



Instructions for Completing the Pre-Inspection Questionnaire (PIQ)

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Introduction

The Pre-Inspection Questionnaire (PIQ) is a report administered by the Compliance and Field Operations division of the Bureau of Air Management. The PIQ provides information from any premises in Connecticut that is a source of regulated air pollutants and is scheduled for inspection by a field engineer from the Bureau of Air Management. The field engineer will use this information before and during the inspection to minimize time required to gather records at the premises during the inspection.

Authority for administration of the PIQ is acquired from §22a-174-4(c)(1) of the Regulations of Connecticut State Agencies (RCSA). The PIQ is a compliance tool, in that the field engineer will use the document to verify the premises' compliance with regulations. **An authorized representative of the premises will be required to certify the questionnaire on the last page.**

Retain a copy of the blank form enclosed, the **final completed form** you will submit, and a copy of these instructions for reference purposes. You may use the blank form as a record-keeping tool for tracking your compliance status.

A complete copy of the Regulations of Connecticut State Agencies (RCSA), Title 22a, Section 22a-1 to 22a-200 Abatement of Air Pollution can be found on DEP's website:
<http://www.ct.gov/dep/site/default.asp>
then type "abatement" in the DEP search box

Preparation

To accurately complete the PIQ it will be helpful to have in front of you the following documents:

- 1) These instructions and the actual PIQ form
- 2) The PIQ instructions and form you last filled out;
- 3) A copy of all Material Safety Data Sheets (MSDS) for substances used or stored at the subject premises.

You must retain a copy of all documents submitted to the Department and supporting documentation for a period of at least five (5) years.

A properly completed questionnaire and the on-site availability of the above mentioned documents will save time for your staff during the inspection. The Air Bureau prefers use of this form, but reasonably completed facsimiles are also acceptable, subject to approval by the Air Bureau.

Questions?

If you have any questions or would like a word processing version of the PIQ form (Word 2003 version) contact Mr. Robert Girard at (860) 424-3461 or e-mail robert.girard@ct.gov. Failure to supply information may subject the company to a notice of violation under Section 22a-174-4(c)(1), Record Keeping and Reporting.

Part 1:

General Premises Information

Please fill out as follows:

1. Company Name -- Use your legal corporate name down to the division level for the location of the premises for which the PIQ is being submitted.

2. Premises Address -- Use the address noted under "Location of Equipment" on your permits for equipment for which the PIQ is being submitted. If the company has no permits or registrations, use the most appropriate premises address.

3. Mailing Address -- Indicate the most appropriate mailing address for the company (if different from the premises address).

4. On Site Contact -- Indicate the contact person who is on site at the premises and deals with environmental matters, specifically air pollution concerns. Please also indicate their title.

5. Telephone -- Indicate the phone number for the on site contact as well as their extension, fax number and e-mail address.

6. Corporate Contact --Indicate the individual, if different from the on site contact, who deals with administrative environmental matters. Please also indicate their title.

7. Nature of operation--Short description of activity performed at the premises, primary SIC (Standard Industrial Classification) code, and NAIC (North American Industry Classification) code. The NAIC was instituted in 1997 and is replacing the SIC code. NAIC codes may be obtained on the internet at www.census.gov/epcd/www/naicstab.htm#download.

8. Corporate Name-- Name of the corporation (as listed with the Secretary of State's office) that owns or operates the premises as well as the date purchased, acquired, or occupied.

9. Corporate Address-- Address of the corporation identified in line #8 (if different from the premises address used earlier).

10. Year of data -- Information for the PIQ should be collected from the most recently completed calendar year. Indicate the calendar year of the data being provided.

Part 2: Process Information

In this section, you will provide detailed information about your facility's air pollutant emissions sources except the fuel burning sources. Information for fuel burning sources will be provided in a later section. The attachment of a flow diagram, if available, for a process with many subunits would greatly assist the field engineer in the inspection.

Following are examples of two groups of process equipment that field engineers often find are overlooked when sources complete the PIQ. Please include this equipment in this Process Information section.

1) Metal Plating and Surface Treatment Operations (other than surface coating or printing): Includes, but not limited to equipment used in etching, pickling, acid dipping, electropolishing, electroplating, anodizing, passivating, sandblasting operations and metal cleaning other than degreasing.

Degreasers: Includes, but not limited to: (as defined in RCSA §22a-174-20(1)) 1) A **cold cleaning degreaser** is the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing, or immersion while maintaining the degreasing solvent below its boiling point. A degreasing

solvent “means any volatile organic compound used for metal cleaning” according to RCSA §22a-174-20(1). 2) An **open top vapor degreaser** is the batch process of cleaning and removing soils from metal surfaces by condensing hot degreasing solvent vapor on the colder metal surfaces; 3) A **conveyorized degreaser** is the continuous process of cleaning and removing soils from metal surfaces by operating with either cold or vaporized degreasing solvents. Water based degreasers may be excluded from these definitions.

2) **Site Remediation Equipment:** Includes, but not limited to, all equipment necessary to remediate contaminated soil and water such as primary treatment unit, secondary treatment unit, soil storage and handling areas and fans.

In this Process Information section, do not include equipment such as office equipment, refrigerators, etc., or any other equipment listed in RCSA §22a-174-33(g)(3)(B) that is not the principal function of the company, excluding (g)(3)(B)(v)[aerosol cans], (B)(vi)[HVAC systems], and (B)(ix)[maintenance activities].

The following is an explanation of the column headings:

Emission Unit Number (EMU#)- Facilities that have applied for a Title V Operating Permit or a General Permit to Limit Potential to Emit (GPLPE) have previously associated an EMU number with each source of regulated air pollutants. If this is the case, list the EMU number in this column.

Air Bureau Registration or Permit Number

Please list the Air Bureau registration or permit number for the source if it is registered or permitted (found on the first page of your permit or registration). Use the last four digits from your Air Bureau registration or permit number. Preface registrations with an “R” and permits with a “P”. For example, registration 0127-0331 would become R0331. Sorting by building is preferred to facilitate the inspection. If there is no permit or registration number, show as N0.

Source Description - Provide a brief description of the equipment being used. If you are attaching a flow diagram, feel free to reference parts of that. If a production line is being described that includes multiple emission sources, multiple lines will be needed to describe the production line. Make copies of this page if you will need more than one. For easier reading, please skip a line between sources.

Vent I.D. - If possible use your company’s in-house identification (vent number and/or exhaust fan). You must list all vents that emit air pollutants. However, always use different numbers for different vents or if there is no vent, indicate NONE.

Dates of Installation, Last Modification, and Removal From Service--Provide the date the source was installed (I) and the date the source was last modified (M) according to the “modification” definition in RCSA §22a-174-1. If the source has been permanently shut down or removed from the premises(R), please indicate this date, also.

Primary/Secondary Air Pollution Control System - If there are any air pollution controls, indicate the primary control system on the first line and the secondary control system on the second line. If the same control is used for more than one source, note that it is shared and use the final control vent identification for the vent I.D. for all sources going through this final control.

Typical Daily, Weekly, and Annual Hours of Operation- This section requests an **approximation** of when the source equipment is actually used during the year in hours per day, hours per week, and hours per year. This information must be provided. If after completing this section, you feel the source's operations could be better explained using batch information, please provide this information in the "Notes" section below.

Temperature: - Indicate the highest process temperature in degrees Fahrenheit or degrees Celsius. Be sure to indicate the units.

Input Material - List each input material to each process. Multiple coatings or input materials for a process may be grouped under general coating headings (e.g. coating, thinner, etc.) provided the company attaches a separate list to this PIQ under the chemical and material listing with the individual names of the coatings indicated.

Material Usage--First indicate under "**Peak Daily Usage**" the maximum amount of the material you have actually used in the past during the 24-hour period between midnight one day and midnight the next. Next, indicate under "**Typical Daily Usage**" the amount of the material you typically used during a 24-hour period over the most recent calendar year. Indicate the units as pounds (lbs.), gallons (gal), or tons (ton) per day. This information must be provided. Use the "Notes" section at the bottom of the form to explain batch information.

Part 3:

Chemical and Material Listing

Chemical/Material--List each chemical/material used on the premises. Do not include materials for equipment such as office equipment, refrigerators, etc or any other equipment listed in RCSA §22a-174-33(g)(3)(B), excluding (g)(3)(B)(v), (vi), and (ix), that is not the principal function of the

company. Also do not include boiler water treatment chemicals that do not contain VOCs, any of the HAPS listed in tables 29-1, 29-2, or 29-3 of R.C.S.A. 22a-174-29, or any of the 188 C.A.A. Section 112 HAPs listed on Part 5.2 of the PIQ form.

Purpose--Indicate the purpose for which the material is used.

Annual Usage - Indicate the actual annual usage for each material and the unit of measurement.

Storage Tank I.D. - Use only to identify storage tanks for the material with a capacity of over 250 gallons. Please use A for above ground tanks and B for below ground tanks.

Storage Tank Capacity/Units - For any tank previously identified, indicate the individual storage container size and the unit of measurement.

Number of Tanks - If more than one tank of identical size storing the same chemical/material, specify the number of tanks.

Submerged Fill Pipe - Indicate if there is a submerged fill line to the bottom of the tank (Y=Yes, N=No)

Part 4:

Fuel Burning Sources

Emission Unit Number (EMU#)- Facilities that have applied for a Title V Operating Permit or a General Permit to Limit Potential to Emit (GPLPE) have previously associated an EMU number with each source of regulated air pollutants. If this is the case, list the EMU number in this column. If the source has more than one fuel type, leave spaces to include each fuel type for that emission unit.

Air Bureau Registration or Permit Number

Please list the Air Bureau registration or permit number for the source if it is registered or permitted (found on the first page of your permit or registration.) Use the last four digits from your Air Bureau registration or permit number. Preface registrations with an “R” and permits with a “P”. For example, registration 0127-0331 would become R0331. Sorting by building is preferred to facilitate the inspection. If there is no permit, or registration number, show as NO.

Source Description - Identify the boiler, furnace, incinerator etc. by make, model, and serial number. (e.g. - Cleaver Brooks, 600-250, AH3742; HB Smith, 460-12, 8743CC).

Fuel Type -- Indicate the kind of fuel burned in as specific a manner as possible, e.g. #6 oil, natural gas, waste oil, propane, etc. If multiple fuel types exist, use one line for each fuel.

Dates of Installation, Last Modification, and Removal from Service Indicate the date the piece of fuel burning equipment was originally installed (I) and last modified (M) according to the “modification” definition in RCSA §22a-174-1. If the equipment has been permanently shut down or removed from the premises(R), please indicate this date, also.

Max Fuel Burning Design --Indicate the maximum heat input capacity of the main piece of equipment, such as the maximum heat input a boiler can handle, not necessarily the maximum burner capacity. Be sure to indicate units, e.g. gallons per hour (gph) or cubic feet per hour (cfh).

Sulfur Content (% by weight) -- Indicate the amount of sulfur contained in the fuel as a percentage of the fuel by weight. The fuel supplier is required to supply this information.

Max Burner Rating - The maximum burner(s) rating of each source in gallons per hour (gph) or cubic feet per hour (cfh).

Annual Usage - Indicate the annual amount used for each fuel in gallons, cubic feet, or tons per year.

Primary/Secondary Air Pollution Control System - If there are any air pollution controls, indicate the primary control system on the first line and the secondary control system on the second line. If the same control is used for more than one source, note that it is shared. Use the final control vent identification for the vent I.D. for all sources going through this final control.

Continuous Emission Monitor (CEM)-- Indicate (yes or no) if a Continuous Emission Monitor (CEM) is present. If yes, indicate the pollutant(s) being monitored.

Date of Last DEP Approved Stack Test Program /Pollutant(s) Tested--If a DEP-approved stack test program has been performed, list the most recent dates and the pollutant(s) tested.

Part 5:

Hazardous Air Pollutants Used on the Premises

5.1: R.C.S.A. § 22a-174-29, Table 29-1 Hazardous Air Pollutants (HAPs)

(Connecticut list)-- Listed on the form are all HAPs from R.C.S.A. §22a-174-29, Table 29-1 whose actual emission concentration must be below the maximum allowable stack concentration as defined in R.C.S.A. §22a-174-29. Indicate with a check mark every listed chemical which is used on site.

5.2: Section 112 Hazardous Air Pollutants (federal list)--Listed are the 188 Hazardous Air Pollutants from Section 112 of the Clean Air Act Amendments of 1990. This list of HAPs is used to determine Title V and Maximum Achievable Control Technology (MACT) applicability. Please check those pollutants used or emitted on site.

5.3: Check this box if none of the chemicals found in Parts 5.1 or 5.2 are used on the premises.

Part 6:

R.C.S.A. 22a-174-29 Toxics Information

This section must be filled out for each **table 29-1** hazardous air pollutant indicated in the checklist in Part 5.1. The information provided helps the field engineer calculate the Maximum Allowable Stack Concentration (MASC) for the table 29-1 hazardous air pollutant. (Although not a part of this PIQ, individual sources of air pollution that required a New Source Review permit after March 1, 1986 must always be in compliance with hazardous air pollutants from tables 29-2 and 29-3, also from RCOSA 22a-174-3(m). An explanation of the column headings and a sample MASC calculation follow:

Emission Unit Number (EMU#)- Facilities that have applied for a Title V Operating Permit or a General Permit to Limit Potential to Emit (GPLPE) have previously associated an EMU number with each source of regulated air pollutants. If this is the case, list the EMU number in this column.

Air Bureau Registration or Permit Number
Please list the Air Bureau registration or permit number for the source if it is registered or permitted (found on the first page of your permit or registration.) Use the last four digits from your Air Bureau registration or permit number. Preface registrations with an "R" and permits with a "P". For example, registration 0127-0331 would become R0331. Sorting by building is preferred to facilitate the inspection. If there is no EMU, permit, or registration number, show as N0.

Source Description - Provide a brief description of the equipment being used. If there are identical pieces of equipment, use an

additional entry to show there are more than one by using #1, #2, etc., such as spray booth #1, spray booth #2.

Vent I.D. - If possible indicate your company's in-house identification (vent number and/or exhaust fan). However, always use different numbers for different vents or if there is no vent, indicate NONE.

Stack Height - Indicate the height of the stack or vent from which the HAP is emitted in feet **from ground level**.

Property Line Distance - Indicate the horizontal distance in feet from the discharge point of the stack to the **nearest** property line.

Exhaust Gas Flow Rate - The actual airflow rate in cubic feet per minute. If a stack test program has been conducted, use numbers from that test program.

Chemical Name/CAS Number - Provide the explicit chemical name and chemical abstract number from Part 5.1.

DEP Comment - *DEP use only*.

Batch Time - Indicate time for batch in hours. Use only if run as a batch process.

8-hr HLV - *DEP use only*.

Percent Control - If the source is controlled, show the percent (%) of emissions controlled for this chemical. (capture efficiency x destruction efficiency)

Method of Data- Indicate where the data came from: stack test, CEM (continuous emissions monitoring), AP-42 (an EPA listing of emission factors), material balance, or estimate.

Actual Emission Rate: (lb/hr)--Indicate the actual post control emission rate of the hazardous air pollutant in lb/hr.

Maximum Allowable Stack Concentration

(ug/m³ or ppm) - *DEP use only*. The maximum concentration allowed from the stack in ug/m³ or ppm.

Maximum Allowable Emission Rate (lbs/hr or tpy) - *DEP use only*. The maximum

emission rate allowed from the stack in pounds per hour (lbs/hr) or tons per year (tpy).

Sample MASC Calculation

In the following example, we will check to see that the Actual Stack Concentration (ASC) of perchloroethylene emitted from a dry cleaning facility does not exceed the Maximum Allowable Stack Concentration (MASC).

R.C.S.A. §22a-174-29(c)(1)(A) provides the formula to calculate the MASC of a hazardous air pollutant found in table 29-1 (for discharge points 20 meters or less above the ground) as:

$$\text{MASC}(\text{ug}/\text{m}^3) = \frac{0.885\text{HLV} (x + 1.08v^{0.64})^{1.56}}{v}$$

where: **HLV** = hazard limiting value from table 29-1

x = property line distance from discharge point or 10 meters, whichever is greater

v = average actual flow rate in actual cubic meters per second (m³/s)

Consider a dry cleaning facility with the following characteristics:

Cleaning solvent = perchloroethylene

Stack tested emission rate = 0.47 lb perc./hr

Stack height = 25 ft = 7.62 m (less than 20 m, OK to use formula R.C.S.A. §22a-174-29(c)(1)(A) vs (B))

Horizontal distance from discharge point to property line distance = 29 ft = 8.84 m (use 10 m)

Exhaust gas flow rate = 1515 acfm = 0.715 m³/s

Continuous emission period = 45 minutes over an 8-hr period (0.75 hr)

HLV (8-hour) for perchloroethylene (from table 29-1) = 1700 ug/m³

Substituting these values into the MASC formula, we get:

$$\begin{aligned} \text{MASC} &= \frac{0.885(1700) (10 + 1.08(0.715)^{0.64})^{1.56}}{0.715} \\ &= 87,033.6 \text{ ug}/\text{m}^3 \end{aligned}$$

Because the continuous emissions occur for 45 minutes over an 8-hour period, the Adjustment Factor found in R.C.S.A. §22a-174-29(i) may be used. The Adjustment Factor formula is:

$$\text{Adjustment Factor} = 5 - 4((T - 0.5)/7.5)$$

Where: **T** = Number of hours the source is in continuous operation.

Substituting the 45 minutes (0.75 hours) into the formula we get:

$$\begin{aligned} \text{Adjustment Factor} &= 5 - 4((0.75 - 0.5)/7.5) \\ &= 4.87 \end{aligned}$$

Multiplying this Adjustment Factor by the MASC calculated earlier, we get:

$$4.87 \times 87,033.6 = 423,853.6 \text{ ug}/\text{m}^3$$

Now we must calculate the actual stack concentration of perchloroethylene from the dry cleaning facility's stack. In this hypothetical situation, the dry cleaning facility has determined through stack testing that the hourly emission rate for perchloroethylene from the stack is 0.47 lb perc/hr.

Now convert lb/hr to ug/m³ using the flow rate:

$$\frac{0.47 \text{ lb perc.}}{\text{hr}} \times \frac{\text{min}}{1515 \text{ ft}^3} \times \frac{1 \text{ hr}}{60 \text{ min}} \times$$

$$\frac{453.59 \times 10^6 \text{ ug}}{\text{lb}} \times \frac{\text{ft}^3}{0.028317 \text{ m}^3} = \frac{82823.4 \text{ ug}}{\text{m}^3}$$

Because the actual stack concentration of 82823.4 ug/m³ of perchloroethylene is below the maximum allowable stack concentration of 423,853.6 ug/m³, the emissions of perchloroethylene are in compliance with R.C.S.A. §22a-174-29.

Part 7: Certification Page

Please have an authorized individual from the company as defined in R.C.S.A. 22a-174-2a sign and date the last page.

Completed PIQs—Please send completed questionnaires to:

Robert Girard
CTDEP 5th Floor
Compliance Analysis and Coordination Unit
79 Elm Street
Hartford, CT 06106-5127

Appendix A--Text of the Regulations of Connecticut State Agencies (R.C.S.A.) Cited in the PIQ Instructions

Sec. 22a-174-1. Definitions.

(67) "Modification" or "modified source" means with respect to a stationary source, any physical change or change in the method of operation that would result in an exceedance of the allowable emissions of any individual air pollutant, any increase in the maximum capacity, or any potential emissions of any individual air pollutant not previously emitted, except that:

- (A) Routine maintenance, repair or replacement at a stationary source shall not be considered a physical change; and
- (B) The following shall not be considered a change in the method of operation:
 - (i) any increase in the production rate, if such increase does not exceed the operating design capacity of the affected facility and such increase does not cause or allow an exceedance of the rates or emission limits authorized by a permit, order, or judgement for such source, or
 - (ii) any increase in hours of operation and such increase does not cause or allow an exceedance of the rates or emission limits authorized by a permit, order, or judgement for such source.

Sec. 22a-174-4. Source monitoring, record keeping, reporting and authorization of inspection of air pollution sources.

(c) Record Keeping and Reporting.

(c)(1) The Commissioner may require the submission of any records or reports of monitoring data and other information as he deems necessary to fulfill the purpose and policies contained in these regulations. Such record keeping and reporting may be required of any point source or any indirect source of air pollution. Records and reports required by the Commissioner concerning air pollutants, fuels, and operational information shall be recorded, compiled, and submitted on forms furnished or prescribed by the Commissioner. And shall be signed or verified in writing by a ranking corporate officer or managing official with offices located in the state. Such signature shall constitute personal affirmation that such officer has exercised due diligence in verifying the accuracy of the record or report and that, to the best of his knowledge and belief, the record or report is true complete, and complies fully with applicable state requirements. Such signature shall subject the responsible official to liability for false or misleading statements.

Section 22a-174-29. "Hazardous Air Pollutants"

(a) "Hazard Limiting Values" and "Ambient Air Quality Standards"

Revised 09/02/2009

(a)(1) "Hazard Limiting Values" (HLV)'s for "Hazardous Air Pollutants" for 8-hour and 30-minute averaging times are listed in Tables 29-1, 29-2, and 29-3. "Ambient Air Quality Standards" (AAQS) are listed in section 22a-174-24.

(a)(2) For a "hazardous air pollutant" or other "air pollutant" for which either a "HLV" or an "AAQS" has not yet been established by the "Commissioner", the "Commissioner" may request the Commissioner of Health Services to propose changes to Tables 29-1, 29-2 or 29-3 or to section 22a-174-24 to provide supporting documentation for his selection, and to submit it for review by the "Hazardous Air Pollutant Advisory Panel" within ninety (90) days of receipt of the request of the "Commissioner."

(a)(3) The "Commissioner" shall request the "Panel" to review the proposal and supporting documentation and to make a recommendation to the "Commissioner" to approve, modify or decline to accept the proposal within ninety (90) days of receipt. Within sixty (60) days of receipt of the recommendation of the "Panel", the "Commissioner" shall announce a hearing for a new "HLV" to be included in Tables 29-1, 29-2, or 29-3 or "AAQS" for section 22a-174-24.

(b) "Maximum Allowable Stack Concentrations"

(b)(1) On or after October 1, 1986, no "person" shall cause or permit the "emission" of any "hazardous air pollutant" listed in Table 29-1 from any "stationary source" at a concentration at the "discharge point" in excess of the "maximum allowable stack concentration", unless the "stationary source" is operating in accordance with the terms of an order or permit of the "Commissioner" specifically allowing the continued operation of the "stationary source" in violation of this subdivision while coming into compliance or the "source" is in compliance with the provisions of subdivision 22a-174-29(d)(3).

(b)(2) No person shall cause or permit the emission of any "hazardous air pollutant" from any "resources recovery facility", or "incinerator" or from any "stationary source" or "modification" for which the person applies for and obtains a permit under section 22a-174-3 on or after July 1, 1986 at a concentration at the "discharge point" in excess of the "maximum allowable stack concentration" unless the source is in compliance with the provisions of subdivision (d)(3) of this section. The "Commissioner" shall not apply the provisions of this subdivision to the owner or "operator" of any "stationary source" who applied for a "permit to construct" under section 22a-174-3 prior to March 1, 1986 and received a notice of a complete application prior to July 1, 1986 or to any other owner or "operator" who received a "permit to construct" under these regulations prior to July 1, 1986. Notwithstanding the foregoing, all "resources recovery facilities" and all "incinerators" shall meet the standards of this subdivision for all "hazardous air pollutants".

(b)(3) If the owner or "operator" of a "stationary source" which emits or may emit a "hazardous air pollutant" is in compliance with the "MASC" at the "discharge point" of that source, but the "Commissioner" determines, through ambient monitoring, that the "HLV" is exceeded, then the "Commissioner" may require that the concentration of the "hazardous air pollutant" at the "discharge point" be further reduced.

(b)(4) The owner or "operator" of any "stationary source" or "modification" not subject to the provisions of subdivision 22a-174-29(b)(2) which emits or may emit a "hazardous air pollutant" shall comply with the requirements of subdivision 22a-174-29(b)(2) if the "Commissioner" determines, through ambient monitoring, that the "HLV" is exceeded as a result of the "emission" from that "stationary source".

(b)(5) For the purposes of subdivisions 22a-174-29(b)(3) and 22a-174-29(b)(4), any person who performs ambient air monitoring shall use methods and procedures approved by the "Commissioner".

(c) Determination of "Maximum Allowable Stack Concentrations"

(c)(1) The "maximum allowable stack concentration" of a "hazardous air pollutant" (in micrograms per cubic meter or parts per million) at the "discharge point" of a "stationary source" shall be determined as follows:

(A) If the "discharge point" is twenty (20) meters or less measured vertically from the ground elevation at the "discharge point", the "MASC" shall be:

$$\frac{0.885 \text{ HLV } (x + 1.08V^{.64})^{1.56}}{V}$$

Where "HLV" is the applicable "hazard limiting value" (in either micrograms per cubic meter or parts per million for 8-hour and 30-minute averaging times), "V" is the average actual flow rate (in actual cubic meters per second) from the "discharge point", and "X" is ten (10) meters, or the distance from the "discharge point" to the closest property line, whichever is greater.

(B) If the "discharge point" is more than twenty (20) meters measured vertically from the ground elevation at the "discharge point", the "maximum allowable stack concentration" ("MASC") shall be:

$$\frac{0.885 \text{ HLV } (X + 1.08V^{0.64})^{1.56} \exp[10.33(H-20)^2(X + 1.08V^{0.64})^{-1.56}]}{V}$$

Where "HLV" is the applicable "hazard limiting value" (in micrograms per cubic meter or parts per million) for 8-hour and 30-minute averaging times, "V" is the average actual flow rate (in actual cubic meters per second) from the "discharge point", "H" is the height (in meters) of the "discharge point", measured vertically from the ground elevation at the "discharge point" and "X" is the greater of the following distances:

(i) ten (10) meters

- (ii) the closest distance, in meters, from the "discharge point" to the property line, or
- (iii) the distance, in meters, determined by:

$$4.47(H - 20)^{1.28}$$

Where "H" is the height (in meters) of the "discharge point" measured vertically from the ground elevation at the discharge point.

(c)(2) For the purposes of this subsection, in determining the distance from the "discharge point" to the property line the "Commissioner" may allow consideration for any "watercourse" adjacent to the property in question. The "Commissioner" may allow the use of the opposite shore in determining the closest distance to the property line.

(d) "Ambient Air Quality Standards"

(d)(1) The provisions of this subsection apply to any "stationary source" which emits an "air pollutant for which there is an "ambient air quality standard" ("AAQS") found in section 22a-174-24 except for any "criteria air pollutant" OTHER THAN LEAD.

(d)(2) If the "source" complies with the "MASC" and there is an applicable "AAQS", then the owner or "operator" shall not cause or exacerbate a violation of the applicable "AAQS" unless the impact of the source is less than significant as determined in subsection 22a-174-3(c).

(d)(3) If the "source" does not comply with the "MASC" and there is an applicable "AAQS", then the owner or "operator" shall:

- (A) install and use "Best Available Control Technology" for the applicable "hazardous air pollutant"; and
- (B) not cause an impact in excess of the applicable "AAQS" if such impact is significant as determined in subsection 22a-174-3(c).

(d)(4) Upon the request of the "Commissioner", the owner or "operator" of any "stationary source" shall make and submit to the "Commissioner", for his approval, a "BACT" determination for each "hazardous air pollutant" for which an "AAQS" has been set, as required by the "Commissioner", including costs estimates of all control options as may be specified by the "Commissioner".

(d)(5) For the purposes of this subsection, the "Commissioner" shall allow the use of only air quality models, data bases or other requirements approved by the "Commissioner" prior to the determination of compliance with the "AAQS".

(e) Sampling for "Hazardous Air Pollutants".

(e)(1) Testing to determine concentrations of "hazardous air pollutants" in the "ambient air" contiguous to a "source" may be required if the "Commissioner" determines that the operation of a "source" might reasonably be expected to cause an exceedance of an applicable "HLV" or "AAQS."

(e)(2) In addition to any testing required by subdivision (e)(2) of section 22a-174-5, testing to determine concentrations of "hazardous air pollutants" at "discharge points" of "sources" may be required by the "Commissioner" if:

- (A) an exceedance of a "HLV" with an 8-hour averaging time is observed; or
- (B) two (2) or more exceedances of a "HLV" with a 30-minute averaging time are observed within two (2) non-overlapping 8-hour periods within any seven (7)-day period; or
- (C) the "source" is required to meet the requirements of subdivision (b)(2) of this section; or
- (D) the emissions from a "source" are suspected of causing a violation of an "AAQS"; or
- (E) there is an enforcement action for violation of section 22a-174-20 or 22a-174-23; or
- (F) the "source" is suspected of emitting a "hazardous air pollutant" listed in Table 29-1.

(e)(3) Testing to determine concentrations of "hazardous air pollutants" at either "discharge points" of "stationary sources" or in the "ambient air" shall be conducted by the "Commissioner", the "Commissioner's" authorized representative or by persons qualified by training or experience in the field of sampling emissions from air pollution sources or in the "ambient air". All sampling, emissions testing and laboratory analyses shall be done using procedures and techniques approved by the "Commissioner" prior to the commencement of such testing.

(e)(4) In addition to the provisions of subdivision 22a-174-29(e)(1), the department shall perform testing for dioxin emissions in the ambient air in accordance with the requirements of this subdivision. The department shall perform the following tests in the area of any resources recovery facility. The tests shall be representative of conditions existing prior to the commencement of operation and representative of conditions existing after the issuance of the permit to operate.

- (A) For tests representative of conditions existing prior to the commencement of operation for each subject resources recovery facility the Commissioner shall analyze at a minimum a total of eight (8) samples. At a minimum, such tests shall

consist of the collection of samples at four locations deemed representative by the Commissioner during four distinct time periods and the analysis of two samples for each time period for a total of eight samples. The Commissioner shall make every effort to perform such testing once per calendar quarter prior to the commencement of operation.

- (B) For tests representative of conditions existing after the issuance of the permit to operate under subsection 22a-174-3(f) for each subject resources recovery facility the Commissioner shall analyze at a minimum a total of eight (8) samples. At a minimum, such tests shall consist of the collection of samples at four locations deemed representative by the Commissioner during four distinct time periods and the analysis of two representative samples per calendar quarter for the first year following issuance of the permit to operate under subsection 22a-174-3(f). Based upon an analysis of the ambient data, results of stack tests, data from the continuous emission monitors and other pertinent information, the Commissioner shall determine a representative ambient sampling program for subsequent years. The Commissioner shall provide notice of this determination to the chief elected official of each town participating in the subject resources recovery facility.

(f) Reporting Requirements

(f)(1) The owner or "operator" of any "stationary source" shall, upon written notice by the "Commissioner," supply him with information, for those time periods specified, concerning the usage of any substances listed in Table 29-1, 29-2, or 29-3 or the emissions of such substances into the ambient air.

(f)(2) Information required in subdivision (f)(1) shall be provided on forms issued for this purpose by the "Commissioner."

(f)(3) If the "Commissioner" deems that emissions of a "hazardous air pollutant" from a "stationary source" are likely to result in a severe and imminent health hazard, information required in subdivision (f)(1) shall be submitted by the owner or "operator" of the "stationary source" as soon as possible but not later than forty-eight (48) hours after receiving written notice from the "Commissioner." Nothing in this subdivision shall prevent the "Commissioner" from taking action in accordance with the provisions of Sec. 22a-181 C.G.S.

(f)(4) Except as provided in subdivision (f)(3), such information required in subdivision (f)(2) shall be provided by the owner or "operator" of the "stationary source" within ninety (90) days of written notice by the "Commissioner."

(g)Permits to operate a "stationary source" ordered to comply with any of the provisions of this section.

(g)(1) The "Commissioner" may require the owner or "operator" of a "stationary source" to obtain a permit to operate if he is found by the "Commissioner" not to comply with any of the provisions of subsection (b).

(h) Objectionable odors and compliance with other regulations

(h)(1) Compliance with this section by a "stationary source" does not in any manner relieve the owner or "operator" of the responsibility to comply with the provisions of section 22a-174-23 or any other section of these regulations.

(i) Adjustments to the MASC for Time Periods Less Than 8 Hours.

Notwithstanding the provisions of subsection (c), the Commissioner may allow an adjustment to the MASC for sources which emit continuously for a period of more than thirty (30) minutes but less than eight (8) hours by multiplying the MASC determined under subsection (c) by the following factor:

$$\text{Adjustment Factor} = 5 - 4((T - 0.5)/7.5)$$

Where T = Number of hours the source is in continuous operation.

Section 22a-174-2a. Procedural requirements for new source review and Title V permitting

(a) Signatory Responsibilities

(1) Any document, such as a permit application, report or certification, submitted to the commissioner shall be signed by any of the following individuals, as authorized in accordance with subdivision (2) of this subsection, if applicable:

- (A) For an individual or sole proprietorship: by the individual or proprietor, respectively;
- (B) For a corporation: by any officer, employee, or representative of a corporation;
- (C) For a partnership: by a general partner;
- (D) For a municipality: by the person authorized by charter or resolution of the board of selectmen or town council or other governing body;
- (E) For a federal entity: by the principal executive officer, statutorily authorized official, or by a federal employee or any other representative who has received legal delegation of authority. For the purpose of this subsection, a principal executive officer of a federal agency or department

includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency or department; or

- (F) For a state entity: by the statutorily authorized official or by a state employee or any other representative who has received legal delegation of authority.

(2) An officer, employee, or representative of a corporation, an employee or representative of a municipality, state or federal entity, or any other government or quasi-public entity shall be authorized as follows:

(A) For a corporation:

- (i) authorization is made in writing by certified resolution of the board of directors on forms prescribed by the commissioner,
- (ii) the authorization specifies an individual having responsibility for the overall operation of the regulated stationary source or premises, such as the plant manager, operator, superintendent, or an individual having overall responsibility for environmental matters for the company, and
- (iii) the written authorization is submitted to the commissioner prior to submitting, or together with, any documents or other information to be signed by the authorized representative;

(B) For a municipality: a certified copy of a governing body resolution and an incumbency statement is submitted to the commissioner prior to submitting or together with any documents or other information to be signed by the authorized representative;

(C) For a state or federal entity: if the authorized representative is not statutorily authorized to submit the documents, then a certified copy of the delegation of authority is submitted to the commissioner prior to submitting or together with any documents or other information to be signed by the authorized representative; or

(D) For any other governmental or quasi-public entity: a copy of the documentation sufficient to satisfy the commissioner that the signatory is legally authorized to sign any document submitted to the commissioner is submitted to the commissioner prior to submitting or together with any documents or other information to be signed by the authorized representative;

(3) An application shall be considered insufficient by the commissioner unless the applicant provides all required signatures and supporting documentation.

(4) If a different individual is assigned or has assumed the signatory responsibilities, a new authorization satisfying the requirements of this subsection shall be submitted to the commissioner prior to or together with the submission of any documents or other information signed by the authorized representative.

(5) Notwithstanding the requirements of section 22a-3a-5(a)(2) of the Regulations of Connecticut State Agencies, where a permit application, permit or other documentation requires a certification, the appropriate individual as specified in this subsection, and the individual or individuals responsible for actually preparing any document to which the certification applies, shall examine and be familiar with the information submitted in the document and all attachments thereto, and shall make inquiry of those individuals responsible for obtaining the information to determine that the information is true, accurate, and complete, and each shall certify in writing as follows:

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute.”

(6) Notwithstanding subdivisions (1)(B) or (2)(A)(ii) of this subsection an individual having overall responsibility for environmental matters for a Title V source shall not sign Title V permit applications or Title V associated certifications unless such individual has responsibility for the overall operation of the Title V source

22a-174-33(g)(3)(B) Any of the following items or activities which are not the principal function of such Title V source:

- (i) office equipment, including but not limited to copiers, facsimile and communication equipment, and computer equipment;
- (ii) grills, ovens, stoves, refrigerators, vending machines and other restaurant-style food preparation or storage equipment;
- (iii) lavatory vents, hand dryers, and noncommercial clothes dryers, not including dry cleaning machinery;
- (iv) garbage compactors and waste barrels;
- (v) aerosol spray cans;
- (vi) heating, air conditioning, and ventilation systems which do not remove air contaminants generated by or released from process or fuel burning equipment and which are separate from such equipment;
- (vii) routine housekeeping activities such as painting buildings, roofing, and paving parking lots;
- (viii) all clerical and janitorial activities;
- (ix) maintenance activities such as vehicle repair, brazing, soldering and welding equipment, carpentry shops, electrical charging stations, grinding and

polishing operations maintenance shop vents, miscellaneous non-production surface cleaning, preparation and painting operations; and

- (x) space heaters which can reasonably be carried by one person by hand.

TABLE 29-1

"HAZARDOUS AIR POLLUTANT"	(ug/m ³)	VOLUMETRIC UNITS* "CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
			8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
2-Acetylamino fluorene.....		53-96-3	---	---	---	---
Acrylonitrile.....		107-13-1	22	110	0.01	0.05
Aflatoxins.....		83219-44-7	---	---	---	---
		83219-45-8	---	---	---	---
4-Aminodiphenyl.....		92-67-1	---	---	---	---
Arsenic & compounds (as As).....		7440-38-2	0.05	0.25	---	---
Arsenic pentoxide.....		1303-28-2	---	---	---	---
Arsine.....		7784-42-1	1	5	0.25ppbv	1.25ppbv
Asbestos**.....		1332-21-4	---	---	---	---
Auramine.....		2465-27-2	---	---	---	---
Azathioprine.....		446-86-6	---	---	---	---
Benz(a)pyrene***.....		50-32-8	---	---	---	---
Benzene.....		71-43-2150	750	0.05	0.25	
Benzidine.....		92-87-5	---	---	---	---
Beryllium.....		7440-41-7	0.01	0.05	---	---
Beryllium oxide.....		1304-56-9	---	---	---	---
Beryllium sulfate.....		13510-49-1	---	---	---	---
Chlorambucil.....		305-03-3	---	---	---	---
		---	---	---	---	---
Chlordane.....		57-74-9	2.5	12.5	---	---
Chlorinated camphene.....		8001-35-2	2.5	12.5	---	---
Chlornaphthazine.....		494-03-1	---	---	---	---
Chlorobenzilate.....		510-15-4	---	---	---	---
Chloroform.....		67-66-3	250	1,250	0.05	0.25
bis-Chloromethyl ether.....		542-88-1	0.015	0.075	5.pptv	25.pptv
Chloromethyl methyl ether.....		107-30-2	---	---	---	---

* Volumetric units are in parts per million by volume, unless shown as parts per billion by volume (ppbv) or parts per trillion by volume (pptv).

** The "HLV" for asbestos (all forms, including amosite, chrysotile, crocidolite, tremolite and fibrous talc) is 500 fibers, of a length of 5 micrometers or more, per cubic meter (8-hour average) and 2,500 fibers, of a length of 5 micrometers or more, per cubic meter (30-min average).

*** See Polycyclic Aromatic Hydrocarbons

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-1, Continued

"HAZARDOUS AIR POLLUTANT" (ug/m ³)	VOLUMETRIC UNITS "CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Chromic acid and chromates (as Cr).....	---	0.25	1.25	---	---
Chromite ore processing (chromate), as Cr.....	---	0.25	1.25	---	---
Chromium, metal.....	7440-47-3	2.5	12.5	---	---
Coal tar pitch volatiles.....	8007-45-2	1	5	---	---
Coke oven emissions.....	---	---	---	---	---
Cyclophosphamide.....	50-18-0	---	---	---	---
Dibromochloropropane.....	96-12-8	0.05	0.25	---	---
3,3'-Dichlorobenzidine.....	91-94-1	---	---	---	---
1,2-Dichloroethane.....	107-06-2	20	100	5.ppbv	25.ppbv
Diethylstilboestriol.....	390II-86-4	---	---	---	---
Diethyl sulfate	64-67-5	---	---	---	---
4-Dimethylaminoazobenzene.....	60-II-7	---	---	---	---
Dimethyl sulfate.....	77-78-1	2.5	12.5	0.5 ppbv	2.5 ppbv
Dioxane, technical grade.....	123-91-1	450	2,250	0.125	0.625
Estrogens.....	---	---	---	---	---
Ethylene dichloride.....	107-06-2	20	100	5.ppbv	25.ppbv
Heptachlor.....	76-44-8	2.5	12.5	---	---
Hexachloroethane.....	67-72-1	50	250	5.ppbv	25.ppbv
Kepone.....	143-50-0	---	---	---	---
Melphalan.....	148-82-3	---	---	---	---
4,4'-Methylene bis (2-chloraniline).....	101-14-4	0.015	0.075	---	---
MOCA.....	101-14-4	0.015	0.075	---	---
Morpholine.....	110-91-8	350	1.750	0.1	0.5
Mustard gas.....	505-60-2	---	---	---	---
Myleran.....	55-98-1	---	---	---	---
beta-Napthylamine.....	91-59-8	---	---	---	---
Nickel carbonyl, as Ni.....	13463-39-3	1.75	8.75	0.25ppbv	1.25 ppbv
Nickel (metal).....	7440-02-0	5	25	---	---
Nickel, soluble compounds (as Ni)*.....	---	0.075	0.375	---	---

* Carcinogens

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date

TABLE 29-1, Continued

"HAZARDOUS AIR POLLUTANT"	(ug/m ³)	VOLUMETRIC UNITS "CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
			8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Nickel sulfide.....		12035-72-2	---	---	---	---
Nickel sulfide roasting, fume.....		---	---	---	---	---
and dust (as Ni).....		---	5	25	---	---
4-Nitrodiphenyl.....		92-93-3	---	---	---	---
Nitrogen mustard.....		55-86-7	---	---	---	---
n-Nitrosodimethylamine.....		62-75-9	---	---	---	---
Oxymetholone.....		434-07-1	---	---	---	---
Perchloroethylene**.....		127-18-4	1,700	8,500	0.25	1.25
Phenacetin.....		62-44-2	---	---	---	---
Polynuclear aromatic hydrocarbons (PAH).....		50-32-8	0.1*	0.5*	---	---
beta-Propiolactone.....		57-57-8	7.5	37.5	2.5 ppbv	12.5 ppbv
1,1,2-Tetrachloroethane.....		79-34-5	34.4	172	5.ppbv	25.ppbv
Thorium dioxide.....		1314-20-1	---	---	---	---
o-Toluidine.....		95-53-4	45	225	0.01	0.5
Toxaphene.....		8001-35-2	2.5	12.5	---	---
Treosulfan.....		299-75-2	---	---	---	---
1,1,2-Trichloroethane.....		79-00-5	225	1,125	0.05	0.25
Trichloroethylene.....		79-01-6	1,350	6,750	0.25	1.25
2,4,6- Trichlorophenol.....		88-06-2	---	---	---	---
Vinyl chloride.....		75-01-4	50	250	0.025	0.125

* Benzene-soluble fraction

** Perchloroethylene has been placed in Group I provisionally, pending further research by the Department of Health Services and the "Hazardous Air Pollutant Review Panel".

Note: Dashed lines indicate that no hazard limiting value has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date

TABLE 29-2

"HAZARD LIMITING VALUE" ("HLV")

<u>“HAZARDOUS AIR POLLUTANT”</u>	<u>“CAS NUMBER”</u>	<u>(ug/m³)</u>		<u>VOLUMETRIC UNITS*</u>	
		<u>8-HOUR</u>	<u>30-MINUTE</u>	<u>8-HOUR</u>	<u>30-MINUTE</u>
Actinomycin D.....	1402-38-6	---	---	---	---
Adriamycin.....	23214-92-8	---	---	---	---
Aldrin.....	309-00-2	1.5	7.5	---	---
Allyl glycidyl ether.....	106-92-3	220	1,100	0.05	0.25
2-Aminoanthraquinone.....	117-79-3	---	---	---	---
1-Amino-2-methylantraquinone.....	82-28-0	---	---	---	---
3-Amino 1,2,4-triazole (amitrole).....	61-82-5	---	---	---	---
o-Anisidine.....	29191-52-4	5	25	1.ppbv	5.ppbv
Antimony trioxide, handling & use (as Sb).....	1309-64-4	5	25	---	---
Antimony trioxide production (as Sb).....	1309-64-4	5	25	---	---
Aramite.....	140-57-8	---	---	---	---
Arsenic trioxide production (as As).....	1327-53-3	0.25	1.25	---	---
Benz(a)anthracene.....	56-55-3	---	---	---	---
Benzo(b)fluoranthene.....	205-99-2	---	---	---	---
Benzotrichloride.....	98-07-7	---	---	---	---
Brominated biphenyls.....					
Butadiene (1,3-butadiene).....	106-99-0	22,000	110,000	10	50
n-Butyl glycidyl ether (BGE).....	2426-08-6	1,350	6,750	0.25	1.25
Cadmium.....	7440-43-9	0.4	2.0	---	---
Cadmium dust & salts (as Cd).....	7440-43-9	0.4	2.0	---	---
Cadmium oxide fume (as Cd).....	1306-19-0	1.0	5.0	---	---
Cadmium sulfate.....	10124-36-4	---	---	---	---
Carbon tetrachloride.....	50-23-5	300	1,500	0.05	0.25
Chloramphenicol.....	56-75-7	---	---	---	---
1-Chloro,2,3-epoxypropane.....	106-89-8	20	100	6.ppbv	30.ppbv
bis-Chloroethyl nitrosourea (BCNU).....	108-60-1	---	---	---	---

* Volumetric units are in parts per million by volume, unless shown as parts per billion by volume (ppbv) or parts per trillion by volume (pptv).

Note: Dashed lines indicate that no “hazard limiting value” has been established for the “hazardous air pollutant” listed. The “HLV” and/or “AAQS” will be determined at a later date.

TABLE 29-2, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV") VOLUMETRIC UNITS*			
		(ug/m ³)			
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
1-(2-Chloroethyl)-3-cyclohexyl- 1-nitrosourea (CCNU).....	13909-09-6	---	---	---	---
Chrysene.....	218-01-9	---	---	---	---
Cisplatin.....	15663-27-1	---	---	---	---
p-Cresidine.....	120-71-8	---	---	---	---
Cupferron.....	135-20-6	---	---	---	---
Cycasin.....	14901-08-7	---	---	---	---
Dacarbazine.....	4342-03-4	---	---	---	---
DDT (Dichlorodiphenyl-trichloro- ethane).....	50-29-3	5	25	---	---
2,4-Diaminoanisole sulfate.....	39156-41-7	---	---	---	---
Dibenz(a,h) anthracene.....	53-70-3	---	---	---	---
7H-Dibenzo(c,g) carbazole.....	194-59-2	---	---	---	---
Dibenzo(a,h) pyrene.....	189-64-0	---	---	---	---
Dibenzo(a,i) pyrene.....	189-55-9	---	---	---	---
1,2-Dibromoethane.....	106-93-4	1,550	7,750	0.2	1
Dienestrol.....	84-17-3	---	---	---	---
Diepoxybutane.....	1464-53-5	---	---	---	---
Di-2,3-epoxypropyl ether.....	2238-07-5	10	50	---	---
Di(2-ethylhexyl) phthalate.....	117-81-7	50	250	---	---
3-3'-Dimethoxybenzidine.....	119-90-4	---	---	---	---
4-Dimethylaminobenzene.....	1300-73-8	100	500	0.21	0.1
3,3'-Dimethylbenzidine.....	119-93-7	---	---	---	---
Dimethyl carbamoyl chloride.....	79-44-7	---	---	---	---
1,1-Dimethylhydrazine.....	57-14-7	10	50	5.ppbv	25.ppbv
3,3'-Dimethoxybenzidine.....	119-90-4	---	---	---	---
Dinitrotoluene.....	121-14-2	15	75	---	---
Direct Black 38.....	1937-37-7	---	---	---	---
Direct Blue 6.....	2610-05-1	---	---	---	---
Direct Brown 95.....	10300-74-0	---	---	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-2, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m ³)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Epichlorhydrin.....	106-89-8	20	100	6.ppbv	30.ppbv
Ethinylestradiol.....	57-63-6	---	---	---	---
Ethylene dibromide.....	106-93-4	1,550	7,750	0.2	1
Ethylene oxide.....	75-21-8	20	100	0.01	0.05
Ethylene thiourea.....	96-45-7	---	---	---	---
Formaldehyde.....	50-00-0	12	60	0.01	0.05
Hexachlorobenzene.....	118-74-1	---	---	---	---
Hexachlorobutadiene.....	87-68-3	2.4	12	---	---
Hexamethyl phosphoramidate.....	680-31-9	---	---	---	---
Hydrazine.....	302-01-2	1	5	1.ppbv	5.ppbv
Hydrazine sulfate.....	10034-93-2	---	---	---	---
Hydrazobenzene.....	122-66-7	---	---	---	---
Indeno (1,2,3-cd) pyrene.....	193-39-5	---	---	---	---
Iron dextran complex.....	9004-66-4	---	---	---	---
Isopropyl glycidyl ether (IGE).....	4016-14-2	2,400	12,000	0.5	2.5
Lead acetate.....	301-04-2	---	---	---	---
Lead chromate (as Cr).....	18454-12-1	0.5	2.5	---	---
Lead phosphate.....	7446-27-7	---	---	---	---
Lindane.....	58-89-9	5	25	---	---
Mestranol.....	72-33-3	---	---	---	---
4,4-Methylene dianiline.....	101-77-9	8	40	1.ppbv	5.ppbv
4,4'-Methylene bis (n,n-dimethyl)benzenamide.....	101-61-1	---	---	---	---
Methyl hydrazine.....	60-34-4	---	---	---	---
Methyl iodide.....	74-88-4	100	500	0.02	0.1
Metronidazole.....	443-48-1	---	---	---	---
Michler's ketone.....	90-94-8	---	---	---	---
Mirex.....	2385-85-5	---	---	---	---
Monomethyl hydrazine.....	60-34-4	---	---	---	---
Nitrilotriacetic acid.....	139-13-9	---	---	---	---

* Benzene

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-2, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m ³)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
5-Nitro-o-anisidine.....	99-59-2	---	---	---	---
Nitrofen.....	1836-75-5	---	---	---	---
2-Nitropropane.....	79-46-9	360	1,800	0.1	0.5
Nitrosamines.....	---	---	---	---	---
n-Nitrosodi-n-butylamine.....	924-16-3	---	---	---	---
n-Nitrosodiethanolamine.....	1116-54-7	---	---	---	---
n-Nitrosodiethylamine.....	55-18-5	---	---	---	---
n-Nitrosodiphenylamine.....	86-30-6	---	---	---	---
n-Nitrosodi-n-propylamine.....	621-64-7	---	---	---	---
n-Nitroso-n-ethylurea.....	759-73-9	---	---	---	---
n-Nitroso-n-methylurea.....	684-93-5	---	---	---	---
n-Nitrosomethylvinylamine.....	4549-40-0	---	---	---	---
n-Nitrosomorpholine.....	59-89-2	---	---	---	---
n-Nitrosornicotine.....	16543-55-8	---	---	---	---
n-Nitrosopiperidine.....	100-75-4	---	---	---	---
n-Nitrosopyrrolidine.....	930-55-2	---	---	---	---
n-Nitrososarcosine.....	20661-60-3	---	---	---	---
Norethisterone.....	68-22-4	---	---	---	---
Oestradiol-17-beta.....	2529-64-8	---	---	---	---
Oestrone.....	53-16-7	---	---	---	---
Phenazopyridine.....	94-78-0	---	---	---	---
Phenazopyridine hydrochloride.....	136-40-3	---	---	---	---
Phenantoin (and sodium salt).....	50-12-4	---	---	---	---
Phenoxyacetic acid herbicides.....	---	---	---	---	---
Phenyl glycidyl ether (PGE).....	122-60-1	60	300	0.01	0.05
Phenylhydrazine.....	100-63-0	200	1,000	0.05	0.25
Phenyl-2-naphthylamine.....	135-88-6	---	---	---	---
Phenytoin.....	57-41-0	---	---	---	---
Polybrominated biphenyls.....	---	---	---	---	---
Polychlorinated biphenyls: 42% Cl.....	53469-21-9	0.01	0.05	---	---
Polychlorinated biphenyls: 54% Cl.....	11097-69-1	0.01	0.05	---	---
Procarbazine Hydrochloride.....	366-70-1	---	---	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. the "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-2, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m ³)		VOLUMETRIC UNITS*	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Progesterone.....	57-83-0	---	---	---	---
Propane sultone.....	1120-71-4	---	---	---	---
Propylene imine.....	75-55-8	50	250	0.02	0.1
Propylthiouracil.....	51-52-5	---	---	---	---
Reserpine.....	50-55-5	---	---	---	---
Saccharine.....	81-07-2	---	---	---	---
Safrole.....	94-59-7	---	---	---	---
Selenium sulfide.....	7446-34-6	---	---	---	---
Streptozotocin.....	18883-66-4	---	---	---	---
Sulfallate.....	95-06-7	---	---	---	---
Tetrachlorinated dibenzo-p-dioxins*.....	1746-01-6	---	---	---	---
Thioacetamide.....	62-55-5	---	---	---	---
Thiotepa.....	52-24-4	---	---	---	---
Thiourea.....	62-56-6	---	---	---	---
o-Tolidine.....	119-93-7	---	---	---	---
p-Toluidine.....	106-49-0	90	450	0.02	0.1
o-Toluidine hydrochloride.....	636-21-5	---	---	---	---
Triaziquone.....	68-76-8	---	---	---	---
Tris (1-aziridinyl) phosphine sulfide.....	140-56-7	---	---	---	---
Tris (2,3-dibromopropyl) phosphate.....	126-72-7	---	---	---	---
Uracil mustard.....	66-75-1	---	---	---	---
Urethane.....	51-79-6	---	---	---	---
Vinyl bromide.....	593-60-2	44	220	11.ppbv	55.ppbv
Vinyl cyclohexene dioxide.....	106-87-6	600	3,000	0.1	0.5
Xylidine.....	1330-73-8	100	500	0.02	0.1
Zinc chromate (as Cr).....	13530-65-9	0.5	2.5	---	---

* The "HLV" for dioxin is 0.7 picograms per cubic meter (8-hour average). There is no "HLV" in volumetric units. Concentration is expressed in terms of 2,3,7,8 dibenzo-p-dioxin equivalents, as defined in section 22a-174-1. There is an "ambient air quality standard" for this substance contained in section 22a-174-24.

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. the "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3

“HAZARDOUS AIR POLLUTANT”	“CAS NUMBER”	“HAZARD LIMITING VALUE” (“HLV”)			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Acetaldehyde.....	75-07-0	3,600	18,000	2	10
Acetic acid.....	69-19-7	500	2,500	0.2	1
Acetic anhydride.....	108-24-7	400	2,000	0.1	0.5
Acetone.....	67-64-1	11,800	59,000	5	25
Acetone cyanohydrin.....	75-86-5	---	---	---	---
Acetonitrile.....	75-05-8	680	3,400	0.39	1.95
Acetylene.....	74-86-2	---	---	---	---
Acetylene dichloride.....	540-59-0	15,800	79,000	4	20
Acetylene tetrabromide.....	79-27-6	280	1,400	0.02	0.1
Acetylsalicylic acid.....	50-78-2	100	500	---	---
Acrolein.....	107-02-8	5	25	2.ppbv	10.ppbv
Acrylamide.....	79-06-1	6	30	---	---
Acrylic acid.....	79-10-7	600	3,000	0.2	1
Adiponitrile.....	111-69-3	360	1,800	0.08	0.4
Allyl alcohol.....	107-18-6	100	500	0.04	0.2
Allyl chloride.....	107-05-1	60	300	0.02	0.1
Allyl propyl disulfide.....	2179-59-1	240	1,200	0.04	0.2
Aluminum metal and oxide.....	7429-90-5	200	1,000	---	---
Aluminum pyro powder.....	---	100	500	---	---
Aluminum welding fumes.....	---	100	500	---	---
Aluminum soluble salts.....	---	40	200	---	---
Aluminum alkyls (not otherwise classified).....	---	40	200	---	---
2-Aminoethanol.....	141-43-5	120	600	0.04	0.2
2-Aminopyridine.....	504-29-0	40	200	0.01	0.05
Ammonia.....	7664-41-7	360	1,800	0.5	2.5
Ammonium chloride fume.....	12125-02-9	200	1,000	---	---
Ammonium sulfamate.....	7773-06-0	200	1,000	---	---
n-Amyl acetate.....	628-63-7	10,500	52,500	2	10
sec-Amyl acetate.....	626-38-0	13,000	65,000	2.5	10

Volumetric units are in parts per million by volume, unless shown as parts per billion by volume (ppbv) or parts per trillion by volume (pptv).

Note: Dashed lines indicate that no “hazard limiting value” has been established for the “hazardous air pollutant” listed. The “HLV” and/or “AAQS” will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m ³)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Aniline.....	62-53-3	200	1,000	0.04	0.2
p-Anisidine.....	29191-52-4	10	50	2.ppbv	10.ppbv
Antimony & compounds (as Sb).....	---	10	50	---	---
ANTU (-Naphthyl-thiourea).....	86-88-4	6	30	---	---
Asphalt (petroleum) fumes.....	8052-42-4	100	500	---	---
Atrazine.....	1912-24-9	100	500	---	---
Azinphos-methyl.....	86-50-0	4	20	---	---
Barium (soluble compound) as Ba.....	7440-39-3	10	50	---	---
Baygon (propoxur).....	114-26-1	10	50	---	---
Benomyl.....	17804-35-2	200	1,000	---	---
Benzal chloride.....	98-87-3	---	---	---	---
Benzenethiol.....	108-98-5	40	200	0.01	0.05
Benzo (r,s,t) pentaphene.....	189-55-9	---	---	---	---
p-Benzoquinone.....	106-51-4	8	40	2.ppbv	10.ppbv
Benzoyl chloride.....	98-88-4	---	---	---	---
Benzoyl peroxide.....	94-36-0	100	500	---	---
Benzyl chloride.....	100-44-7	100	500	0.02	0.1
Biphenyl.....	92-52-4	30	150	2.6ppbv	13.ppbv
Bismuth telluride.....	1304-82-1	200	1,000	---	---
Bismuth telluride, Se-doped.....	---	100	500	---	---
Borates, tetra, sodium salts.....					
-anhydrous.....	1303-96-4	20	100	---	---
-decahydrate.....	1303-96-4	100	500	---	---
-pentahydrate.....	1303-96-4	20	100	---	---
Boron oxide.....	1303-86-2	200	1,000	---	---
Boron tribromide.....	10294-33-4	200	1,000	0.02	0.1
Boron trifluoride.....	7637-07-2	---	---	---	---
Bromacil.....	314-40-9	200	1,000	0.02	0.1
Bromine.....	7726-95-6	14	70	2.ppbv	10.ppbv
Bromine pentafluoride.....	7789-30-2	14	70	2.ppbv	10.ppbv

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Bromochloromethane/chlorobromomethane.....	74-97-5	21,000	105,000	4	20
Bromoform.....	75-25-2	100	500	0.01	0.05
Butane.....	106-97-8	38,000	190,000	16	80
1-Butanethiol.....	109-79-5	30	150	0.01	0.05
2-Butanethiol.....	513-53-1	30	150	0.01	0.05
2-Butanone.....	78-93-3	11,800	59,000	4	20
2-Butoxyethanol.....	111-76-2	2,400	12,000	0.5	2.5
n-Butyl acetate.....	123-86-4	14,200	71,000	3	15
sec-Butyl acetate.....	105-46-4	19,000	95,000	4	20
tert-Butyl acetate.....	540-88-5	19,000	95,000	4	20
Butyl acrylate.....	141-32-2	1,100	5,500	0.2	1
n-Butyl alcohol.....	71-36-3	6,000	30,000	2	10
sec-Butyl alcohol.....	78-92-2	6,100	30,500	2	10
tert-Butyl alcohol.....	75-65-1	6,000	30,000	2	10
Butylamine.....	109-73-9	---	---	---	---
tert-Butyl chromate (as CrO3).....	1189-85-1	---	---	---	---
n-Butyl lactate.....	138-22-7	500	2,500	0.1	0.5
Butyl mercaptan.....	109-79-5	30	150	0.01	0.05
o-sec-Butylphenol.....	89-72-5	600	3,000	0.1	0.5
p-tert-Butyltoluene.....	98-51-1	1,200	6,000	0.2	1
n-Butyronitrile.....	109-74-0	440	2,200	0.16	0.8
Cadmium oxide production.....	1306-19-0	1	5	---	---
Calcium arsenate (as As).....	7778-44-1	---	---	---	---
Calcium cyanamide.....	156-62-7	10	50	---	---
Calcium hydroxide.....	1305-62-0	100	500	---	---
Calcium oxide.....	1305-78-8	40	200	---	---
Camphor, synthetic.....	76-22-2	240	1,200	0.04	0.2
Caprolactam dust.....	105-60-2	20	100	---	---
Caprolactam vapor.....	105-60-2	400	2,000	0.1	0.5
Captafol (difolatan).....	2425-06-1	2	10	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Captan.....	113-06-2	100	500	---	---
Carbaryl (Sevin).....	63-25-2	100	500	---	---
Carbofuran (Furadan).....	1563-66-2	2	10	---	---
Carbon black.....	1333-86-4	70	350	---	---
Carbon disulfide.....	75-15-0	60	300	0.02	0.1
Carbon tetrabromide.....	558-13-4	28	140	2.ppbv	10.ppbv
Carbonyl chloride (Phosgene).....	75-44-5	8	40	2.ppbv	10.ppbv
Carbonyl fluoride.....	353-50-4	100	500	0.04	0.2
Catechol.....	120-80-9	400	2,000	0.1	0.5
Cesium hydroxide.....	21351-79-1	40	200	---	---
2-Chloraniline.....	106-47-8	0.06	0.3	0.01 ppbv	0.05 ppbv
Chlorinated diphenyl oxide.....	55720-99-5	10	50	---	---
Chlorine.....	7782-50-5	60	300	0.02	0.1
Chlorine dioxide.....	10049-04-4	6	30	2.ppbv	10.ppbv
Chlorine trifluoride.....	7790-91-2	---	---	---	---
Chlormadione acetate.....	302-22-7	---	---	---	---
Chloroacetaldehyde.....	107-20-0	---	---	---	---
alpha-Chloroacetophenone (Phenacyl chloride).....	532-27-4	6	30	1.ppbv	5.ppbv
Chloroacetyl chloride.....	79-04-0	4	20	1.ppbv	5.ppbv
Chlorobenzene.....	108-90-7	7,000	35,000	1.5	7.5
o-Chlorobenzylidene malonitrile.....	2698-41-1	8	40	1.ppbv	5.ppbv
Chlorobromomethane/bromochloromethane.....	74-97-5	21,000	105,000	4	20
2-Chloro-1,3-butadiene.....	126-99-8	900	4,500	0.2	1
Chlorodifluoromethane.....	75-45-6	70,000	350,000	20	100
Chlorodiphenyl (42% Chlorine).....	53469-21-9	20	100	---	---
Chlorodiphenyl (54% Chlorine).....	11097-69-1	10	50	---	---
2-Chloroethanol.....	107-07-3	320	1,600	0.1	0.5
Chloropentafluorethane.....	76-15-3	126,400	632,000	20	100
1-Chloro-1-nitro-propane.....	600-25-9	200	1,000	0.04	0.2

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Chloropicrin.....	76-06-2	14	70	2.ppbv	10.ppbv
beta-Chloroprene.....	126-99-8	900	4,500	0.2	1
o-Chlorostyrene.....	1331-28-8	5,700	28,500	1	5
o-Chlorotoluene.....	95-49-8	5,000	25,000	1	5
Chloropyrifos (Dursban).....	2921-88-2	4	20	---	---
Chromium (II) compounds as Cr.....	---	10	50	---	---
Chromium (III) compounds as Cr.....	---	10	50	---	---
Chromium (IV) compounds, non-carcinogenic as Cr.....	---	0.5	2.5	---	---
Chromyl chloride.....	14977-61-8	3	15	0.5ppbv	2.5 ppbv
Clofibrate.....	637-07-1	---	---	---	---
Clomiprene.....	911-45-5	---	---	---	---
Clopidol.....	2971-90-6	200	1,000	---	---
Coal dust.....	---	40	200	---	---
Cobalt metal, dust & fume (as Co).....	7440-48-4	2	10	---	---
Cobalt carbonyl, as Co.....	00000-00-0	2	10	---	---
Cobalt hydrocarbonyl, (as Co).....	16842-03-8	2	10	---	---
Copper – dusts & mists (as Cu).....	7440-50-8	20	100	---	---
Copper fume.....	7440-50-8	2	10	---	---
Cotton dust, raw.....	---	4	20	---	---
Crag herbicide.....	556-22-9	300	1,500	---	---
Cresol.....	1319-77-3	200	1,000	0.048	0.24
Crotonaldehyde.....	123-73-9	120	600	0.04	0.2
Crufomate.....	299-86-5	100	500	---	---
Cumene.....	98-82-8	4,900	24,500	1	5
Cyanamide.....	420-04-2	40	200	---	---
Cyanides, as CN.....	51-50-8	100	500	---	---
.....	143-33-9	100	500	---	---
Cyanogen.....	460-19-5	400	2,000	0.2	1
Cyanogen chloride.....	506-77-4	---	---	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Cyclamates.....	100-88-9	---	---	---	---
Cyclohexane.....	110-82-7	21,000	105,000	6	30
Cyclohexanethiol.....	1569-69-3	---	---	---	---
Cyclohexanol.....	108-93-0	4,000	20,000	1	5
Cyclohexanone.....	108-94-1	2,000	10,000	0.5	2.5
Cyclohexene.....	110-83-8	20,300	101,500	6	30
Cyclohexylamine.....	108-91-8	800	4,000	0.2	1
Cyclonite.....	121-82-4	30	150	---	---
Cyclopentadiene.....	542-92-7	4,000	20,000	1.5	7.5
Cyclopentane.....	287-92-3	17,000	85,000	6	30
Cyhexatin.....	13121-70-5	---	---	---	---
2,4-D (2,4-Dichlorophenoxyacetic acid).....	94-75-7	200	1,000	---	---
Dalapon.....	75-99-0	120	600	0.02	0.1
Dapsone.....	80-08-0	---	---	---	---
Decaborane.....	17702-41-9	6	30	1.ppbv	5.ppbv
Decanethiol.....	143-10-2	---	---	---	---
Demeton.....	8065-48-3	2	10	0.2ppbv	1.ppbv
Diacetone alcohol.....	123-42-2	4,800	24,000	1	5
1,2-Diaminoethane.....	107-15-3	500	2,500	0.2	1
Diazinon.....	333-41-5	2	10	---	---
Diazomethane.....	334-88-3	8	40	4.ppbv	20.ppbv
Diborane.....	19287-45-7	2	10	2.ppbv	10.ppbv
Dibrom.....	300-76-5	60	300	---	---
2-n-Dibutylaminoethanol.....	102-81-8	280	1,400	0.04	0.2
Dibutyl phosphate.....	107-66-4	100	500	0.02	0.1
Dibutyl phthalate.....	84-74-2	100	500	---	---
Dichloroacetylene.....	7572-29-4	---	---	---	---
o-Dichlorobenzene.....	95-50-1	---	---	---	---
p-Dichlorobenzene.....	106-46-7	9,000	45,000	1.5	7.5

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Dichlorodifluoromethane.....	75-71-8	99,000	495,000	20	100
1,3-Dichloro-5,5-dimethyl hydantoin.....	118-52-5	4	20	---	---
1,1-Dichloroethane.....	75-34-3	8,000	40,000	2	10
1,2-Dichloroethylene.....	540-59-0	15,800	79,000	4	20
Dichloroethyl ether.....	111-44-4	600	3,000	0.1	0.5
Dichloromethane.....	75-09-2	7,000	35,000	2	10
Dichloromonofluoromethane.....	75-43-4	800	4,000	0.2	1
1,1-Dichloro-1-nitroethane.....	594-72-9	200	1,000	0.04	0.2
Dichloropropene.....	542-75-6	100	500	0.02	0.1
2,2-Dichloropropionic acid.....	75-99-0	120	600	0.02	0.1
Dichlorotetrafluoroethane.....	76-14-2	140,000	700,000	20	100
Dichlorvos (DDVP).....	62-73-7	20	100	2.ppbv	10.ppbv
Dicrotophos (Bidrin).....	141-66-2	5	25	---	---
Dicyclohexyl methane 4,4'-diisocyanate.....	---	1.1	5.5	---	---
Dicyclopentadiene.....	77-73-6	600	3,000	0.1	0.5
Dicyclopentadienyl iron.....	102-54-5	200	1,000	---	---
Dieldrin.....	60-57-1	5	25	---	---
Diethanolamine.....	111-42-2	300	1,500	0.06	0.3
Diethylamine.....	109-89-7	600	3,000	0.2	1
Diethylaminoethanol.....	100-37-8	1,000	5,000	0.2	1
Diethyl ether.....	60-29-7	24,000	120,000	8	40
Diethyl ketone.....	96-22-0	14,100	70,500	4	20
Diethyl phthalate.....	84-66-2	100	500	---	---
Diethylene triamine.....	111-40-0	80	400	0.02	0.1
Difluorodibromomethane.....	75-61-6	17,200	86,000	2	10
Diglycidal ether.....	2238-07-5	10	50	2.ppbv	10.ppbv
Diisobutyl ketone.....	108-83-8	2,800	14,000	0.46	2.3
Diisocyanates, not listed.....	---	---	---	0.1 ppbv	0.5 ppbv
Diisopropylamine.....	108-18-9	400	2,000	0.1	0.5

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Dimethisterone.....	79-64-1	---	---	---	---
Dimethoxymethane.....	109-87-5	62,000	310,000	20	100
Dimethyl acetamide.....	127-19-5	700	3,500	0.2	1
Dimethylamine.....	124-40-3	360	1,800	0.2	1
Dimethylaniline.....	121-69-7	500	2,500	0.1	0.5
Dimethylformamide.....	68-12-2	600	3,000	0.2	1
Dimethylphthalate.....	131-11-3	100	500	---	---
Dinitolmide.....	148-01-6	100	500	---	---
Dinitrobenzene-o isomer.....	528-29-0	20	100	3.ppbv	15.ppbv
Dinitrobenzene-m isomer.....	99-65-0	20	100	3.ppbv	15.ppbv
Dinitrobenzene-p isomer.....	100-25-4	20	100	3.ppbv	15.ppbv
Dinitro-o-Cresol.....	534-52-1	4	20	---	---
3,5-Dinitro-o-toluamide (Dinitolmide).....	148-01-6	100	500	---	---
Dioxathion (Delnav).....	78-34-2	4	20	---	---
Diphenyl.....	92-52-4	20	100	2.6 ppbv	13.ppbv
Diphenylamine.....	122-39-4	200	1,000	---	---
Diphenylmethane diisocyanate.....	101-68-8	1	5	---	---
Diphenylphthalate.....	---	---	---	---	---
Dipropylene glycol methyl ether.....	34590-94-8	12,000	60,000	2	10
Dipropyl ketone.....	123-19-3	4,700	23,500	1	5
Diquat.....	85-00-7	10	50	---	---
Di-sec octyl phthalate.....	117-81-7	100	500	---	---
Disulfiram.....	97-77-8	40	200	---	---
Disulfoton.....	298-04-4	2	10	---	---
Disyston.....	298-04-4	2	10	---	---
2,6-Ditert butyl-p-cresol.....	128-37-0	200	1,000	---	---
Diuron.....	330-54-1	200	1,000	---	---
Divinyl benzene.....	108-57-6	1,000	5,000	---	---
Dodecanethiol.....	---	---	---	---	---
Dyfonate.....	944-22-9	2	10	---	---
Endosulfan.....	115-29-7	2	10	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

<u>“HAZARDOUS AIR POLLUTANT”</u>	<u>“CAS NUMBER”</u>	<u>“HAZARD LIMITING VALUE” (“HLV”)</u>			
		<u>(ug/m3)</u>		<u>VOLUMETRIC UNITS</u>	
		<u>8-HOUR</u>	<u>30-MINUTE</u>	<u>8-HOUR</u>	<u>30-MINUTE</u>
Endrin.....	72-20-8	2	10	---	---
EPN.....	2104-64-5	10	50	---	---
Ethane.....	74-84-0	---	---	---	---
Ethanol.....	64-17-5	38,000	190,000	20	100
Ethanolamine.....	141-43-5	120	600	0.04	0.2
Ethion.....	563-12-2	8	40	---	---
2-Ethoxyethanol.....	110-80-5	380	1,900	0.1	0.5
2-Ethoxyethyl acetate.....	111-15-9	540	2,700	0.1	0.5
Ethyl acetate.....	141-78-6	28,000	140,000	8	40
Ethyl acrylate.....	140-88-5	400	2,000	0.1	0.5
Ethylamine.....	75-04-7	360	1,800	0.2	1
Ethyl sec-amyl ketone.....	541-85-5	2,600	13,000	0.6	3
Ethyl benzene.....	100-41-4	8,700	43,500	2	20
Ethyl bromide.....	74-96-4	17,800	89,000	4	20
Ethylbutyl ketone.....	106-35-4	4,600	23,000	1	5
Ethyl chloride.....	75-00-3	52,000	260,000	20	100
Ethylene.....	74-85-1	---	---	---	---
Ethylene chlorohydrin.....	107-07-3	320	1,600	0.1	0.5
Ethylenediamine.....	107-15-3	500	2,500	0.2	1
Ethylene glycol dinitrate.....	628-96-6	6	30	1.ppbv	5.ppbv
Ethylene glycol monomethyl ether acetate.....	110-49-6	480	2,400	0.1	0.5
Ethylene glycol, vapor.....	107-21-1	---	---	---	---
Ethylenimine.....	151-56-4	20	100	0.01	0.05
Ethyl ether.....	60-29-7	24,000	120,000	8	40
Ethyl formate.....	109-94-4	6,000	30,000	2	10
Ethylidene norbornene.....	16219-75-3	---	---	---	---
Ethyl mercaptan.....	75-08-1	20	100	0.01	0.05

Note: Dashed lines indicate that no “hazard limiting value” has been established for the “hazardous air pollutant” listed. The “HLV” and/or “AAQS” will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
n-Ethylmorpholine.....	100-74-3	460	2,300	0.1	0.5
Ethyl silicate.....	78-10-4	1,700	8,500	0.2	1
Ethynodiol acetate.....	297-76-7	---	---	---	---
Fenamiphos.....	22224-92-6	2	10	---	---
Fensulfothion (Dasanit).....	115-90-2	2	10	---	---
Fenthion.....	55-38-9	4	20	---	---
Ferbam.....	14484-64-1	200	1,000	---	---
Ferrovandium dust.....	12604-58-9	20	100	---	---
Fluorides (as F).....	---	50	250	---	---
Fluorine.....	7782-41-1	4	20	2.ppbv	10.ppbv
Fluorotrichchloromethane.....	75-69-4	112,000	560,000	20	100
5-Fluorouracil.....	51-21-8	---	---	---	---
Fonofos.....	944-22-9	2	10	---	---
Formamide.....	75-12-7	600	3,000	0.4	2
Formic acid.....	64-18-6	180	900	0.1	0.5
Furfural.....	98-01-1	160	800	0.04	0.2
Furfuryl alcohol.....	98-00-0	800	4,000	0.2	1
Gasoline.....	8006-61-9	18,000	90,000	6	30
Germanium tetrahydride.....	7782-65-2	12	60	4.ppbv	20.ppbv
Glass (dust).....	---	100.*	500.*	---	---
Glass (fibrous)**.....	---	---	---	---	---
Glutaraldehyde, activated or unactivated.....	111-30-8	14	70	---	---
Glycerin mist.....	56-81-5	---	---	---	---
Glycidol.....	556-52-5	1,500	7,500	0.5	2.5

* Respirable

** The "HLV" for fibrous glass is 60,000 fibers of a length of 5 microns or greater per cubic meter (8-hour average) or 300,000 fibers of length of 5 microns or greater per cubic meter (30-minute average)

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

<u>“HAZARDOUS AIR POLLUTANT”</u>	<u>“CAS NUMBER”</u>	<u>“HAZARD LIMITING VALUE” (“HLV”)</u>			
		<u>(ug/m3)</u>		<u>VOLUMETRIC UNITS</u>	
		<u>8-HOUR</u>	<u>30-MINUTE</u>	<u>8-HOUR</u>	<u>30-MINUTE</u>
Glyconitrile.....	107-16-4	---	---	---	---
Guthion (Azinphos-Methyl).....	86-50-0	4	20	---	---
Hafnium.....	7440-58-6	10	50	---	---
Hematite.....	1317-60-8	---	---	---	---
Heptane (n-Heptane).....	142-82-5	7,000	35,000	1.75	8.75
Heptanethiol.....	1639-09-4	---	---	---	---
Hexachlorocyclohexane.....	319-85-7	---	---	---	---
Hexachlorocyclopentadiene.....	77-47-4	2	10	0.2	1
Hexachloronaphthalene.....	1335-87-1	4	20	---	---
Hexadecanethiol.....	---	---	---	---	---
Hexafluoroacetone.....	684-16-2	14	70	2.ppbv	10.ppbv
Hexamethylene diisocyanate.....	822-06-0	0.7	3.5	---	---
Hexan (n-hexane).....	110-54-3	3,600	18,000	1	5
Hexane, other isomers.....	110-54-3	36,000	180,000	10	50
Hexanethiol.....	111-31-9	---	---	---	---
2-Hexanone.....	591-78-6	400	2,000	0.1	0.5
Hexone.....	108-10-1	4,100	20,500	1	5
sec-Hexyl acetate.....	108-84-9	6,000	30,000	1	5
Hexylene glycol.....	107-41-5	---	---	---	---
Hydralazine.....	86-54-4	---	---	---	---
Hydrazinobenzene.....	100-63-0	400	2,000	0.1	0.5
Hydrochloride o-anisidine.....	---	---	---	---	---
Hydrogenated terphenyls.....	92-94-4	100	500	0.01	0.05
Hydrogen bromide.....	10035-10-6	200	1,000	0.06	0.3
Hydrogen chloride.....	7647-01-0	---	---	---	---
Hydrogen cyanide.....	74-90-8	220	1,100	0.2	1
Hydrogen fluoride.....	7664-39-3	50	250	0.06	0.3
Hydrogen peroxide.....	7722-84-1	28	140	0.02	0.1
Hydrogen selenide.....	7783-07-5	4	20	1.ppbv	5.ppbv
Hydrogen sulfide.....	7783-06-4	280	1,400	0.2	1

Note: Dashed lines indicate that no “hazard limiting value” has been established for the “hazardous air pollutant” listed. The “HLV” and/or “AAQS” will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Hydroquinone.....	123-31-9	40	200	---	---
17x-Hydroxyprogesterone caproate.....	---	---	---	---	---
2-Hydroxypropyl acrylate.....	999-61-1	60	300	0.01	0.05
Indene.....	95-13-6	900	4,500	0.2	1
Indium & Compounds (as In).....	7440-74-6	2	10	---	---
Iodine.....	7553-56-2	---	---	---	---
Iodoform.....	75-47-8	200	1,000	0.012	0.06
Iron oxide fume.....	1309-37-1	100	500	---	---
Iron pentacarbonyl.....	13463-40-6	16	80	2.ppbv	10.ppbv
Iron salts, soluble (as Fe).....	---	20	100	---	---
Isoamyl acetate.....	123-92-2	10,500	52,500	2	10
Isoamyl alcohol.....	123-51-3	7,200	36,000	2	10
Isobutyl acetate.....	110-19-0	14,000	70,000	3	15
Isobutyl alcohol.....	78-83-1	3,000	15,000	1	5
Isobutyronitrile.....	78-82-0	440	2,200	0.16	0.8
Isonicotinic acid hydrazide.....	55-22-1	---	---	---	---
Isooctyl alcohol.....	26952-21-6	5,400	27,000	1	5
Isophorone.....	78-59-1	460	2,300	0.1	0.5
Isophorone diisocyanate.....	4098-71-9	0.9	4.5	0.1ppbv	0.5 pbv
Isopropoxyethanol.....	109-59-1	2,100	10,500	0.5	2.5
Isopropyl acetate.....	108-21-4	19,000	95,000	5	25
Isopropyl alcohol.....	67-63-0	19,600	98,000	8	40
Isopropylamine.....	75-31-0	240	1,200	0.1	0.5
n-Isopropyl aniline.....	643-28-7	200	1,000	0.04	0.2
Isopropyl ether.....	108-20-3	21,000	105,000	5	25
Isopropyl oils.....	---	---	---	---	---
Kerosene.....	8008-20-6	2,000	10,000	---	---
Ketene.....	463-51-4	18	90	0.01	0.05
Lead, inorg., fumes & dusts (as Pb).....	7439-92-1	3	15	---	---
Lead arsenate (as Pb).....	10102-48-4	3	15	---	---
Liquified petroleum gas.....	---	36,000	180,000	20	100

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

<u>“HAZARDOUS AIR POLLUTANT”</u>	<u>“CAS NUMBER”</u>	<u>“HAZARD LIMITING VALUE” (“HLV”)</u>			
		<u>(ug/m3)</u>		<u>VOLUMETRIC UNITS</u>	
		<u>8-HOUR</u>	<u>30-MINUTE</u>	<u>8-HOUR</u>	<u>30-MINUTE</u>
Lithium hydride.....	7580-67-8	0.5	2.5	---	---
Lynoestrenol.....	52-76-6	---	---	---	---
Magenta.....	632-99-5	---	---	---	---
Magnesite.....	546-93-0	---	---	---	---
Magnesium oxide fume.....	1309-48-8	200	1,000	---	---
Malathion.....	121-75-5	200	1,000	---	---
Maleic anhydride.....	108-31-6	20	100	5.ppbv	25.ppbv
Malonitrile.....	109-77-3	160	800	0.06	0.3
Manganese dust & compounds (as Mn).....	7489-96-5	---	---	---	---
Manganese cyclopentadienyl.....	---	---	---	---	---
tricarbonyl (as Mn).....	12079-65-1	2	10	---	---
Manganese fume (as Mn).....	7439-96-5	20	100	---	---
Manganese tetroxide.....	1317-35-7	20	100	---	---
Medroxyprogesterone acetate.....	71-58-9	---	---	---	---
Magestrol acetate.....	595-33-5	---	---	---	---
6-Mercaptopurine.....	50-44-2	---	---	---	---
Mercury (alkyl compounds) (as Hg).....	---	0.2	1	---	---
Mercury (all forms except alkyl (as Hg).....	---	---	---	---	---
vapor.....	---	1	5	---	---
aryl and inorganic compounds.....	---	2	10	---	---
Mesityl oxide.....	141-79-7	800	4,000	0.2	1
Methacrylic acid.....	79-41-4	1,400	7,000	0.4	2
Methanethiol.....	74-93-1	20	100	0.01	0.05
Methanol.....	67-56-1	5,200	26,000	4	20
Methomyl.....	16752-77-5	50	250	---	---
Methotrexate.....	59-05-2	---	---	---	---
Methoxychlor.....	72-43-5	200	1,000	---	---
2-Methoxyethanol.....	109-86-4	320	1,600	0.1	0.5
2-Methoxyethyl acetate.....	110-49-6	480	2,400	0.1	0.5
4-Methoxyphenol.....	150-76-5	100	500	---	---

Note: Dashed lines indicate that no “hazard limiting value” has been established for the “hazardous air pollutant” listed. The “HLV” and/or “AAQS” will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Methyl acetate.....	79-20-9	12,200	61,000	4	20
Methyl acetylene.....	74-99-7	33,000	165,000	20	100
Methyl acetylene-propadiene mixture.....	---	36,000	180,000	20	100
Methyl acrylate.....	96-33-3	700	3,500	0.2	1
Methylacrylonitrile.....	126-98-7	60	300	0.02	0.1
Methylal.....	109-87-5	62,000	310,000	20	100
Methylamine.....	74-89-5	240	1,200	0.2	1
Methyl n-amyl ketone.....	110-43-0	4,700	23,500	1	5
n-Methyl aniline.....	100-61-8	40	200	0.01	0.05
Methyl bromide.....	74-83-9	1,200	6,000	0.3	1.5
Methyl butyl ketone.....	591-78-6	80	400	28.ppbv	0.14
Methyl cellosolve.....	109-86-4	320	1,600	0.1	0.5
Methyl cellosolve acetate.....	110-49-6	480	1,200	0.1	0.5
Methyl chloride.....	74-87-3	2,100	10,500	1	5
Methyl chloroform.....	71-55-6	38,000	190,000	7	35
Methyl 2-cyanoacrylate.....	137-05-3	160	800	0.04	0.2
Methylcyclohexane.....	108-87-2	32,000	160,000	8	40
Methylcyclohexanol.....	25639-42-3	4,700	23,500	1	5
o-Methylcyclohexanone.....	583-60-8	4,600	23,000	1	5
Methylcyclopentadienyl manganese tricarbonyl (as Mn).....	12108-13-3	4	20	2.ppbv	10.ppbv
Methyl demeton.....	8022-00-2	10	50	---	---
Methylene bis (4-cyclo-hexyl- isocyanate).....	5124-30-1	---	---	---	---
Methylene chloride.....	75-09-2	7,000	35,000	2	10
Methylene diphenyl isocyanate (MDI).....	101-68-8	1	5	---	---
Methyl ethyl ketone (MEK).....	78-93-3	11,800	59,000	4	20
Methyl ethyl ketone peroxide.....	1338-23-4	---	---	---	---
Methyl formate.....	107-31-3	5,000	25,000	2	10
Methyl isoamyl ketone.....	110-12-3	4,600	23,000	0.96	4.8
Methyl isobutyl carbinol.....	108-11-2	2,000	10,000	0.5	2.5

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Methyl isobutyl ketone.....	108-10-1	4,000	20,000	1	5
Methyl isocyanate.....	624-83-9	1	5	0.4 ppbv	2.ppbv
Methyl isopropyl ketone.....	563-80-4	14,100	70,500	4	20
Methyl mercaptan.....	74-93-1	20	100	0.01	0.05
Methyl methacrylate.....	80-62-6	8,200	41,000	2	10
Methyl parathion.....	298-00-0	4	20	---	---
Methyl n-propyl ketone.....	107-87-9	10,600	53,000	2.8	14
Methyl silicate.....	681-84-5	120	600	0.02	0.1
Methyl styrene.....	98-83-9	4,800	24,000	1	5
Metribuzin.....	21087-64-9	100	500	---	---
Mevinphos.....	7786-34-7	2	10	2.ppbv	10.ppbv
Mica*.....	---	---	---	---	---
Mineral wool fiber.....	---	200	1,000	---	---
Molybdenum (as Mo) soluble compounds.....	---	100	500	---	---
Molybdenum (insoluble compounds).....	---	200	1,000	---	---
Monocrotophos.....	6923-22-4	5	20	---	---
Monomethyl aniline.....	100-61-8	40	200	0.01	0.05
Naled.....	300-76-5	60	300	---	---
Naphtha**.....	---	8,000	40,000	2	10
Naphthalene.....	91-20-3	1,000	5,000	0.2	1
Napthalene diisocyanate.....	39394-45-1	0.8	4	---	---
1-Napthylamine.....	134-32-7	---	---	---	---
Nickel (II) oxide.....	1313-99-1	0.3	1.5	---	---
Nickel (III) oxide.....	1314-06-3	0.3	1.5	---	---

* The "HLV" for mica is 0.4 million particles per cubic foot (mppcf), eight-hour average and 2 mppcf, 30-minute average.

** See also VM&P Naphtha

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Nickel, other soluble compounds (as Ni)***	---	0.3	1.5	---	---
Nicotine	54-11-5	10	50	---	---
Nitrapyrin	1929-82-4	200	1,000	---	---
Nitric acid	7697-37-2	100	500	0.04	0.2
Nitric oxide	10102-43-9	600	3,000	0.5	2.5
p-Nitroaniline	100-01-6	60	300	0.01	0.05
Nitrobenzene	98-95-3	100	500	0.02	0.1
p-Nitrochlorobenzene	100-00-5	20	100	---	---
Nitroethane	79-24-3	6,200	31,000	2	10
Nitrogen trifluoride	7783-54-2	580	2,900	0.2	1
Nitroglycerin	55-63-0	10	50	1.ppbv	5.ppbv
Nitromethane	75-52-5	5,000	25,000	2	10
1-Nitropropane	108-03-2	1,800	9,000	0.5	2.5
Nitrotoluene	99-08-1	220	1,100	0.04	0.2
Nitrous oxide	10024-97-2	1,340	6,700	0.73	3.65
Nonane	111-84-2	21,000	105,000	4	20
Nonanethiol	1455-21-6	---	---	---	---
Norethynodrel	68-23-4	---	---	---	---
Norgestrel	6533-00-2	---	---	---	---
Octachloronaphthalene	2234-13-1	2	10	---	---
Octadecanethiol	---	---	---	---	---
Octane	111-65-9	7,000	35,000	1.4	7
Octanethiol	111-86-6	---	---	---	---
Oil mist, mineral	8012-95-1	100	500	---	---
Osmium tetroxide (as Os)	20816-12-0	0.04	0.2	4.pptv	20.pptv
Oxalic acid	144-62-7	20	100	---	---
Oxygen difluoride	7783-41-7	2	10	1.ppbv	5.ppbv
Paraffin wax fume	8002-74-2	40	200	---	---
Paraquat, respirable sizes	1910-42-5	2	10	---	---
Parathion	56-38-2	2	10	---	---

*** Non-carcinogens

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Pentaborane.....	19624-22-7	0.2	1	0.1 ppbv	0.5 ppbv
Pentachloronaphthalene.....	1321-64-8	10	50	---	---
Pentachlorophenol.....	87-86-5	10	50	---	---
Pentaerythritol.....	115-77-5	300	1,500	---	---
Pentane.....	109-66-0	7,000	35,000	2.3	11.7
Pentanethiol.....	110-66-7	---	---	---	---
2-Pentanone.....	107-87-9	10,600	53,000	2.8	14
Perchloromethyl mercaptan.....	594-42-3	16	80	2.ppbv	10.ppbv
Perchloryl fluoride.....	7616-94-6	270	1,350	0.06	0.3
Perlite.....	---	0.6	3	---	---
		mppcf*	mppcf*		
Phenelzine.....	51-71-8	---	---	---	---
Phenobarbital.....	50-06-6	---	---	---	---
Phenol.....	108-95-2	380	1,900	0.1	0.5
Phenothiazine.....	92-84-2	100	500	---	---
Phenylbutazone.....	50-33-9	---	---	---	---
p-Phenylene diamine.....	106-50-3	2	10	---	---
Phenyl ether (vapor).....	101-84-8	140	700	0.02	0.1
Phenyl ether-Diphenyl mixture (vapor).....	---	140	700	0.02	0.1
Phenyl mercaptan.....	108-98-5	40	200	0.01	0.05
Phenyl-l-naphthylamine.....	90-30-2	---	---	---	---
Phenylphosphine.....	638-21-1	---	---	---	---
Phorate (Thimet).....	298-02-2	1	5	---	---
Phosdrin (Mevinphos).....	7786-34-7	2	10	2.ppbv	10.ppbv
Phosgene (carbonyl chloride).....	75-44-5	8	40	2.ppbv	10.ppbv
Phosphine.....	7803-51-2	8	40	6.ppbv	30.ppbv

* mppcf: millions of particles per cubic foot

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Phosphoric acid.....	7664-38-2	20	100	---	---
Phosphorus (yellow).....	7723-14-0	2	10	---	---
Phosphorus oxychloride.....	10025-87-3	12	60	2.ppbv	10.ppbv
Phosphorus pentachloride.....	10026-13-8	20	100	2.ppbv	10.ppbv
Phosphorus pentasulfide.....	1314-80-3	20	100	---	---
Phosphorus trichloride.....	7719-12-2	30	150	4.ppbv	20.ppbv
Phthalic anhydride.....	85-44-9	120	600	0.02	0.1
m-Phthalodinitrile.....	626-17-5	100	500	---	---
Picloram.....	1918-02-1	200	1,000	---	---
Picric acid.....	88-89-1	2	10	---	---
Pindone.....	83-26-1	2	10	---	---
Piperazine dihydrochloride.....	142-64-3	100	500	---	---
Pival (2-Pivalyl-1,3-indandione).....	83-26-1	2	10	---	---
Platinum (metal).....	7440-06-4	20	100	---	---
Platinum (soluble salts) (as Pt).....	---	0.04	0.2	---	---
Polytetrafluoroethylene decomposition products.....	---	---	---	---	---
Potassium hydroxide.....	1310-58-3	---	---	---	---
Prednisone.....	53-03-2	---	---	---	---
Propane.....	74-98-6	---	---	---	---
Propanethiol.....	75-33-2	36,000	180,000	---	---
Propargyl alcohol.....	107-19-7	40	200	0.02	0.1
Propionic acid.....	79-09-4	600	3,000	0.2	1
Propionitrile.....	107-12-0	280	1,400	0.12	0.6
Propoxur.....	114-26-1	10	50	---	---
n-Propyl acetate.....	109-60-4	16,800	84,000	4	20
Propyl alcohol.....	71-23-8	10,000	50,000	4	20
Propylene.....	115-07-1	---	---	---	---
Propylene dichloride.....	78-87-5	7,000	35,000	1.5	7.5
Propylene glycol dinitrate.....	6423-43-4	6	30	1.ppbv	5.ppbv

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Propylene glycol monomethyl ether.....	107-98-2	7,200	36,000	2	10
Propylene oxide.....	75-56-9	1,000	5,000	0.4	2
n-Propyl nitrate.....	627-13-4	2,100	10,500	0.5	2.5
Pyrethrum.....	8003-34-7	100	500	---	---
Pyridine.....	110-86-1	300	1,500	0.1	0.5
Quinone.....	106-51-4	8	40	2.ppbv	10.ppbv
RDX.....	121-82-4	30	150	---	---
Resorcinol.....	108-46-3	900	4,500	0.2	1
Rhodium, Metal fume & dusts (as Rh).....	7440-16-6	2	10	---	---
- insoluble compounds.....	---	20	100	---	---
- soluble salts (as Rh).....	---	0.02	0.1	---	---
Ronnel.....	299-84-3	200	1,000	---	---
Rosin core solder pyrolysis products (as formaldehyde).....	---	2	10	---	---
Rotenone (commercial).....	83-79-4	100	500	2.ppbv	10.ppbv
Rouge.....	1309-37-1	---	---	---	---
Selenium compounds (as Se).....	---	4	20	---	---
Selenium hexafluoride.....	7783-79-1	4	20	1.ppbv	5.ppbv
Sesone.....	136-78-7	200	1,000	---	---
Silane.....	7803-62-5	140	700	0.1	0.5
Silica, amorphous.....	60676-86-0	---	---	---	---
Silicon carbide.....	409-21-2	---	---	---	---
Silver, metal.....	7440-22-4	0.2	1	---	---
Silver, soluble compounds.....	---	0.2	1	---	---
Soapstone*.....	---	---	---	---	---

* The "HLV" for soapstone is 0.4 million particles per cubic foot (mppcf), eight-hour average and 2 mppcf, 30-minute average

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Sodium azide.....	26628-22-8	---	---	---	---
Sodium bisulfite.....	7631-90-5	100	500	---	---
Sodium fluoroacetate (1080).....	62-74-8	1	5	---	---
Sodium hydroxide.....	1310-73-2	40	200	---	---
Sodium metabisulfite.....	7681-57-4	100	---	---	---
Sprionolactone.....	52-01-7	---	---	---	---
Stibine.....	7803-52-3	10	50	2.ppbv	10.ppbv
Stoddard solvent.....	8052-41-3	7,000.**	35,000.**	1.22**	6.1**
Strychnine.....	57-24-9	3	15	---	---
Styrene, monomer.....	100-42-5	4,300	21,500	1	5
Styrene oxide.....	96-09-3	---	---	---	---
Subtilisins (proteolytic enzymes as 100% pure crystalline enzyme).....	1395-21-7	---	---	---	---
Succinonitrile.....	110-61-2	400	2,000	0.12	0.6
Sulfafurazole.....	127-69-5	---	---	---	---
Sulfamethoxazole.....	723-46-6	---	---	---	---
Sulfotep.....	3689-24-5	4	20	---	---
Sulfur hexafluoride.....	2551-62-4	120,000	600,000	20	100
Sulfuric acid.....	7664-93-9	20	100	---	---
Sulfur monochloride.....	10025-67-9	120	600	0.02	0.1
Sulfur pentafluoride.....	5714-22-7	5	25	0.5ppbv	2.5ppbv
Sulfur tetrafluoride.....	7783-60-0	8	40	2.ppbv	10.ppbv
Sulfuryl fluoride.....	2699-79-8	400	2,000	0.1	0.5
Sulprofos.....	35400-43-2	20	100	---	---
2,4,5-T.....	93-76-5	200	1,000	---	---
Tantalum.....	7440-25-7	100	500	---	---
TEDP (Sulfotep).....	3689-24-5	4	20	---	---
Teflon decomposition products.....	---	---	---	---	---
Tellurium & compounds, as Te.....	13494-80-9	2	10	---	---
Tellurium hexafluoride, as Te.....	7783-80-4	4	20	0.4	2

**Petroleum solvents generally, except kerosene

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TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m ³)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Temephos.....	3383-96-8	200	1,000	---	---
TEPP.....	107-49-3	1	5	0.08 ppbv	0.4 ppbv
Terphenyls.....	92-94-4	---	---	---	---
2,3,7,8-Tetrachlorodibenzofuran.....	51207-31-0	---	---	---	---
1,1,1,2-Tetrachloro-2,2-difluoroethane.....	76-11-9	83,400	417,000	10	50
1,1,2,2-Tetrachloro-1,2-difluoroethane.....	76-12-0	83,400	417,000	10	50
Tetrachloronaphthalene.....	1335-88-2	40	200	---	---
Tetraethyl lead (as Pb).....	78-00-2	1.5	7.5	---	---
Tetrahydrofuran.....	109-99-9	11,800	59,000	4	20
Tetramethyl lead (as Pb).....	75-74-1	1.5	7.5	---	---
Tetramethyl succinonitrile.....	3333-52-6	60	120	0.01	0.05
Tetranitromethane.....	509-14-8	160	800	0.02	0.1
Tetrasodium pyrophosphate.....	7722-88-5	100	500	---	---
Tetryl (2,4,6-trinitrophenyl- methylnitramine).....	479-45-8	30	150	---	---
Thallium, soluble compounds (as Tl).....	---	2	10	---	---
4,4'-Thiobis (6-tert butyl-m-cresol).....	96-69-5	200	1,000	---	---
Thioglycolic acid.....	68-11-1	100	500	0.02	0.1
Thiram.....	137-26-8	100	500	---	---
Tin, metal.....	7440-31-5	40	200	---	---
Tin, inorganic compounds, except SnH ₄	---	40	200	---	---
Tin, organic compounds (as Sn).....	---	2	10	---	---
Tin, oxide (as Sn).....	---	40	200	---	---
Titanium dioxide (as Ti).....	13463-67-7	300	1,500	---	---
Toluene.....	108-88-3	7,500	37,500	2	10
Toluene-2,4-diisocyanate (TDI).....	584-84-9	0.72	4	0.1 ppbv	0.5 ppbv
Tributyl phosphate.....	126-73-8	50	250	4.ppbv	20.ppbv
Trichloroacetic acid.....	76-03-9	100	500	0.02	0.1
1,2,4-Trichlorobenzene.....	120-82-1	800	4,000	0.1	0.5
1,1,1-Trichloroethane.....	71-55-6	38,000	190,000	7	35

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

"HAZARDOUS AIR POLLUTANT"	"CAS NUMBER"	"HAZARD LIMITING VALUE" ("HLV")			
		(ug/m3)		VOLUMETRIC UNITS	
		8-HOUR	30-MINUTE	8-HOUR	30-MINUTE
Trichlorofluoromethane.....	75-69-4	---	---	---	---
Trichloronaphthalene.....	1321-65-9	100	500	---	---
2,4,5-Trichlorophenol.....	95-95-4	---	---	---	---
1,2,3-Trichloropropane.....	96-18-4	6,000	30,000	1	5
1,1,2-Trichloro-1,2,2-trifluoroethane.....	76-13-1	152,000	760,000	20	100
Tricyclohexyltin hydroxide (Cyhexatin).....	13121-70-5	100	500	---	---
Triethylamine.....	121-44-8	800	4,000	0.2	1
Trifluoromonobomomethane.....	75-63-8	122,000	610,000	20	100
Trimellitic anhydride.....	552-30-7	0.8	4	0.1 ppbv	0.5 ppbv
Trimethylamine.....	75-50-3	480	2,400	0.2	1
Trimethyl benzene.....	25551-13-7	2,500	12,500	0.5	2.5
Trimethyl phosphite.....	121-45-9	200	1,000	0.04	0.2
2,4,6-Trinitrotoluene (TNT).....	118-96-7	10	50	---	---
Triorthocresyl phosphate.....	73-30-8	2	10	---	---
Triphenyl amine.....	603-34-9	100	500	---	---
Triphenyl phosphate.....	115-86-6	60	300	---	---
Tungsten & compounds, as W – soluble.....	---	20	100	---	---
-insoluble.....	---	100	500	---	---
Turpentine.....	8006-64-2	11,200	56,000	2	10
Undecanethiol.....	---	---	---	---	---
Uranium (natural) compounds (as U)					
soluble.....	---	1	5	---	---
insoluble.....	---	4	20	---	---
Valeraldehyde.....	110-62-3	3,500	17,500	1	5
Vanadium, as Pentoxide, -Dust.....	1314-62-1	1	5	---	---
- (Fume).....	1314-62-1	1	5	---	---

Note: Dashed lines indicate that no "hazard limiting value" has been established for the "hazardous air pollutant" listed. The "HLV" and/or "AAQS" will be determined at a later date.

TABLE 29-3, Continued

<u>“HAZARDOUS AIR POLLUTANT”</u>	<u>“CAS NUMBER”</u>	<u>“HAZARD LIMITING VALUE” (“HLV”)</u>			
		<u>(ug/m3)</u>		<u>VOLUMETRIC UNITS</u>	
		<u>8-HOUR</u>	<u>30-MINUTE</u>	<u>8-HOUR</u>	<u>30-MINUTE</u>
Vinblastine.....	865-21-4	---	---	---	---
Vincristine.....	57-22-7	---	---	---	---
Vinyl acetate.....	108-05-4	600	3,000	0.2	1
Vinylidene chloride.....	75-35-4	400	2,000	0.1	0.5
Vinyl toluene.....	25013-15-4	9,600	48,000	2	10
VM & P Naphtha.....	8030-30-6	27,000	135,000	6	30
Warfarin.....	81-81-2	2	10	---	---
Welding fumes (not otherwise classified).....	---	100	500	---	---
o-Xylene.....	1330-20-7	8,680	43,400	2	10
m-Xylene.....	1330-20-7	8,680	43,400	2	10
p-Xylene.....	1330-20-7	8,680	43,400	2	10
m-Xylene, ‘-diamine.....	1477-55-0	---	---	---	---
Yttrium.....	7440-65-5	20	100	---	---
Zinc chloride fume.....	7646-85-7	20	100	---	---
Zinc oxide fume.....	1314-13-2	100	500	---	---
Zinc stearate.....	557-05-1	---	---	---	---
Zirconium compounds (as Zr).....	---	100	500	---	---

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