

Ohio Intel Project – Air Permit



Michael Hopkins, P.E.
Assistant Chief, Permitting
Division of Air Pollution Control
614-644-3611 mike.hopkins@epa.ohio.gov

Intel Image



Topics

- Background Issues
- Introduction to Air Permitting
- Permit Development Process
- What is Intel building?
- Expected Emissions and Controls
- Gather Public Comments
Regarding the Draft Permit



First – Some Background

- Many different approvals from many different governmental agencies are required.
- Federal, state, local organizations all regulate different facets of new facilities.
- Ohio EPA's Division of Surface Water regulates wetlands and streams.
- Ohio EPA's Division of Air Pollution Control regulates air emissions.

The Basics of Air Permitting

- Clean Air Act (CAA) requires companies to obtain an air pollution permit whenever they plan to install equipment that emits air pollution.
- Company must submit an application for the permit.
- Ohio EPA reviews the application, calculates emissions, determines what rules apply, and writes the permit.

The Basics of Air Permitting

- The permit identifies and spells out all air pollution requirements that must be met.
- The permit includes emissions limitations, applicable rules, operational restrictions, monitoring requirements, reporting requirements, and testing requirements.
- The company must comply with everything in the permit.

The Process

- Submittal of application –
Completed June 24, 2022
- Ohio EPA issues draft terms for comment –
Completed July 21, 2022
- Ohio EPA holds information session and
hearing – Tonight
- Citizens provide comments –
Due Sept. 6, 2022

The Process

- Ohio EPA reviews comments, makes needed changes to permit terms.
- Director decides if a permit should be issued
- Final permit either issued or denied.
- If the final permit is issued, they can construct the facility and operate it for up to a year.
- Company must obtain an operating permit after that.

What is Intel going to install?

- Semi-conductor manufacturing facility
- Includes lots of equipment that can emit pollutants
- Includes lots of control equipment that control air pollutants



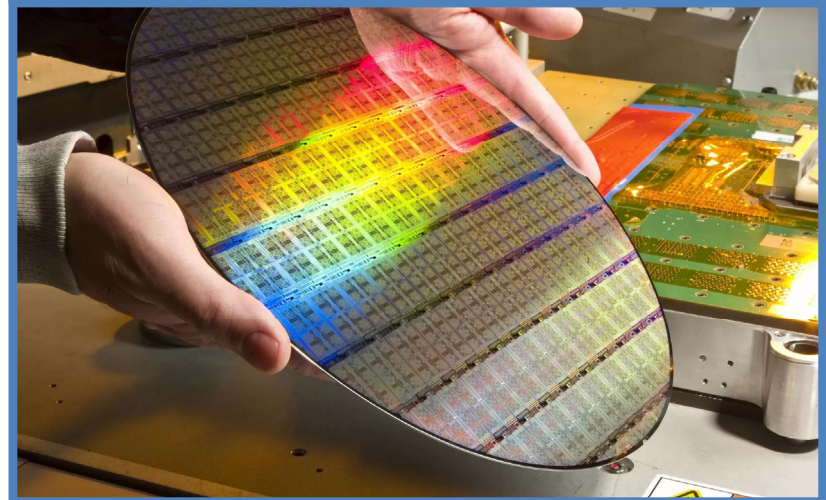
Intel Image

What is Intel going to install?

- Two large fabrication buildings consisting of two “FABs” each
- 28 natural gas boilers
- 4 natural gas nitrogen vaporizers
- 46 diesel emergency generators
- 1 emergency fire pump
- 6 lime storage silos
- 125 cooling towers
- 20 liquid storage tanks
- Roadways and parking areas

What is a FAB?

- The heart of the semiconductor manufacturing plant is called a fabrication plant or FAB.
- Consists of a large “clean room” that contains hundreds of machines (tools) to manufacture the chips.
- Silicon discs move from tool to tool.
- Microscopic layer upon layer are built up on silicon discs.




Intel Images

Allowed Air Emissions

Pollutant	Allowed Annual Emissions (Tons/Yr)
Nitrogen Oxides (NO _x)	1,206
Carbon Monoxide (CO)	485
Volatile Organic Compounds (VOC)	429
Particulate Matter	104
Particulate Matter <10 micron (PM ₁₀)	73
Particulate Matter <2.5 micron (PM _{2.5})	65
Sulfur Dioxide (SO ₂)	4.3
Sulfuric Acid (H ₂ SO ₄)	<1
Fluorides excluding Hydrogen Fluoride	6.8
Single Hazardous Air Pollutant (HAP)	9.0
Combined HAPS	24.0
Ammonia (NH ₃) (non-HAP)	18.9
Greenhouse Gases (CO ₂ e)	1,852,957

Air Pollution Size Comparison

Single Pollutant Emissions (Tons Per Year)	Size Descriptor	Typical Facilities
<5	very small	no permit needed
5-50	small	drycleaners, gas stations, small paint shops, compressors
50-100	medium	printing facilities, high volume paint and body shops
 100-500	medium-large	glass plants, can manufacturer
500-1,000	large	small steel mills, automobile assembly
1,000-10,000	extra large	large steel mills, refineries
10,000+	largest	coal-fired utility facilities

Controls

- Permit requires the use of Best Available Control Technology (BACT)
- Essentially state-of-the-art controls
- Thermal oxidizers used to control VOC
- Filters used to control particulate
- Scrubbers to control various other chemicals
- Backup controls are used
- Good combustion for NO_x, CO, GHG control

How do we protect public health?

- Make sure the rules are followed.
- Establish monitoring, record keeping, reporting, and testing to verify compliance.
- Computer modeling of emissions.
- Make sure maximum emissions do not cause adverse health or welfare effects.

How do we verify compliance?

- Review application and rules.
- Require emissions testing for larger sources.
- Establish operating conditions for sources and controls.
- Review records and reports.
- Conduct periodic inspections.

What do we need next?

- Comments on the draft permit.
 - Did we find all of the applicable rules?
 - Are the monitoring, record keeping, reporting, and testing appropriate?
 - Is there something in the permit that does not make sense?
- Get a copy of the permit...
 - Go to: <https://epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/issued-air-permits>.
 - Click on “Electronic Copies of Issued Permits”.
 - Enter permit number P0132323.
 - Click on the link to download the permit.

How to Submit Comments

- Testify this evening.
- Submit written comments by **Sept. 6**
- Email: Pam McCoy Pam.mccoy@epa.ohio.gov
- U.S. Mail:

Pam McCoy
Ohio EPA, CDO
PO Box 1049
Columbus, Ohio 43216-1049

How do you get help for comments?

- Permit and rules can be complex.
- Don't be afraid to ask Ohio EPA questions.
- Comment deadline Tuesday, Sept. 6, 2022.

Questions After Tonight

- For permit updates and general environmental concerns, contact:

Max Moore
Ohio EPA
Public Interest Center
614-644-2160
max.moore@epa.ohio.gov

Issues Outside Ohio EPA's Authority

Facility Location	Utility Location
Noise Levels	Eminent Domain
Traffic	Zoning /Setbacks to Homes, Schools and Businesses
Safety Issues	Impacts on Property Value

Wrap-up

- Intel Meeting Materials:
epa.ohio.gov/about/media-center/events/public-meeting-Intel-Ohio-air-pti
- DAPC Web - <https://epa.ohio.gov/divisions-and-offices/air-pollution-control>
- Questions?