INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

January 18, 2022

Ms. Debra Shore
Regional Administrator
U.S. EPA, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Re: Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to Section 182(c)(3) Certification of the Enhanced I/M Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area

Dear Ms. Shore:

The Indiana Department of Environmental Management (IDEM) submits a supplement to the updated Section 182(f) nitrogen oxides (NO_x) Reasonably Available Control Technology (RACT) Exemption Request and Technical Addendum to Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for Indiana's Portion (Lake and Porter counties) of the Chicago-Naperville, Illinois-Indiana-Wisconsin (IL-IN-WI), 2008 8-Hour Ozone Nonattainment Area.

The attached documents consist of the following:

- **Enclosure 1 - Supplement to the Updated Section 182(f) NO_x RACT Exemption Request**

  IDEM requests an exemption from the RACT requirements for major stationary sources of (NO_x) in Lake and Porter counties, Indiana as provided under Section 182(f) of the Clean Air Act (CAA). RACT is included as part of the implementation of the 2008 8-hour ozone standard for subpart 3, serious nonattainment areas.

- **Enclosure 2 - Technical Addendum to the Section 182(c)(3) Certification of the Enhanced I/M Program**

  Evaluation of the certification of Indiana's enhanced I/M program submitted on December 29, 2020, to demonstrate the program satisfies the enhanced I/M performance standard under Section 182(c)(3)(B)(i) of the CAA. The most

performance standard under Section 182(c)(3)(B)(i) of the CAA. The most current Northwest Indiana Regional Planning Commission (NIRPC) travel demand forecasting model and United States Environmental Protection Agency (U.S. EPA) Motor Vehicle Emission Simulator (MOVES2014a) software program were used to show the I/M program meets the applicable enhanced I/M performance requirements set forth in 40 Code of Federal Regulations (CFR) 51.351.

- **Enclosure 3 – Documentaton of Public Participation Process**

Throughout the development of these submittals IDEM staff worked with U.S. EPA Region 5 to ensure that any potential concerns regarding this submission were addressed. IDEM appreciates U.S. EPA's continued efforts to communicate regularly with us as it reviews these submittals.

IDEM provided a 30-day public comment period and an opportunity for a public hearing concerning this submittal on the *Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced I/M Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area.* A public hearing was not requested and there were not any comments received. Please refer to the supporting documents in Enclosure 3 for further information and dates regarding the public participation process.

This submittal consists of one (1) hard copy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Sarah Arra, Chief of U.S. EPA Region 5's Attainment Planning and Maintenance Section and Chris Panos of U.S. EPA Region 5.

IDEM requests that U.S. EPA proceed with review and approval of this submittal. If you have any question or need additional information, please contact Brian Callahan, Section Chief, Air Quality Standards and Implementation, Office of Air Quality, IDEM, at (317) 232-8244 or bcallaha@idem.IN.gov.

Sincerely,

Matthew Stuckey
Assistant Commissioner
Office of Air Quality

MS/sd/bc/gf/lf

Enclosures:

1. Supplement to the Updated Section 182(f) NO_x RACT Exemption Request for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area

2. Technical Addendum to Indiana's Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area

3. Documentation of the Public Participation Process

cc: Sarah Arra, U.S. EPA Region 5 (no enclosures)
Chris Panos, U.S. EPA Region 5 (no enclosures)
Kathleen D'Agostino, U.S. EPA Region 5 (no enclosures)
Katie Mullen, U.S. EPA Region 5 (no enclosures)
Matt Stuckey, IDEM-OAQ (no enclosures)
Scott Deloney, IDEM-OAQ (no enclosures)
Brian Callahan, IDEM-OAQ (no enclosures)
Gale Ferris, IDEM-OAQ (w/ enclosures)
Leslie Ferguson, IDEM-OAQ (w/ enclosures)
File Copy

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Enclosure 1

Supplement to the Updated Section 182(f) NO_x RACT Exemption Request for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone Nonattainment Area

Specifically, this request supplements the Updated Section 182(f) NO_x RACT Exemption Request for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, Illinois-Indiana-Wisconsin (IL-IN-WI) 2008 8-Hour Ozone Nonattainment Area that was submitted to United States Environmental Protection Agency on November 30, 2021[1] for review and approval, under the serious nonattainment classification.

Indiana seeks to exempt major stationary sources of nitrogen oxides (NO_x) (as defined in Section 302 and Subsections 182(c) and (d) of the Clean Air Act (CAA) in Lake and Porter counties from the reasonably available control technology (RACT) requirements of Section 182(b)(2)), based on the fact that the entire nonattainment area, as the result of permanent and enforceable emission control measures, has recorded three (3) years of complete, quality assured ambient air quality monitoring data for the years 2019 – 2021 demonstrating attainment of the 2008 8-hour ozone standard, as shown in Table 1. As such, the area is eligible for a waiver of NO_x RACT requirements, as specified in Section 182(f)(1)(A) of the CAA.

[1] IDEM: State Implementation Plans: Ozone (O3) Attainment Demonstrations

Table 1: Annual 4th Highs and Design Values for the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone Nonattainment Area, 2019 – 2021

Monitors				Annual 4th High (ppm)			Design Values (average of 4th highs) (ppm)
AQS #	**State**	**County**	**Site**	**2019**	**2020**	**2021**	**2019-2021**
18-089-0022	Indiana	Lake	Gary - IITRI	0.065	0.074	0.070	0.069
18-089-2008	Indiana	Lake	Hammond	0.065	0.071	0.068	0.068
18-127-0024	Indiana	Porter	Ogden Dunes	0.068	0.076	0.072	0.072
18-127-0026	Indiana	Porter	Valparaiso	0.071	0.067	0.066	0.068
17-031-0001	Illinois	Cook	Alsip	0.070	0.076	0.068	0.071
17-031-0032	Illinois	Cook	Chicago - SWFP	0.071	0.077	0.077	0.075
17-031-0076	Illinois	Cook	Chicago-Com Ed	0.065	0.068	0.070	0.067
17-031-1003	Illinois	Cook	Chicago-Taft	0.069	0.077	0.068	0.071
17-031-1601	Illinois	Cook	Lemont	0.068	0.078	0.072	0.072
17-031-3103	Illinois	Cook	Schiller Park	0.064	0.068	0.060	0.064
17-031-4002	Illinois	Cook	Cicero	0.064	0.079	0.067	0.070
17-031-4007	Illinois	Cook	Des Plaines	0.066	0.072	0.069	0.069
17-031-4201	Illinois	Cook	Northbrook	0.069	0.079	0.075	0.074
17-031-7002	Illinois	Cook	Evanston	0.069	0.074	0.078	0.073
17-043-6001	Illinois	DuPage	Lisle	0.070	0.073	0.069	0.070
17-089-0005	Illinois	Kane	Elgin	0.071	0.073	0.068	0.070
17-097-1007	Illinois	Lake	Zion	0.066	0.076	0.077	0.073
17-111-0001	Illinois	McHenry	Cary	0.070	0.076	0.069	0.071
17-197-1011	Illinois	Will	Braidwood	0.060	0.067	0.065	0.064
55-059-0019	Wisconsin	Kenosha	Chiwaukee	0.067	0.078	0.079	0.074
55-059-0025	Wisconsin	Kenosha	Water Tower	0.066	0.078	0.072	0.072

Enclosure 2

Technical Addendum to Indiana's Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for the Indiana Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Nonattainment Area

Background

This is a technical addendum to Indiana's State Implementation Plan (SIP) revision addressing Section 172 and 182 "serious" classification requirements for Indiana's portion of the Chicago-Naperville, Illinois-Indiana-Wisconsin (IL-IN-WI), 2008 8-Hour Ozone Nonattainment Area, which was submitted to United States Environmental Protection Agency (U.S. EPA) on December 29, 2020. This addendum includes additional support to Indiana's Section 182(c)(3) certification of the enhanced I/M program for Lake and Porter counties.

Introduction

This document provides a mobile source emissions modeling demonstration that Indiana's I/M program meets the requirements of U.S. EPA's *enhanced performance standard for areas designated and classified under the 8-hour ozone standard*, as specified in 40 Code of Federal Regulation (CFR) 51.351(i). This section of the CFR specifies a model program which is to be compared by emissions modeling with the state I/M program being assessed. The requirements for the program being assessed are specified in 40 CFR 51.351(i)(13), as follows:

> "*Evaluation Date*. Enhanced I/M program areas subject to the provisions of this paragraph (i) shall be shown to obtain the same or lower emission levels for HC (hydrocarbon) and NO_x (oxides of nitrogen) as the model program described in this paragraph assuming an evaluation data set 6 years after the effective date of designation and classification under the 8-hour ozone standard (rounded to the nearest July) to within ±0.02 gpm (grams per mile). Subject programs shall demonstrate through modeling the ability to maintain this percent level of emission reduction (or better) through their applicable attainment date for the 8-hour ozone standard, also rounded to the nearest July."

Since U.S. EPA classified Lake and Porter counties as "serious" under the 2008 ozone National Ambient Air Quality Standards (NAAQS) effective September 23, 2019, the evaluation date under 40 CFR 51.351(i)(13) is six years later rounded to the nearest July (i.e., July 2025). Additional years do not need to be modeled under 40 CFR 51.351(i)(13), since the applicable attainment date, July 20, 2021, is prior to July 2025.

1. Description of the Modeling Demonstration

The Northwest Indiana Regional Planning Commission (NIRPC) conducted this modeling demonstration on behalf of the Indiana Department of Environmental Management (IDEM) using U.S. EPA's Motor Vehicle Emission Simulator (MOVES2014a) software program. This modeling was conducted in accordance with the following EPA technical guidance:

Performance Standard Modeling for New and Existing Vehicle Inspection and Maintenance (I/M) Programs Using the MOVES Mobile Source Emissions Model, EPA-420-B-14-006, January 2014.

The compliance demonstration involves a comparison of emissions reductions from U.S EPA's model program specified in 40 CFR 51.351(i) and the actual I/M program in Lake and Porter counties, as it is approved into Indiana's State Implementation Plan (SIP). Three separate MOVES2014(a) runs were conducted to support this demonstration:

1 - 2025 with no I/M parameters
2 - 2025 with I/M parameters for U.S. EPA's model program
3 - 2025 with Indiana SIP-approved I/M parameters

The focal point of this demonstration is on the difference between runs 2 and 3. If the results of these two runs are within 0.02 gpm of each other for both NO_x and HC, Indiana's SIP-approved I/M program demonstrates equivalency to U.S. EPA's performance standards for an enhanced I/M program, thus supporting Indiana's Section 182(b)(4) certification.

The following tables summarize the MOVES2014a modeling assumptions.

Table 1: Assumptions, other than I/M Program Parameters, Associated with MOVES2014a I/M Performance Standard Modeling

Calendar Year	2025
Month	July
Day Type	Weekday
Age Distribution	2017 Indiana BMV for motorcycles, passenger cars, passenger trucks, and light commercial trucks, MOVES default for all others
Vehicle Miles of Travel	2017 INDOT traffic count data (HPMS and other)
Vehicle Population	NIRPC long-range plan socio-economic forecast
Fuel Inputs	MOVES2014a default for reformulated gasoline
Road Type Distribution	2017 HPMS
Average Speed Distribution	2017 HPMS
Daily Temperature Range	62.5 to 83.4 °F
Daily Humidity Range	50.9% to 100%

Table 2: I/M Program Parameters Associated with MOVES2014a I/M Performance Standard Modeling

Category	I/M Program		
	Enhanced I/M Performance Standard	Indiana NO I/M Program	Indiana WITH I/M Program
Evaluation Date	July 2025	N/A	July 2025
Test Type		N/A	
Unloaded Idle Test	MYs 1968 to 2000	N/A	MYs 1976 to 1995
Evaporative System OBD Check	MYs 2001 to 2025	N/A	MYs 1996 to 2021
Exhaust OBD Check	MYs 2001 to 2025	N/A	MYs 1996 to 2021
Test Frequency	Annual	N/A	Biennial
Fuel Types Tested for: Passenger Cars Passenger Trucks Light Commercial Trucks	Gasoline and E-85	N/A	Gasoline and E-85
Waiver Rate	3.00%	N/A	3.00%
Compliance Rate	96.0%	N/A	95.0%
Failure Rate	4.21%	N/A	5.00%
Maximum GVWR Tested for MYs 2006 and Older	8,500 pounds	N/A	8,999 pounds
Maximum GVWR Tested for MYs 2007 and Newer	8,500 pounds	N/A	8,999 pounds

2. Modeling Results

Tables 3 and 4 provide a summary of the modeling results showing NO_x and HC emission rates by vehicle type for Lake and Porter counties. The results verify that NO_x and HC emissions reductions from Indiana's SIP-approved I/M program are within the 0.02 gpm buffer of the emission reductions from U.S EPA's model program under 40 CFR 51.351(i). The difference between the two scenarios are: 0.003 gpm for NO_x, and 0.001 gpm for HC. Therefore, Indiana's current I/M program in Lake and Porter counties meets the applicable enhanced I/M performance requirements in 40 CFR 51.351.

Table 3: Modeling Results for NO_x

Vehicle Type	Enhanced I/M Base	Indiana I/M SIP-Approved
Motorcycle	0.014726987	0.014726987
Passenger Car	0.041185664	0.039211677
Passenger Truck	0.045408493	0.044700328
Light Commercial Truck	0.015111181	0.014580489
Intercity Bus	0.002738782	0.002738782
Transit Bus	0.001310575	0.001310575
School Bus	0.012885334	0.012885334
Refuse Truck	0.000380673	0.000380673
Single Unit Short-haul Truck	0.011832578	0.011832578
Single Unit Long-haul Truck	0.001156928	0.001156928
Motor Home	0.003965888	0.003965888
Combination Short-haul Truck	0.033072275	0.033072275
Combination Long-haul Truck	0.033280383	0.033280383

Lake and Porter Avg Emission Rate	0.217055741	0.213842896
Difference		**0.003212844**

Table 4: Modeling Results for HC

Vehicle Type	Enhanced I/M Base	Indiana I/M SIP-Approved
Motorcycle	0.022029792	0.022029792
Passenger Car	0.00937136	0.009029071
Passenger Truck	0.009271563	0.008238821
Light Commercial Truck	0.002791755	0.002444291
Intercity Bus	0.000229249	0.000229249
Transit Bus	0.000117239	0.000117239
School Bus	0.001822834	0.001822834
Refuse Truck	2.52309E-05	2.52309E-05
Single Unit Short-haul Truck	0.001921286	0.001921286
Single Unit Long-haul Truck	0.000106073	0.000106073
Motor Home	0.000940963	0.000940963
Combination Short-haul Truck	0.002122357	0.002122357
Combination Long-haul Truck	0.001768758	0.001768758

Lake and Porter Avg Emission Rate	0.052518461	0.050795966
Difference		**0.001722494**

Enclosure 3

LEGAL NOTICE OF PUBLIC HEARING

Draft Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area

Note: Legal notices for public hearings are no longer published in newspapers, but can be found on the Indiana Department of Environmental Management's web site at:
IDEM: Public Notices: Northwest Indiana.

Notice is hereby given under 40 Code of Federal Regulations (CFR) 51.102 that the Indiana Department of Environmental Management (IDEM) is accepting written comment and providing an opportunity for a public hearing regarding the *Draft Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced I/M Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area*. All interested persons are invited and will be given reasonable opportunity to express their views concerning this submittal.

IDEM is requesting an exemption from reasonably available control technology (RACT) requirements for major stationary sources of nitrogen oxides (NO_x) in Lake and Porter counties since the Chicago nonattainment area, based on permanent and enforceable emission control measures, has recorded three years of complete, quality assured ambient air quality monitoring data for the years 2019-2021, that demonstrates attainment of the 2008 8-hour ozone standard.

IDEM is also providing an evaluation of the certification of Indiana's I/M program submitted on December 29, 2020, that demonstrates the program satisfies United States Environmental Protection Agency's enhanced I/M performance standard.

The draft documents will be made available for review on or before December 17, 2021, on the following web page:

IDEM: State Implementation Plans: Ozone (O3) Attainment Demonstrations

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate Avenue, Room N1003, Indianapolis, Indiana.

- Indiana Department of Environmental Management, Northwest Regional Office, 330 West U.S. Highway 30, Suites E & F, Valparaiso, Indiana.

- Crown Point Community Library, 122 North Main Street, Crown Point, Indiana.
- Gary Public Library, 220 West 5th Avenue, Gary, Indiana.
- Hammond Public Library, 564 State Street, Hammond, Indiana.
- Lake County Public Library-Highland Branch, 2841 Jewett Street, Highland, Indiana.
- Lake Station-New Chicago Branch Public Library, 2007 Central Avenue, Lake Station, Indiana.
- Valparaiso Public Library, 103 Jefferson Street, Valparaiso, Indiana.
- Whiting Public Library, 1735 Oliver Street, Whiting, Indiana.

Any person may submit written comments on the *Draft Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area*. Written comments should be directed to: Mr. Scott Deloney, Indiana Department of Environmental Management, Office of Air Quality, Room 1003, 100 North Senate Avenue, Indianapolis, Indiana 46204. Written comments can also be submitted via fax (317) 233-5967 or e-mail SDELONEY@idem.IN.gov. Comments must be submitted by January 16, 2022.

A public hearing on the *Draft Supplement to the Updated Section 182(f) NO_x RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area* will be held if a request is received by January 16, 2022. If requested, the hearing will be held on January 25, 2022, and the comment period will be extended to February 1, 2022. If held, the hearing will convene at 5:30 p.m. local time at the Lake Station-New Chicago Branch Public Library located at 2007 Central Avenue, Lake Station, IN 46405. Interested parties may present written or oral comments at the public hearing, if held. If a hearing is held, oral statements will be heard, but for the accuracy of the record, a written copy of the statements should be submitted. If a request is not received by January 16, 2022, the public hearing will be cancelled.

Interested parties can check the online IDEM calendar at IDEM Calendar - State of Indiana or contact Mr. Scott Deloney at (317) 233-5694 or SDELONEY@idem.IN.gov, after January 16, 2022, to see if the hearing has been cancelled.

If a public hearing is held, a transcript of the public hearing and all written submissions provided as part of the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction

costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.

For additional information contact Mr. Scott Deloney, at the Indiana Department of Environmental Management, Office of Air Quality, Room N1003, Indiana Government Center North, 100 North Senate Avenue, Indianapolis, IN 46204, via e-mail at SDELONEY@idem.IN.gov, or via telephone at (317) 233-5694 (direct) or (800) 451-6027 (toll free in Indiana).

Speech and hearing impaired callers may contact the agency via the Indiana Relay Service at 1-800-743-3333. Individuals requiring reasonable accommodations for participation in this hearing should contact the IDEM Americans with Disabilities Act (ADA) coordinator at: Attn: ADA Coordinator, Indiana Department of Environmental Management – Mail Code 50-10, 100 North Senate Avenue, Indianapolis, IN 46204-2251, o*r call (317) 233-1785 (voice) or (317) 233-6565 (TDD). Please provide a minimum of 72 hours notification.*

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

December 15, 2021

CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) Notice of the opportunity for a Public Hearing regarding the following:

- Draft Supplement to the Updated Section 182(f) NOx RACT Exemption Request and Technical Addendum to the Section 182(c)(3) Certification of the Enhanced Inspection and Maintenance (I/M) Program for Indiana's Portion (Lake and Porter Counties) of the Chicago-Naperville, IL-IN-WI, 2008 8-Hour Ozone Nonattainment Area

was published on IDEM's web site on December 14, 2021. It is expected that it will remain posted on the site until at least January 16, 2022.

The notice in full was available online at the following web address, under "Northwest/Multi-County Notices":
https://www.in.gov/idem/public-notices/public-notices-northwest-indiana/

The draft document was posted online December 14, 2021, at the following web address under "2008 8-Hour Ozone Standard/Lake and Porter Counties":
https://www.in.gov/idem/sips/attainment-demonstrations/ozone-o3-attainment-demonstrations/

Web publication of the notice was at the request of Scott Deloney, Branch Chief, Programs Branch, Office of Air Quality, IDEM.

By:

Mike Finklestein
IDEM Webmaster

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