



# ENVIRONMENTAL SERVICES DEPARTMENT AIR QUALITY DIVISION

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## A GUIDELINE

FOR

## SEMICONDUCTOR INDUSTRY

### Part IV Insignificant and Trivial Activities Guidance Document (Non-Title V Sources)

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#### **GENERAL**

The purpose of this Guideline is to offer some examples of typical semiconductor manufacturing related processes that may be considered insignificant or trivial activities, as defined in Maricopa County Air Pollution Control Rules and Regulations Appendices D and E. This Guideline is established to recognize concerns that were typically experienced by the semiconductor industry to meet the permitting requirements imposed by Maricopa County Environmental Services Department (MCESD) in accordance with Rule 200, and 220.

Semiconductor fabrication facilities commonly engage in a multitude of manufacturing and support processes that result in negligible or no regulated emissions (insignificant and trivial activities). To avoid unnecessary and burdensome air permitting requirements associated with insignificant and trivial activities, this Guideline was developed to assist in the determination of activities which may be exempt from the air permit revision procedures of Rules 200 , and 220.

MCESD is seeking ways to communicate with industries to improve and update our regulatory and enforcement policies. Therefore, feedback and comments for MCESD's review are always welcomed.

## **NOTES**

All proposed semiconductor insignificant and trivial activities, contained in this guidance document, conform to the definitions and limitations specified in accordance with Maricopa County Air Pollution Control Rules and Regulations Appendices D (Insignificant Activities) and E (Trivial Activities). It is the responsibility of the source to ensure that existing and proposed insignificant and trivial activities conform to the general definitions and limitations specified in this guidance document and Appendices D and E.

## **INTRODUCTION**

### **Definitions:**

#### **Appendix D: Insignificant Activity**

The List of Insignificant Activities is a list of most common insignificant activities. An insignificant activity is any activity, process, or emissions unit that is not subject to a source-specific applicable requirement and that emits no more than 0.5 ton per year of hazardous air pollutants (HAPs) and no more than 2 tons per year of a regulated air pollutant. Source-specific applicable requirements include requirements for which emissions unit-specific information is needed to determine applicability.

Pursuant to Rule 200 of the Rules, a source is not required to list nor to describe insignificant activities in a permit application. If a source's emissions are approaching an applicable requirement, then such source may also be required to include, in a permit application, a description of its insignificant activities and emissions calculations for such insignificant activities.

Pursuant to Rule 200 of the Rules, a source, in a permit application, may, rather than supplying detailed information, list and generally group its insignificant activities. However, an application may not omit information regarding insignificant activities that is needed to determine: (1) applicability of or to impose any applicable requirement; (2) whether the source is in compliance with applicable requirements; or (3) the fee amount required under these rules.

An activity, process, or emissions unit that is not included in this list may be considered an insignificant activity, if it meets the definition of insignificant activity in Rule 100 (General Provisions and Definitions) of these rules and is approved by the Control Officer and the Administrator of the Environmental Protection Agency (EPA). A source may request approval for the classification of an activity as insignificant by including such a request in its permit application, along with justification that such activity meets the definition of insignificant activity in Rule 100 (General Provisions and Definitions) of these rules.

## **Appendix E: Trivial Activity**

A trivial activity is any activity, process, or emissions unit that has extremely low emissions and is not subject to a source-specific requirement. An activity, process, or emissions unit that is conducted as part of a manufacturing process or is related to the source's primary business activity is not considered trivial.

Pursuant to Rule 200 of the Rules, a source is not required, in permit applications, to list trivial activities, to describe trivial activities, nor to include the emissions from trivial activities.

## **SEMICONDUCTOR INSIGNIFICANT AND TRIVIAL ACTIVITIES**

### **A. Semiconductor Insignificant Activities**

#### **1. Chemical and Gas Management Activities**

- a) Gas storage cabinets, including gas line purges, cylinder changeouts, valve manifold boxes, and gas piping systems.
- b) Empty container management.
- c) Chemical transfer and dispensing from bulk containers to smaller receptacles.
- d) Chemical and petroleum storage tanks or containers that contain 250 gallons or less of material which may yield emissions of VOCs or HAPs.
- e) Any emissions unit, operation, or activity that handles or stores no more than 12,000 gallons of a liquid with a vapor pressure less than 1.5 psia.
- f) Piping and storage systems for natural gas, propane, and liquified petroleum gas.
- g) Empty chemical drum and tank rinsing.

#### **2. Back End Processes**

- a) Wafer tape laminating.
- b) Mold press/cure operations.
- c) Laser scribing, marking, and trimming.
- d) Aqueous grinding, sawing, and dicing of wafer substrates.
- e) Equipment used for solder reflow, solder workstations, solder test hoods, wave soldering, solder pots, and solder screen printing.

#### **3. Equipment Decommissioning**

- a) Cleaning and decommissioning obsolete equipment and/or equipment for relocation.

#### **4. Non-Chemical Processes, Dilute Chemical Processes, and Solid Source Processes**

- a) Hard bake and UV cure ovens.
- b) Metal Sputtering/Evaporating.
- c) Vacuum pumps with filters.
- d) Solid Source Ion implantation.
- e) Chemical Mechanical Polish (CMP).

**5. Research and Development Activities**

- a) **Experimental work and pilot scale manufacturing less than 6 months in duration, which yields increased uncontrolled emissions of less than 3 lbs/day VOCs and/or 2 lbs/day combined HAPs.**
- b) **Small pilot scale research and development activities that yield less than 2 tons/year combined criteria pollutants and/or 1000 lbs/year combined HAPs.**

**6. Water and Waste Water Related Processes**

- a) **Equipment using water or water and soap for cleaning or rinsing.**

**B. Semiconductor Trivial Activities**

**1. Chemical and Gas Management Activities**

- a) **Storage and handling of drums or other transportable containers, where the containers are sealed during storage and transport, which contain hazardous materials (chemicals and waste) or used oil.**
- b) **House vacuums and air compressors.**

**2. Water and Waste Water Related Processes**

- a) **Waste water storage and reuse in cooling towers, wet scrubbers, and manufacturing processes.**
- b) **Waste water treatment, including storage and dispensing of treatment chemicals.**
- c) **Ultrapure (DI) water production operations, excluding hydrochloric acid storage vessels used for ion exchange resin regeneration (MACT requirement).**

**3. Office Related Activities**

- a) **Non-production related activities administrative or facility support in nature; adhesives, packaging, desktop printing and publishing, plotting, janitorial, and shipping/receiving.**

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<sup>1</sup> File:U/Chiu/Winword/Semicon4.doc