INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT	**STATUS:** Pending	**POLICY NUMBER:** Air-0020-R1-NPD	
AGENCY NONRULE POLICY DOCUMENT **SUBJECT:** *Guidance to predicting a high ozone level day for sources subject to 326 IAC 8-13*	**AUTHORIZED:** *Bruno L. Pigott, Commissioner*		
	SUPERSEDES: Air-0020-NPD	**ISSUING OFFICE(S):** Office of Air Quality	
	ORIGINALLY EFFECTIVE: November 12, 1998	**RENEWED/REVISED:**	

Disclaimer: *This Nonrule Policy Document (NPD) is being established by the Indiana Department of Environmental Management (IDEM) consistent with its authority under IC 13-14-1-11.5. It is intended solely to provide guidance and shall be used in conjunction with applicable rules or laws. It does not replace applicable rules and laws, and if it conflicts with these rules or laws, the rules or laws shall control. Pursuant to IC 13-14-1-11.5, this policy will be available for public inspection for at least 45 days prior to presentation to the appropriate State Environmental Board and may be put into effect by IDEM 30 days afterward. If the nonrule policy is presented to more than one board, it will be effective 30 days after presentation to the last. IDEM also will submit the policy to the Indiana Register for publication.*

1.0 PURPOSE

This nonrule policy document provides guidance for development of a high ozone (O_3) action day prediction procedure for inclusion in the required high O_3 day action plan and also provides that affected sources may rely on Indiana's Air Quality Ozone Forecasting notifications in lieu of implementing its own high ozone prediction procedure.

2.0 SCOPE

This nonrule policy document applies to owners and operators of sinter plants at integrated steel mills in Lake and Porter Counties subject to 326 IAC 8-13-4(b)8(B). The action plan is part of the source's operating permit. On March 4, 1998, the Indiana Air Pollution Control Board adopted rule 326 IAC 8-13 to regulate the emissions of volatile organic compounds (VOCs) from sinter plants. The rule establishes three types of VOC emissions limits for an O_3 season from May 1 - September 30. The limits are a VOC emissions cap in pounds for the O_3 season, a maximum VOC emissions limit in pounds/day, and on a predicted high O_3 day VOC emissions limit in pounds/day. Eight-hour O_3 concentrations at or exceeding 70 parts per billion determine a high O_3 day.

On hot sunny days, ground level O_3 concentrations can reach unhealthy levels. For susceptible populations such as the very young, elderly, and those with asthma or other respiratory ailments, breathing problems may become acute. Sources of VOC emissions include both stationary sources and mobile sources. Sinter plants, which are facilities at Indiana's integrated steel mills, are stationary sources that emit significant amounts of VOCs. Indiana's sinter plants are located in Lake or Porter County.

3.0 SUMMARY

Owners and operators of sinter plants subject to 326 IAC 8-13 develop a procedure to predict high O_3 days to comply with the requirements.

4.0 DEFINITIONS

4.1. "Air Quality Action Day (AQAD)" – Day when the expected ground level O_3 pollution or fine particulate matter could build to unhealthy levels in the outdoor air. Also, when a state or source predicts an exceedance of the 8-hour O_3 National Ambient Air Quality Standards concentration.

4.2. "Air Quality Index (AQI)" – The U.S. Environmental Protection Agency's (U.S, EPA's) index for reporting air quality using numerical values indicating air quality from Good to Hazardous.

4.3. "Ground level ozone" – A harmful gas near the Earth's surface created when man-made pollutants such as NOx and VOCs react with heat and sunlight. Sources include cars, trucks and off-road vehicles, industrial boilers, gasoline vapors, and vapors from chemical solvents.

4.4. High ozone day – Any day between May 1 and September 30 when predicted O_3 levels in Lake, Porter, or LaPorte County exceed the national ambient air quality standard for 8-hour O_3.

4.5. "Indiana Department of Environmental Management (IDEM)" – An agency of Indiana State Government whose mission is to implement federal and state regulations to protect human health and the environment while allowing the environmentally sound operations of industrial, agricultural, commercial, and government activities vital to a prosperous economy.

4.6. "Indiana's Ozone Forecasting Program" – Program which relies on the Lake Michigan Region meteorologists to predict O_3 concentrations and Lake Michigan Region states make AQAD decisions.

4.7. "Lake Michigan Region" – Michigan, Illinois, Indiana, Wisconsin, and Canada, which includes Chicago and Northeast Illinois; Lake and Porter Counties in Northwest Indiana; Milwaukee and Southeastern Wisconsin; and Southwestern Michigan.

4.8. "Mobile source" – Any air pollution emitted by motor vehicles, airplanes, locomotives, and other mobile engines and equipment.

4.9. "Ozone (O_3)" – A gas composed of three oxygen atoms. A pollutant when created from photochemical reactions of NOx and VOC in the presence of sunlight at high temperatures and drier air, occurring at or near ground level. The 8-hour ozone National Ambient Air Quality Standards is a three-year average 4th high value of 70 parts per billion (ppb).

4.10. "Partners for Clean Air" – A coalition of Northwest Indiana businesses, industries, local governments, and community groups committed to improving overall air quality and public health through voluntary actions. Members develop air quality action plans.

4.11. "Sinter plant" – Plants that convert iron-bearing raw materials of fine particle size into coarse agglomerates by partial fusion using fuel combustion to heat the material. Heating of these materials drives off ozone producing pollutants (VOCs).

4.12. "SmogWatch" – Is an IDEM – Office of Air Quality (OAQ) website, Indiana's SmogWatch Air Quality Forecasts. The website provides real-time monitoring data for select state and regional O_3 monitoring sites. SmogWatch also provides daily state and regional air quality forecasts based on the air quality index (AQI). Forecasts indicate whether an AQAD will occur the following day in the Northwest Indiana region, including Lake and Porter Counties. The website contains O_3 monitors' concentrations, state and regional O_3 forecasts, and health information.

4.13. "Source" – An entity emitting criteria air pollutants regulated by the Clean Air Act and generally permitted through IDEM.

4.14. "Stationary source" – A source of air pollution with a fixed location.

4.15. "Surface high pressure area" – A region where the atmospheric pressure at the surface of the earth is greater than the surrounding environment, which typically brings sunshine, higher temperatures, and lighter winds during the summer.

4.16. "Volatile organic compounds (VOCs)" – Any gaseous chemical containing carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

5.0 ROLES

5.1. The Indiana Department of Environmental Management works with meteorologists in the Lake Michigan Region from early March through October to forecast O_3 conditions for the region.

5.2. Lake Michigan Region meteorologists evaluate weather conditions and determine whether high O_3 levels are likely the following day using primary meteorological conditions and additional factors to develop predictions of an AQAD.

Primary meteorological conditions:

- Daily Maximum Temperatures: 80 °F (27 °C) and above
- Surface Winds: 20 miles per hour (9 meters per second) or less
- Wind Direction: Varying from east-southeast to west-southwest (110° to 250°)
- Cloud Cover: Three-tenths or less of sky cover
- Precipitation: 0.01 inches or less for previous 24-hour period

Additional factors:

- Surface high pressure area located east or southeast of the region
- Persistence: A minimum of 2 days of the same weather conditions
- High pressure in the upper atmosphere which traps pollutants near the ground
- The development of lake breezes along the Lake Michigan coastline in the late morning which continue through the afternoon
- Previous day's O_3 concentrations elevated throughout the region
- Upwind O_3 levels elevated to indicate whether an incoming air mass contains existing pollution, which could be transported into the Lake Michigan Region
- Air pollution forecasting models indicating higher O_3 in the Lake Michigan area

5.3. The states call an Air Quality Action Day (AQAD), after forecasting a high O_3 day at any of the region's O_3 monitors.

5.4. The Indiana Department of Environmental Management provides O_3 information on the SmogWatch website for use by anyone needing high O_3 level day predictions or collecting information for use in high O_3 day action plans.

5.5. IDEM provides AQAD notifications to alert the public of high O_3 levels and suggests mitigation behaviors.

6.0 POLICY

6.1. Sources subject to 326 IAC 8-13 *et seq.* shall develop a high O_3 day action plan that includes operating procedures to limit VOC emissions as well as procedures to predict high ozone days.

6.2. A source subject to 326 IAC 8-13 *et seq.* may rely on Indiana's Air Quality Ozone Forecasting program notifications, detailed in 6.4 below, or develop, implement, and document its own alternate high O_3 day prediction method using item 6.6 below.

6.3. The IDEM OAQ air quality forecasts for ozone indicate whether the following day is an AQAD in Lake and Porter Counties.

6.4. Sources subject to 326 IAC 8-13 *et seq* may access IDEM air quality forecasts either through:

- Accessing the IDEM OAQ SmogWatch website.
- Receiving an IDEM AQAD notification. AQAD email notices are generally sent out by 11:30 a.m. CDT.

6.5. A source subject to 326 IAC 8-13 *et seq.* that receives an AQAD notification, shall implement the operating procedures contained in their high O_3 day action plan and schedule appropriate actions for the following day.

6.6. Sources subject to 326 IAC 8-13 that use alternate air quality forecasts for high O_3 days shall base forecasts on the same weather conditions used by Lake Michigan Region meteorologists to determine a high ozone day.

6.7. When sources use an alternate high O3 forecast in the area, sources should contact IDEM, OAQ air quality forecasters or the section chief of the Technical Support and Modeling section at (317)

233-5682.

6.8. If weather conditions appear to be conducive to high O_3 in one part of the forecast region but not in another, or if the states are not in consensus on the air quality forecast, each state may opt to call or not call an AQAD for the respective forecast area. IDEM's Northwest Indiana air quality forecast will determine the status of forecasted air quality in Lake and Porter Counties.

7.0 REFERENCES

7.1. Indiana Administrative Code(s):

A. 40 CFR 50.10 National Ambient Air Quality Standards for ozone

B. 326 IAC 8-13 Air Pollution Control Division, Volatile Organic Compound Rules, Sinter Plants

C. SmogWatch https://apps.idem.in.gov/smogwatch/Current.aspx

8.0 SIGNATURES

Bruno L. Pigott, Commissioner
Indiana Department of Environmental Management

9/22/21
Date

Matthew Stuckey, Assistant Commissioner
Office of Air Quality

9/27/21
Date

Nancy King, General Counsel

10/5/21
Date

This policy is consistent with Agency requirements.

Quality Assurance Program, Office of Program Support
Indiana Department of Environmental Management

05 Oct 2021
Date