br>59 FR 61801  |
| Polymers and Resins II                       | 567 IAC 23.1(4)"w"                       | 3/8/95<br>60 FR 12670   |