

# AMBIENT AIR MONITORING

## Overview

Since the early 1970's, the Michigan Department of Environment, Great Lakes and Energy has taken air pollution measurements of the outdoor or "ambient" air around the state. Ambient air is the air that we breathe where we live, work, or play. EGLE is currently monitoring the ambient air for pollutants such as ozone, carbon monoxide, sulfur dioxide, nitrogen oxides, fine particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and lead. Other pollutants are also measured, such as trace metals, volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), black carbon, and carbonyls (such as formaldehyde).



Figure 1: The Dearborn air monitoring station at Salina Elementary School is featured below.

## Purpose:

EGLE conducts ambient air monitoring for some pollutants in order to compare the results to the National Ambient Air Quality Standards (NAAQS), which are the health-protective standards set by the US Environmental Protection Agency (USEPA). The comparison shows if the pollutants measured are meeting the NAAQS over a 3-year period. Many monitoring stations provide real-time data for some pollutants that can be found at [degmiair.org](http://degmiair.org). This information can be a valuable tool for the public to see values in their area. Ambient air monitoring is **not** used to determine industrial compliance with air permits or other regulations.

## Where is monitoring conducted?

EGLE operates approximately 40 separate monitoring sites around the State of Michigan. Federal regulations require a certain number and type of monitors that must be operated, generally in areas with larger populations. There are also requirements for some measurements to be taken near roadways and near certain types of industrial sources. When selecting locations, EGLE considers

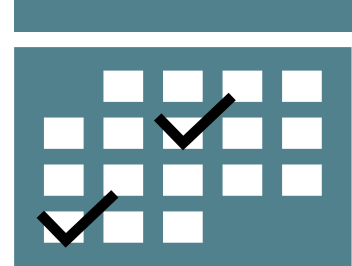
the industrial sources in the area, major roadways, the predominate wind direction, locations of schools and neighborhoods, the availability of property for the monitor, security, access to electricity, and many other factors. The sites are also selected to provide broad geographic coverage for an area. The funding EGLE receives from the USEPA is largely tied to the monitoring requirements.

## How are the samples collected?

Samples are collected differently depending on what category the pollutant is as well as if the sampling can be provided in real-time or must be physically collected and sent into a special laboratory for further evaluation.

### Criteria Pollutants:

- The criteria pollutant gases: ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide are measured by continuous analyzers 24-hours a day, 365 days per year.
- Fine particulate PM<sub>2.5</sub> is measured continuously, 24-hours a day, 365 days per year and with a filter every 3-days. Filter is sent to lab for testing.
- Larger particulate PM<sub>10</sub> is measured continuously 24-hours a day, 365 days per year (at Dearborn) and at other sites with a filter every 6-days. Filter is sent to lab for testing.
- Lead (Pb) is sampled with a filter every 6-days. Filter is sent to lab for testing.



### VOCs, PAHs, Metals, and Carbonyl Compounds:

- Collected every 6-days or 12-days, samples. are sent to laboratories for testing.

### Black Carbon:

- Sampled continuously, 24-hours a day, 365 days per year.
- Black Carbon is a component of diesel exhaust.

### More Information

- Michigan Air Monitoring Information: [Michigan.gov/Air](https://Michigan.gov/Air), then choose “Monitoring”.
- Real-time data, Air Quality forecast and Clean Air Action Days: [deqmiair.org](https://deqmiair.org)
- The National Ambient Air Quality Standards: [EPA.gov/NAAQS](https://EPA.gov/NAAQS)

## Contact Information

- Air Monitoring: Susan Kilmer, [KilmerS@Michigan.gov](mailto:KilmerS@Michigan.gov)
- Environmental Assistance Center, (800) 662-9278

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