



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
**Governor**

*Thomas W. Easterly*  
**Commissioner**

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January 6, 2012

Ms. Susan Hedman  
Regional Administrator  
U.S. Environmental Protection Agency  
Region V  
77 West Jackson Boulevard, R-19J  
Chicago, IL 60604-3950

Re: Technical Addendum to Provide  
Updated Recommendations  
Concerning Air Quality Designations  
for the National Ambient Air Quality  
Standard for Sulfur Dioxide (SO<sub>2</sub>)

Dear Ms. Hedman:

The Indiana Department of Environmental Management (IDEM) has prepared this technical addendum to provide updated designation recommendations concerning the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO<sub>2</sub>).

Indiana's designation recommendations for the 2010 revised SO<sub>2</sub> NAAQS were sent to the United States Environmental Protection Agency (U.S. EPA) on May 11, 2011. Since that time, U.S. EPA has released draft SO<sub>2</sub> implementation guidance titled "Guidance for 1-Hour SO<sub>2</sub> NAAQS State Implementation Plan (SIP) Submissions" published on October 3, 2011 (76 FR 61098). Based on the draft guidance, Indiana wishes to update the preliminary recommendations in consideration of the 100 ton threshold U.S. EPA has proposed for SO<sub>2</sub> sources that are likely to contribute significantly to a monitored violation. Indiana's preliminary recommendations used the county boundary as the presumptive boundary for nonattainment areas. Based on additional analysis Indiana has conducted since May 2011, Indiana is now recommending smaller township areas as the boundary for nonattainment areas. The combination of emissions and the location of sources emitting greater than or equal to 100 tons per year supports Indiana's updated designation recommendations; details are outlined in Enclosure 2.

Indiana's updated recommendations are still based on 2008 through 2010 monitoring data. The 2011 monitoring data will be quality assured in early 2012 prior to U.S. EPA finalizing designations. Indiana encourages U.S. EPA to take the final 2009 through 2011 monitoring data into consideration when issuing final designations. SO<sub>2</sub> monitored concentrations in Indiana have decreased over time and additional counties, such as Fountain and Gibson, may show attainment prior to final designations. Indiana expects monitoring data to decline even further



over the next few years with the implementation of federal regulations such as the Cross-State Air Pollution Rule.

The following enclosures are included with this letter:

- Enclosure 1: 2008 through 2010 Indiana Sulfur Dioxide (SO<sub>2</sub>) Monitoring Data
- Enclosure 2: Indiana's Updated Assessment of the Sulfur Dioxide (SO<sub>2</sub>) Standard for Nonattainment Designations

As outlined in Enclosure 2, Indiana is recommending township boundaries as the nonattainment areas. New Albany Township in Floyd County, Montgomery Township in Gibson County, Harrison Township in Vigo County and Wayne Township in Wayne County should be designated as independent nonattainment areas. Indiana is also recommending that Center, Perry, and Wayne Townships in Marion County be grouped together as one nonattainment area, Clay and Washington Townships in Morgan County be grouped together as one nonattainment area, Fulton Township in Fountain County and Eugene Township in Vermillion County should be grouped together as one nonattainment area, and Veale Township in Daviess County and Washington Township in Pike County should be grouped together as one nonattainment area. Indiana is requesting that any county not outlined in Enclosure 2 be classified as unclassifiable.

Indiana reserves the right to supplement and/or revise the recommendations contained herein as additional monitoring and modeling information becomes available. I appreciate the opportunity to provide updated designation recommendations to U.S. EPA concerning the SO<sub>2</sub> NAAQS. Likewise, I look forward to working with your staff as U.S. EPA moves forward with the designation process. If you have questions regarding Indiana's recommendations, please feel free to contact me at (317) 232-8611 or Keith Baugues, Assistant Commissioner, Office of Air Quality, at (317) 232-8222.

Sincerely,



Thomas W. Easterly  
Commissioner

TWE/sad/skr  
Enclosures

Enclosure 1: 2008 through 2010 Indiana Sulfur Dioxide (SO<sub>2</sub>) Monitoring Data  
Enclosure 2: Indiana's Updated Assessment of the Sulfur Dioxide (SO<sub>2</sub>) Standard for Nonattainment Designations

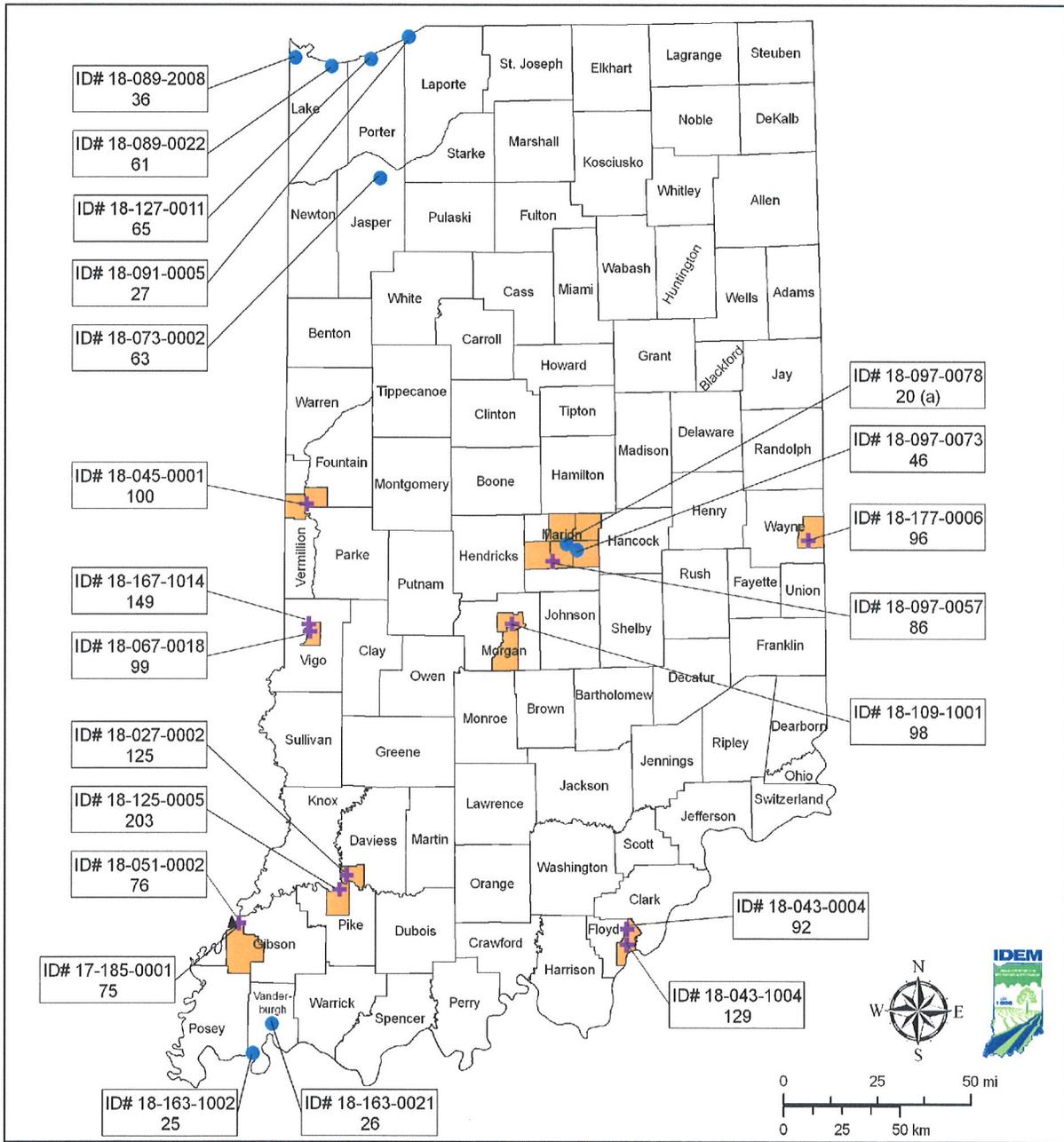
cc: Cheryl L. Newton, U.S. EPA Region V  
John Mooney, U.S. EPA Region V  
Andy Chang, U.S. EPA Region V  
Gilberto Alvarez, U.S. EPA Region V  
Keith Baugues, IDEM-OAQ

Scott Deloney, IDEM-OAQ  
Christine Pedersen, IDEM-OAQ  
Sarah Raymond, IDEM-OAQ

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# Enclosure 1

## 2008 through 2010 Indiana Sulfur Dioxide (SO<sub>2</sub>) Monitoring Data



**Legend**

- ▲ Mount Carmel, IL SO<sub>2</sub> Monitor
- SO<sub>2</sub> Monitor with Design Value Less Than 76 ppb.
- ✚ SO<sub>2</sub> Monitor with Design Value Greater Than Or Equal To 76 ppb.
- Attainment Area
- Proposed Nonattainment Area

**Notes:**  
 - SO<sub>2</sub> Tons Based on 2008 Data.  
 - SO<sub>2</sub> Design Value Based on 2008 - 2010 Data.  
 (a) Monitor commenced operation in 2010.

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Mapped By: S. Raymond, Office of Air Quality  
Date: 1/3/2012

Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library and OAO  
Orthophotography - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))

Map Projection: UTM Zone 16 N Map Datum: NAD83

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## **Enclosure 2**

### **Indiana's Updated Assessment of the Sulfur Dioxide (SO<sub>2</sub>) Standard for Nonattainment Designations**

#### **Background**

On June 2, 2010, the United States Environmental Protection Agency (U.S. EPA) revised the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO<sub>2</sub>) (75 FR 35520). U.S. EPA revoked both the previous 24-hour and annual primary SO<sub>2</sub> standards and established a new 1-hour SO<sub>2</sub> standard at a level of 75 parts per billion (ppb), based on the three-year average of the annual 99<sup>th</sup> percentile of the 1-hour daily maximum concentrations.

In accordance with Clean Air Act (CAA) Section 107(d), U.S. EPA must designate areas as attainment, nonattainment, or unclassifiable for the new 1-hour SO<sub>2</sub> standard within two years following promulgation of the new standard, or June 2, 2012. On May 11, 2011, Indiana sent U.S. EPA preliminary designation recommendations for ten counties to be nonattainment. Since that time U.S. EPA has released draft SO<sub>2</sub> implementation guidance titled "Guidance for 1-Hour SO<sub>2</sub> NAAQS State Implementation Plan (SIP) Submissions" published on October 3, 2011 (76 FR 61098). Based on the draft guidance, Indiana wishes to update the preliminary recommendations in consideration of the 100 ton threshold U.S. EPA has proposed for SO<sub>2</sub> sources that are likely to contribute significantly to a monitored violation.

Consistent with U.S. EPA's March 24, 2011, guidance titled "Area Designations for the 2010 Revised Primary Sulfur Dioxide National Ambient Air Quality Standards," Indiana's preliminary recommendations used the county boundary as the presumptive boundary for nonattainment areas. Based on additional analysis Indiana has conducted since May 2011, Indiana is now recommending township boundaries for nonattainment areas. SO<sub>2</sub> monitors with a 2008 through 2010 design value above the new 1-hour SO<sub>2</sub> standard are located in each of the townships Indiana is recommending for nonattainment areas. Indiana is also recommending all other counties where monitoring is lacking and modeling is not available as unclassifiable.

#### **Indiana's Updated Assessment**

The Indiana Department of Environmental Management (IDEM) has conducted a thorough review of the affected areas in Indiana. IDEM's review focused on the following analysis criteria:

**Air quality monitoring data:** Indiana's core evaluation is based on 2008 through 2010 monitoring data and is presented in the tables below. The air quality analysis looks at the three-year average of the 99<sup>th</sup> percentile of the yearly distribution of 1-hour daily maximum SO<sub>2</sub> concentrations for the monitors in each township. A three-year design value over the new 1-hour SO<sub>2</sub> standard (i.e. greater than or equal to 76 ppb) is highlighted in yellow. Data was retrieved from the U.S. EPA's Air Quality System (AQS). Indiana encourages U.S. EPA to take 2009 through 2011 data into consideration when issuing final area designations.

**Emissions-related data:** Nationally, and locally, sources greater than 100 tons of actual SO<sub>2</sub> emissions as a group emit close to 99% of all SO<sub>2</sub> emissions and are the sources which are most likely to contribute to violations of the SO<sub>2</sub> ambient air quality standard. Indiana has received detailed emissions information from each source emitting over 100 tons of SO<sub>2</sub> per year. This data is detailed below for each township recommended as nonattainment. Tables identified in this analysis show all stationary sources with reported SO<sub>2</sub> emissions in tons per year at the facility level within each township. U.S. EPA also suggests states consider sources within 50 kilometers (km) of a monitored violation to support nonattainment recommendations. Therefore, for townships with a monitored violation, Indiana sources within 50 km of the monitor are included in the analysis. Unless otherwise noted the 2010 emissions data is the most up to date emissions data available and is included in this analysis.

**Wind roses:** Indiana compared each of the eleven monitors with a 2008 through 2010 design value over the new 1-hour SO<sub>2</sub> standard to wind direction. Hourly SO<sub>2</sub> data was matched up with hourly wind direction and plotted on the wind roses shown in the maps below. The wind roses show from which wind direction the highest SO<sub>2</sub> concentrations are coming.

**Geography/topography:** The geography and topography analysis looked at physical features and land use that might have an effect on the airshed and, therefore, the distribution of pollutants over an area. Indiana does not have any topographic features that significantly influence the distribution of SO<sub>2</sub> concentrations within the state.

**Jurisdictional boundaries:** The analysis of jurisdictional boundaries looks at the planning structure of an area to determine if the implementation of controls in a potential nonattainment area can be carried out in a cohesive manner. Indiana is recommending the township with a violating SO<sub>2</sub> monitor or a source contributing to a monitored violation, as the nonattainment area boundary.

As a result of thorough analysis, IDEM has updated the following evaluation of nonattainment area boundaries for designating areas under the revised 1-hour SO<sub>2</sub> NAAQS.

## Indiana's Recommendations

### Daviess and Pike Counties

Within Central Southwest Indiana there are two SO<sub>2</sub> monitors, one each in Daviess and Pike counties. The Daviess County SO<sub>2</sub> monitor (Site ID # 18-027-0002) is located on State Road 57. The SO<sub>2</sub> monitor Site ID # 18-125-0005 is located at 1587 East Arda Lane in Pike County. Monitoring data for the monitors in Daviess and Pike counties are listed below. The 2008 through 2010 design values for the monitors in Daviess and Pike counties are above the new 1-hour SO<sub>2</sub> standard.

Daviess and Pike Counties, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Daviess	18-027-0002	122	138	115	125
Pike	18-125-0005	205	194	211	203
Design Value greater than or equal to 76 ppb					

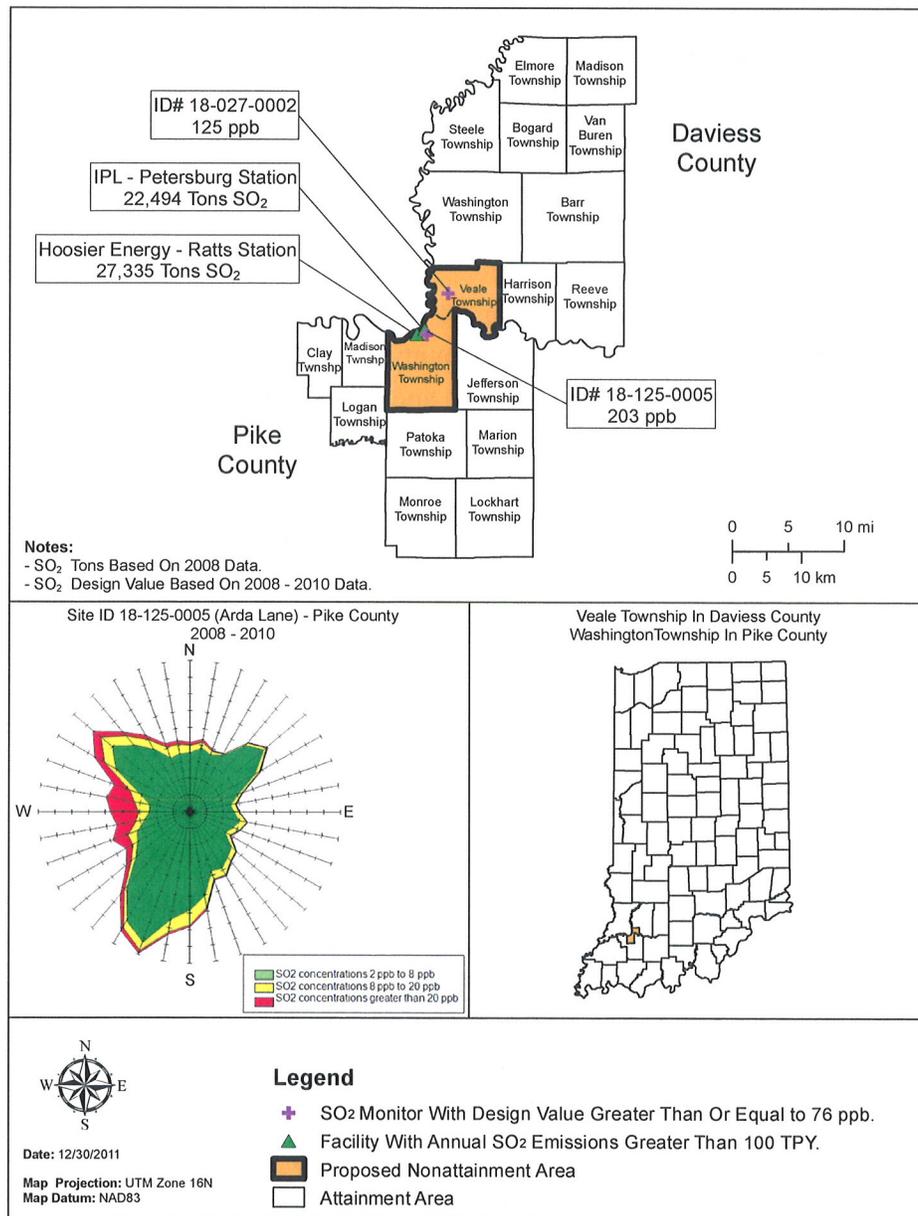
Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. There are no SO<sub>2</sub> sources in Daviess County. Within Pike County there are two sources contributing to the violation at the Daviess and Pike county monitors. Emissions information for these sources is listed in the table below.

Daviess and Pike Counties, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Pike	Hoosier Energy – Ratts	6825 North Blackburn Road	Petersburg	27,335	21,307
Pike	Indianapolis Power and Light-Petersburg	Highway 57 North	Petersburg	22,494	29,845

Indiana is recommending only Veale Township in Daviess County and Washington Township in Pike County as the nonattainment area. Veale Township in Daviess County encompasses one of the monitored violations and Washington Township in Pike County encompasses the other monitored violation. Washington Township in Pike County also includes the only sources contributing to the monitored violations. Using Veale and Washington Townships as the nonattainment area also includes any potential minor contributions to the monitored violations. The wind rose analysis detailed in the map below supports the fact that Hoosier Energy – Ratts and IPL – Petersburg are the only contributing sources directly upwind of the monitored violations. The detailed wind rose below supports Indiana's recommendation that Veale

Township in Daviess County and Washington Township in Pike County should be used as the nonattainment boundaries for Daviess and Pike counties. The highest SO<sub>2</sub> concentrations at the monitors in Daviess and Pike counties come from the west wind direction. Hoosier Energy – Ratts and IPL – Petersburg are located directly west and southwest of the Daviess and Pike county monitors and are the only contributing sources to the monitored violations. Veale Township in Daviess County and Washington Township in Pike County include both of the monitored violations and the contributing sources. Therefore, Indiana recommends Veale Township in Daviess County and Washington Township in Pike County as the boundaries for the nonattainment area.

### Assessment of the SO<sub>2</sub> Standard for Daviess and Pike Counties



## Floyd County

Within Southeast Indiana there are three SO<sub>2</sub> monitors located in Floyd County. The SO<sub>2</sub> monitor Site ID # 18-043-0004, also known as the Bald Knob monitor, is located at Wiley Tower on Bald Knob Road. The SO<sub>2</sub> monitor Site ID # 18-043-0007, also known as the Falling Run monitor, is located at the Duke Energy Indiana – Gallagher Generating Station in Floyd County. The SO<sub>2</sub> monitor Site ID # 18-043-1004, also known as the Green Valley monitor, is located at the Green Valley Elementary School at 2230 Green Valley Road in New Albany, Indiana. Monitoring data for the Bald Knob, Falling Run, and Green Valley monitors are listed below. The 2008 through 2010 design values for all three monitors in Floyd County are above the new 1-hour SO<sub>2</sub> standard.

The Green Valley SO<sub>2</sub> monitoring site is downwind of the Duke Energy Indiana-Gallagher Generating Station in Floyd County. This monitor records approximately the same ambient levels of SO<sub>2</sub> as the Falling Run monitor which is located at the generating station. The Falling Run monitor does not support meteorological monitoring and was discontinued at the end of 2010 since it would not be suitable in terms of cost effectiveness to meet the requirements of the new 1-hour SO<sub>2</sub> standard monitoring requirements. With the continuation of monitoring at the Green Valley and Bald Knob monitors, all monitoring requirements in Southeast Indiana will be met for the 1-hour SO<sub>2</sub> standard.

Floyd County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Floyd	18-043-0004	117	87	72	92
Floyd	18-043-0007*	192	68	75	112
Floyd	18-043-1004	138	125	123	129
*Monitor Discontinued in 2010 Design Value greater than or equal to 76 ppb					

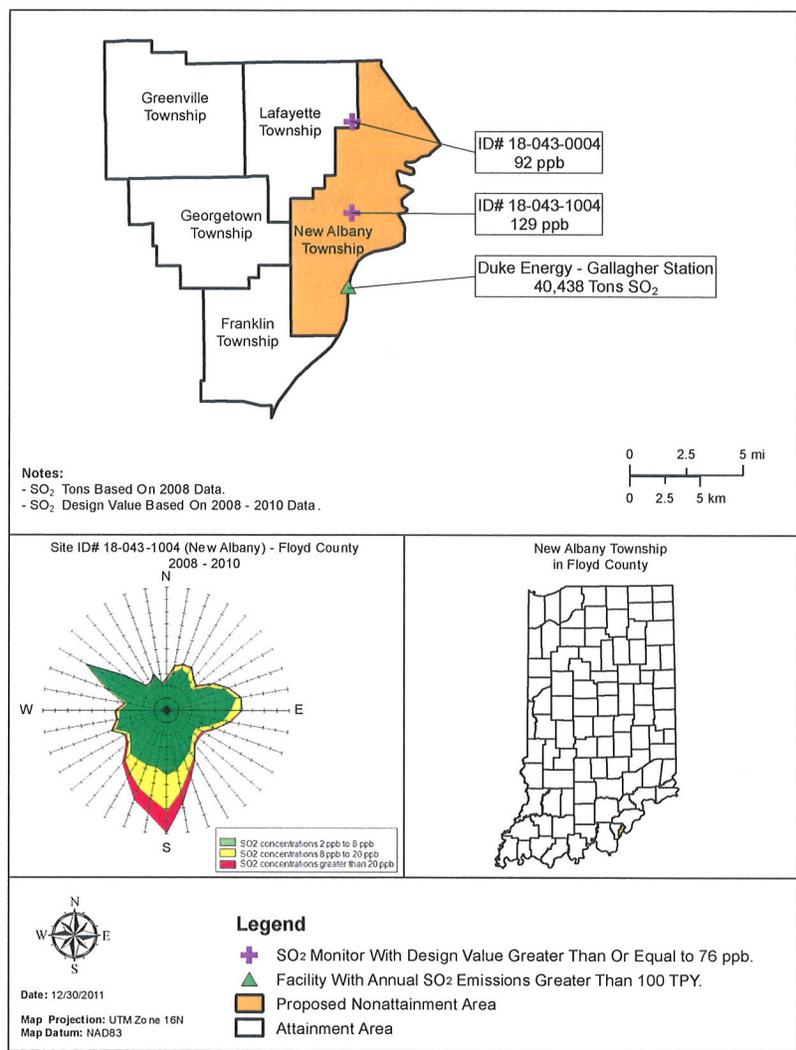
Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. Duke Energy – Gallagher in New Albany, Indiana is the only SO<sub>2</sub> source within Floyd County contributing to the violation at the Bald Knob, Falling Run, and Green Valley monitors. Emissions information for Duke Energy – Gallagher is listed in the table below.

Floyd County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Floyd	Duke Energy – Gallagher	Jackson Street	New Albany	40,438	23,088

Indiana is recommending only New Albany Township in Floyd County as the nonattainment area. New Albany Township encompasses the highest (controlling) monitored violation and the

only source contributing to the monitored violations. The wind rose analysis detailed in the map below supports the fact that Duke Energy-Gallagher is the only contributing source directly upwind of the monitored violation. The detailed wind rose below supports Indiana's recommendation that New Albany Township should be used as the nonattainment boundary for Floyd County. The highest SO<sub>2</sub> concentrations at the Bald Knob and Green Valley monitors come from the south wind direction. Duke Energy – Gallagher is located directly south of the Bald Knob and Green Valley monitors and is the only contributing Indiana source to the monitored violations. There are no other sources of SO<sub>2</sub> in Floyd County and New Albany Township includes both the controlling monitor and the contributing source. Therefore, Indiana recommends New Albany Township as the boundary for the nonattainment area.

### Assessment of the SO<sub>2</sub> Standard for Floyd County



**Note:** The Falling Run monitor is not listed on this map since it was discontinued at the end of 2010.

## Fountain and Vermillion Counties

Within West Central Indiana there is one SO<sub>2</sub> monitor located in Fountain County. The SO<sub>2</sub> monitor Site ID # 18-045-0001 is located north of State Road 234 and east of the Wabash River in Fountain County. There are no SO<sub>2</sub> monitors in Vermillion County. Monitoring data for the monitor in Fountain County is listed below. The 2008 through 2010 design value for the Fountain County monitor is above the new 1-hour SO<sub>2</sub> standard.

The monitor in Fountain County is a source-oriented site, located near the Duke Energy-Cayuga Generating Station and was discontinued at the end of 2010. The temporary shutdown of the monitor was based on a decrease in SO<sub>2</sub> emissions due to the installation of a flue-gas desulfurization (FGD) scrubber on each unit in 2008. This control mechanism drastically reduced the SO<sub>2</sub> emissions from the Duke Energy-Cayuga Generating Station to approximately 2,500 tons per year, meaning the facility was no longer subject to monitoring requirements under the Indiana Administrative Code (IAC) at 326 IAC 7-3-2. The source has agreed to continue monitoring and the Fountain County monitor began operating again in March 2011. With the installation of the FGDs at the Duke Energy-Cayuga Generating Station, Indiana expects that the SO<sub>2</sub> monitoring data at the Fountain County monitor will continue to decline and will attain the new 1-hour SO<sub>2</sub> standard in the near future.

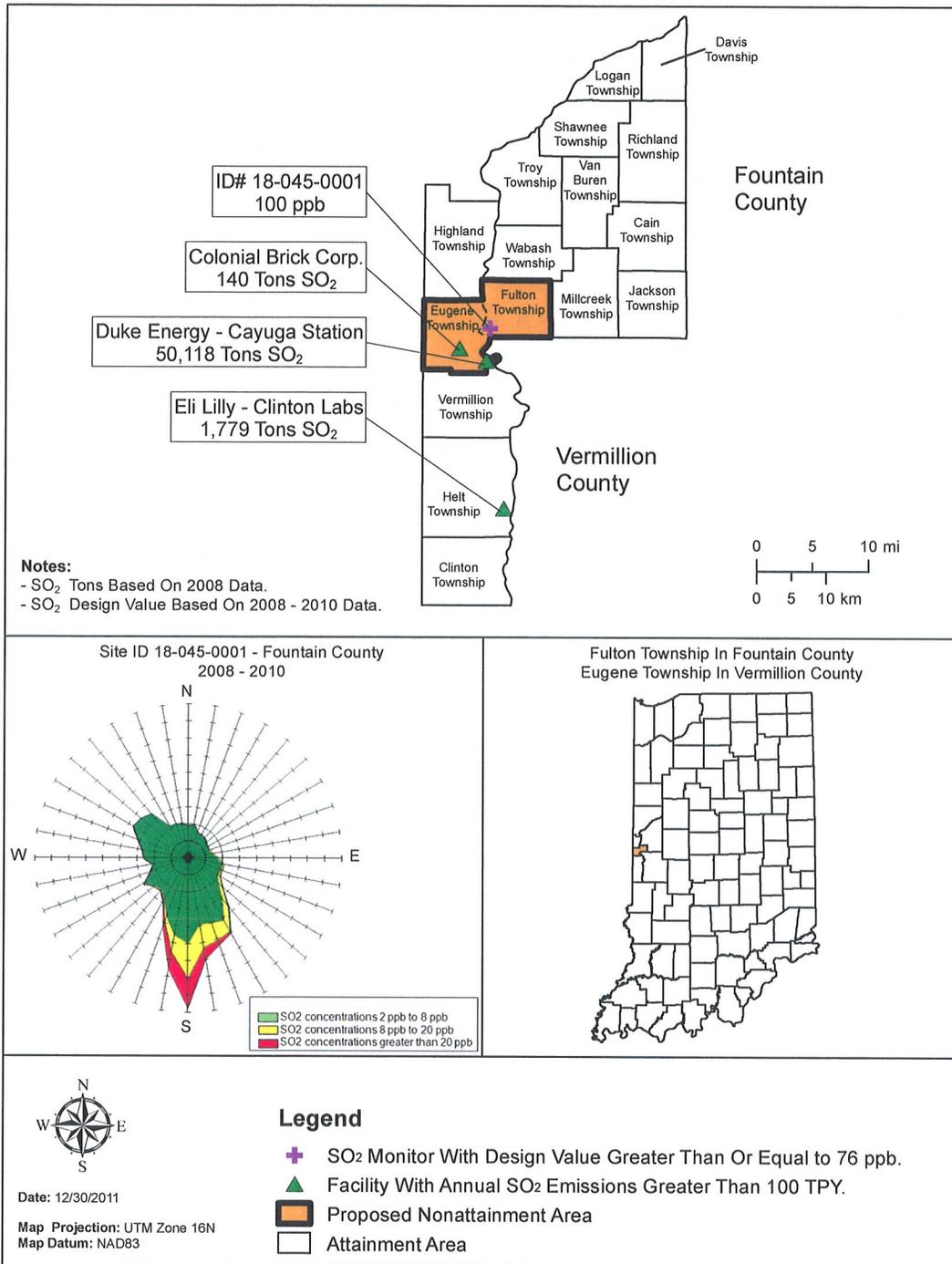
Fountain County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Fountain	18-045-0001	236	38	26	100
Design Value greater than or equal to 76 ppb					

Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. There are no SO<sub>2</sub> sources in Fountain County. Indiana evaluated three sources over 100 tons of SO<sub>2</sub> per year in nearby Vermillion County. The three sources in Vermillion County have the potential to contribute to the monitored violation in Fountain County. Emissions information for the three sources in Vermillion County is listed in the table below.

Vermillion County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Vermillion	Duke Energy – Cayuga	State Road 63	Cayuga	50,118	2,015
Vermillion	Eli Lilly & Company – Clinton Labs	10500 South State Road 63	Clinton	1,779	2,078
Vermillion	Colonial Brick Corporation	817 West Park	Cayuga	140	64

Indiana recommends only Fulton Township in Fountain County and Eugene Township in Vermillion County as the nonattainment area. Fulton Township in Fountain County encompasses the monitored violation and Eugene Township in Vermillion County encompasses the two larger sources that contribute to the monitored violation. The wind rose analysis detailed in the map below supports the fact that Duke Energy – Cayuga and Eli Lilly are the only contributing sources directly upwind of the monitored violation. The detailed wind rose below supports Indiana’s recommendation that Fulton Township in Fountain County and Eugene Township in Vermillion County be used as the boundaries for the nonattainment area. The highest SO<sub>2</sub> concentrations at the Fountain County monitor come from the south wind direction. Duke Energy- Cayuga is located directly south of the Fountain County monitor and contributes to the monitored violation. Colonial Brick Corporation is located southwest and Eli Lilly is located further south of the monitored violation. While there are some high values shown in the wind rose coming from the southwest wind direction, the majority of the concentrations occurred more often from the south wind direction, indicating the Duke Energy – Cayuga facility contribution outweighs that from Colonial Brick Corporation or Eli Lilly. Emissions data from 2008 also supports this fact. Therefore, Indiana recommends Fulton Township in Fountain County and Eugene Township in Vermillion County as the boundaries for the nonattainment area.

## Assessment of the SO<sub>2</sub> Standard for Fountain and Vermillion Counties



## Gibson County

Within Southwest Indiana, there are two monitors in Gibson County. The SO<sub>2</sub> monitor Site ID # 18-051-0001, also known as the Gibson Tower monitor, is located at the Duke Energy – Gibson facility. and the SO<sub>2</sub> monitor Site ID # 18-051-0002 is located northeast of Duke Energy – Gibson on Gibson Coal Road. Monitoring data for the monitors in Gibson County are listed below. The monitor on Gibson Coal Road is the only monitor with a 2008 through 2010 design value above the new 1-hour standard.

An additional monitor is located across the state line in Mount Carmel, Illinois, near Duke Energy – Gibson. With the permission of U.S. EPA, the Gibson Tower monitor in Gibson County was discontinued at the end of 2010, with the stipulation that a meteorological monitoring site in Mount Carmel, IL be established. This satisfied all SO<sub>2</sub> monitoring requirements in Southwest Indiana.

Gibson County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Gibson	18-051-0001*	56	44	45	48
Gibson	18-125-0002	90	65	74	76
Wabash, IL	17-185-0001	90	69	66	75
*Monitor Discontinued in 2010 Design Value greater than or equal to 76 ppb Illinois Monitor					

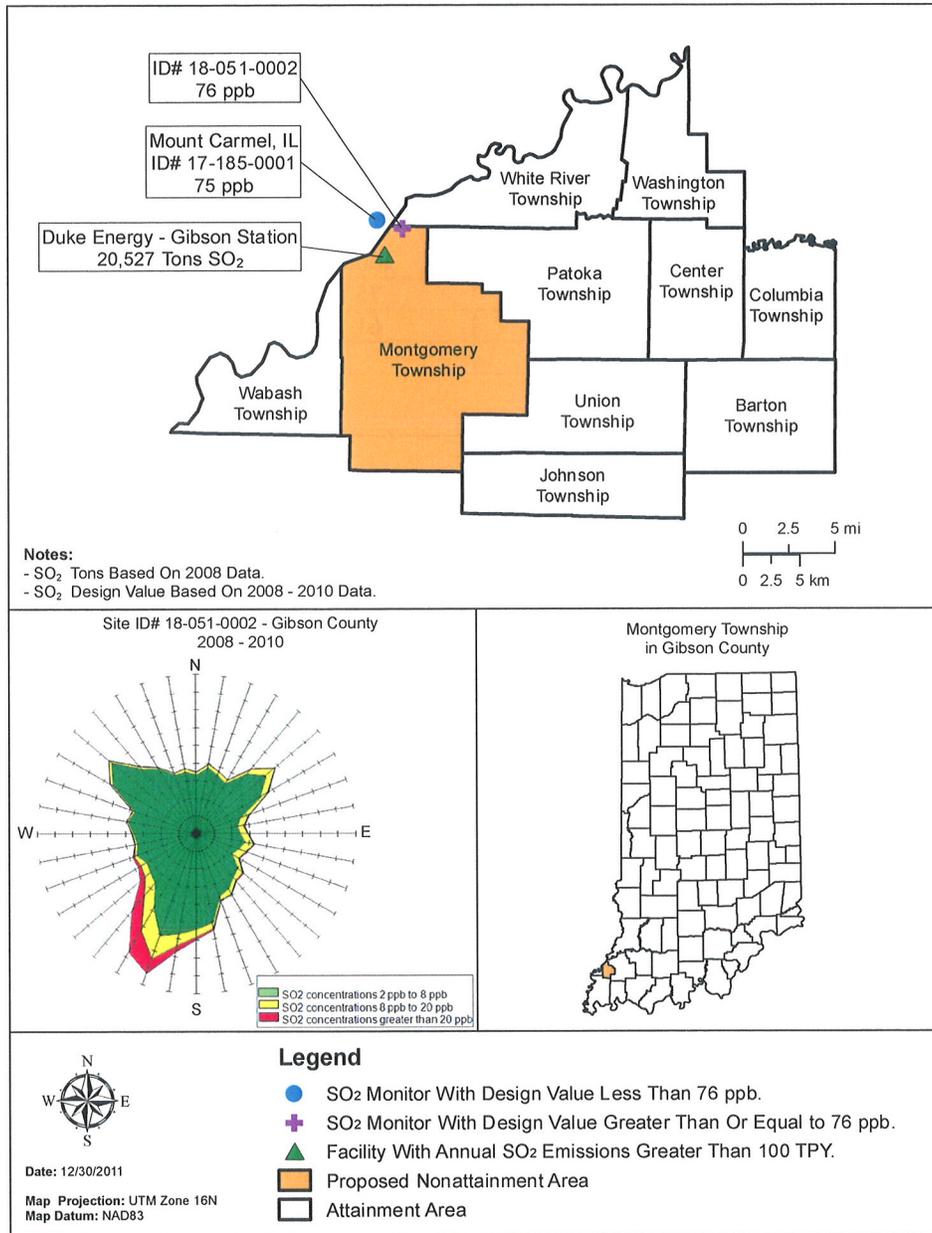
Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. Duke Energy – Gibson is the only source within Gibson County contributing to the violation at the Gibson Coal Road monitor in Gibson County. Emissions information for Duke Energy - Gibson is listed in the table below.

Gibson County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Gibson	Duke Energy Indiana-Gibson	State Road 64	Princeton	20,527	21,874

Indiana is recommending only Montgomery Township in Gibson County as the nonattainment boundary. Montgomery Township encompasses the monitored violation and the only source within the entire county that contributes to the monitored violation. The wind rose analysis detailed in the map below supports the fact that Duke Energy – Gibson is the only contributing source directly upwind of the monitored violation. The detailed wind rose below supports Indiana’s recommendation that Montgomery Township should be used as the nonattainment boundary for Gibson County. The highest SO<sub>2</sub> concentrations at the Gibson Coal Road monitor

come from the south-southwest wind direction. Duke Energy – Gibson is located directly south-southwest of the Gibson Coal Road monitor and is the only contributing source to the monitored violation. There are no other sources for SO<sub>2</sub> in Gibson County and Montgomery Township includes both the monitored violation and the contributing source. Therefore, Indiana recommends Montgomery Township in Gibson County as the boundary for the nonattainment area.

### Assessment of the SO<sub>2</sub> Standard for Gibson County



**Note:** The Gibson Tower monitor is not listed on this map since it was discontinued at the end of 2010.

## Marion County

Within Central Indiana there are three SO<sub>2</sub> monitors located in Marion County. The SO<sub>2</sub> monitor Site ID # 18-097-0057, also known as the Harding Street monitor, is located at 1321 South Harding Street in Indianapolis, Indiana. The SO<sub>2</sub> monitor Site ID # 18-097-0073, also known as the E. 16<sup>th</sup> Street monitor, is located at 6125 East 16<sup>th</sup> Street in Indianapolis, Indiana. The SO<sub>2</sub> monitor Site ID # 18-097-0078, also known as the Washington Park monitor, is located at 3120 E. 30<sup>th</sup> Street in Indianapolis, Indiana. Monitoring data for the Harding Street, E. 16<sup>th</sup> Street and Washington Park monitors are listed below. The 2008 through 2010 design value for the Harding Street monitor is above the new 1-hour SO<sub>2</sub> standard. The 2008 through 2010 design value for the E. 16<sup>th</sup> Street monitor is below the new 1-hour SO<sub>2</sub> standard. The Washington Park monitor began operation in 2010, so the 2008 through 2010 design value cannot be determined.

Marion County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Marion	18-097-0057	79	75	103	86
Marion	18-097-0073	29	61	48	46
Marion	18-097-0078			20*	N/A
* Not a complete year of data Design Value greater than or equal to 76 ppb					

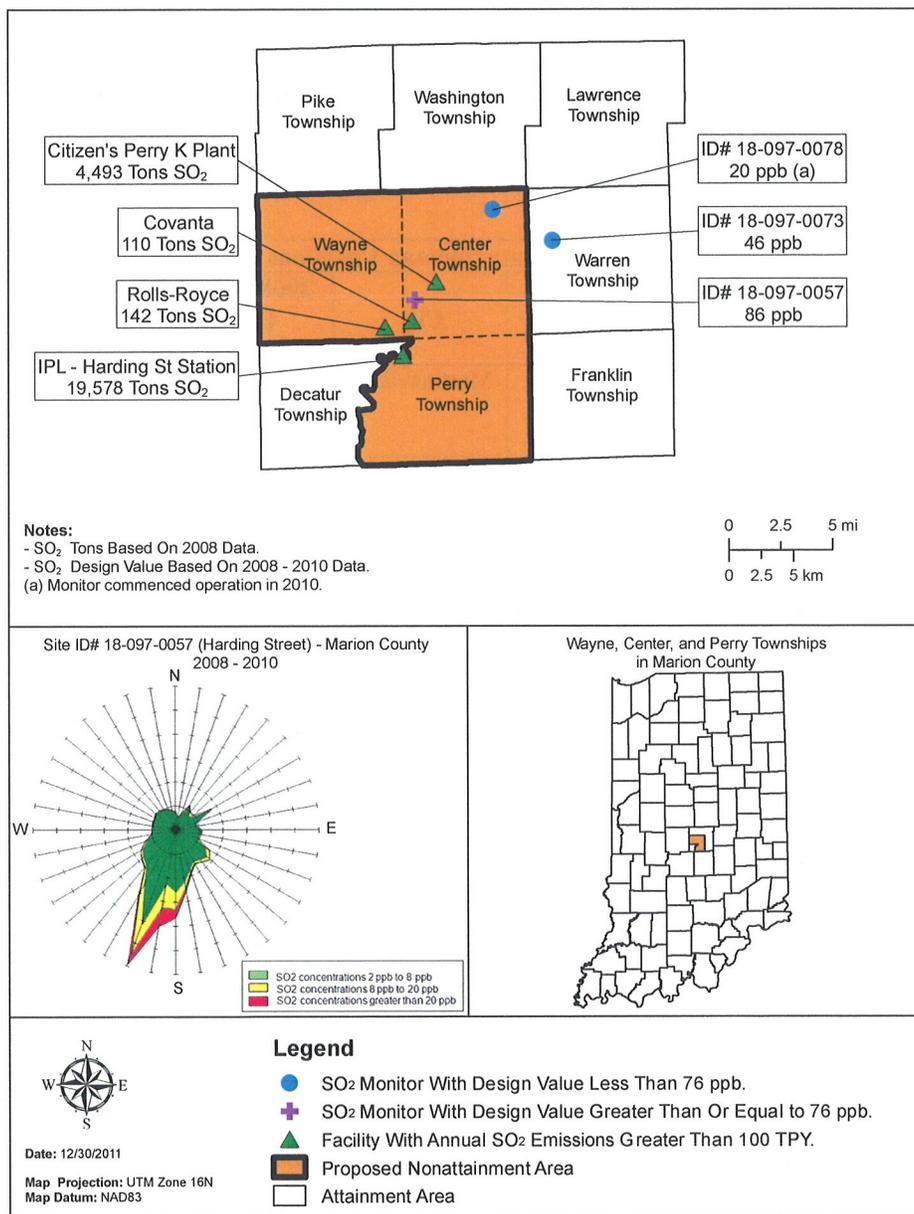
Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. Within Marion County there are four sources contributing to the violation at the Harding Street monitor. Emissions information for these four sources is listed in the table below.

Marion County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Marion	Indianapolis Power and Light – Harding Street	3700 South Harding Street	Indianapolis	19,578	21,667
Marion	C.C. Perry K Steam Plant	366 Kentucky Avenue	Indianapolis	4,493	4,824
Marion	Rolls-Royce Corporation	2355 & 2001 S. Tibbs Avenue	Indianapolis	142	65
Marion	Covanta Indianapolis, Inc.	2320 South Harding Street	Indianapolis	110	114

Indiana is recommending only Center, Perry, and Wayne Townships in Marion County as the nonattainment area. These three townships encompass the monitored violation and the only sources that are contributing to the Harding Street monitored violation. Using these three townships as the nonattainment area also includes any potential minor contributions to the monitored violation. The wind rose analysis detailed in the map below supports the fact that the

Indianapolis Power and Light (IPL) – Harding Street is the largest source directly upwind of the monitored violation. The detailed wind rose below supports Indiana’s recommendation that Center, Perry, and Wayne Townships should be used as the nonattainment boundaries for Marion County. The highest SO<sub>2</sub> concentrations at the Harding Street monitor come from the south-southwest wind direction. IPL – Harding Street is located south-southwest of the Harding Street monitor and is contributing to the monitored violation. Rolls-Royce and Covanta are located generally downwind of the monitored violation. Center, Perry, and Wayne Townships include the monitored violation and all of the contributing sources. Therefore, Indiana recommends Center, Perry, and Wayne Townships as the boundaries for the nonattainment area.

### Assessment of the SO<sub>2</sub> Standard for Marion County



## Morgan County

Within Central Indiana there is one SO<sub>2</sub> monitor located in Morgan County. The SO<sub>2</sub> monitor Site ID # 18-109-1001, also known as the Martinsville monitor, is located at 6075 High Street in Martinsville in Morgan County, Indiana. Monitoring data for the Martinsville monitor is listed below. The 2008 through 2010 design value for the Martinsville monitor is above the new 1-hour SO<sub>2</sub> standard.

Morgan County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Morgan	18-109-1001	91	98	105	98
Design Value greater than or equal to 76 ppb					

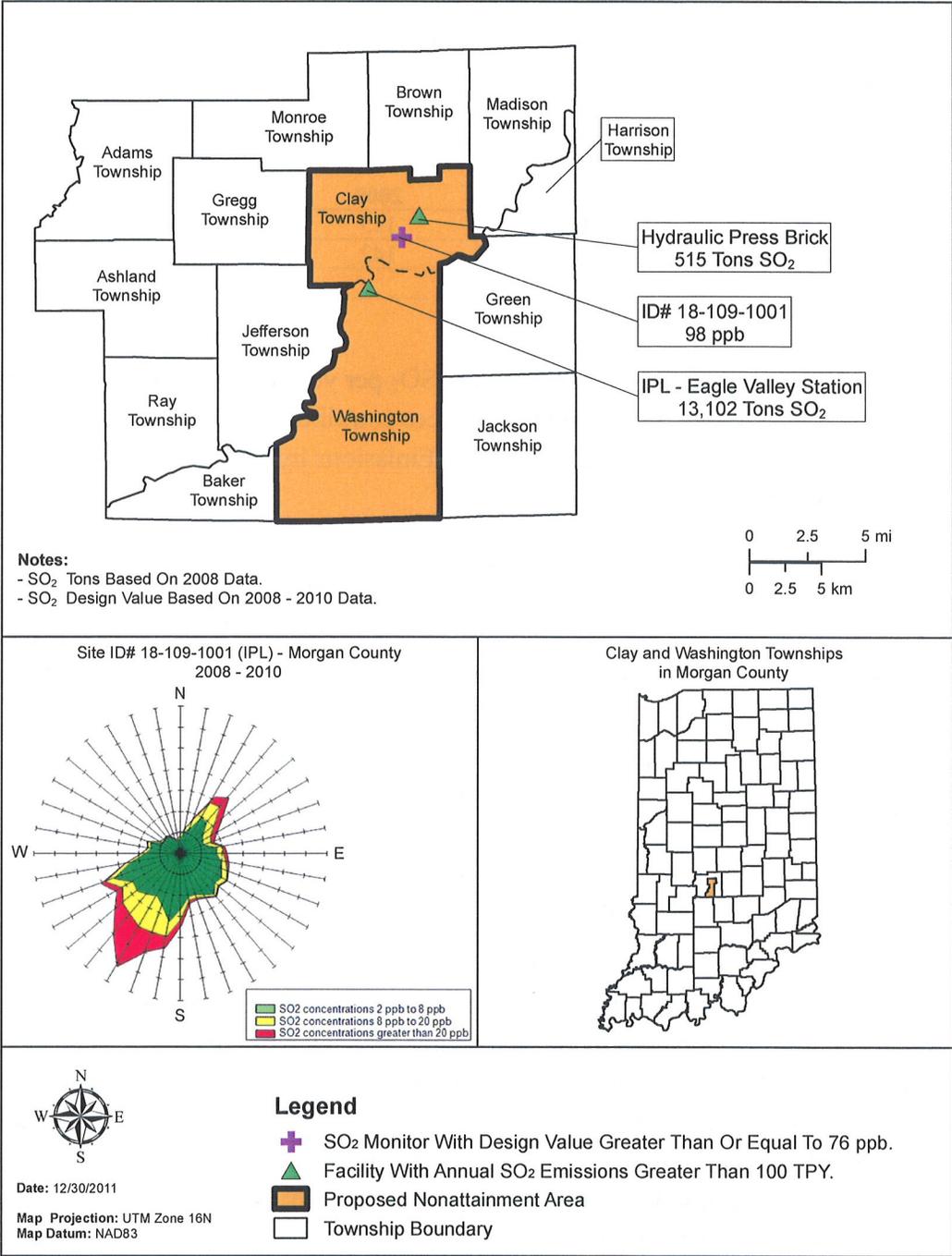
Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. Within Morgan County there are two sources contributing to the violation at the Martinsville monitor. Emissions information for these sources is listed in the table below.

Morgan County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Morgan	Indianapolis Power and Light – Eagle Valley	4040 Blue Bluff Road	Martinsville	13,102	12,265
Morgan	Hydraulic Press Brick Company	6618 North Tidewater	Mooreville	515	350

Indiana is recommending Clay and Washington Townships in Morgan County as the nonattainment area. Clay Township encompasses the monitored violation and the largest source and Washington Townships encompasses the other smaller source that contributes to the monitored violation. The wind rose analysis detailed in the map below supports the fact that Indianapolis Power and Light (IPL) – Eagle Valley and Hydraulic Press Brick Company are the only contributing sources to the monitored violation. The detailed wind rose below supports Indiana’s recommendation that Clay and Washington Townships should be used as the nonattainment boundary for Morgan County. The highest SO<sub>2</sub> concentrations at the Martinsville monitor come from the north-northeast and south-southwest wind directions. IPL – Eagle Valley is located directly south-southwest of the Martinsville monitor and is contributing to the monitored violation. Hydraulic Press Brick Company is located directly north-northeast of the monitored violation and also contributes to the monitored violation. Clay and Washington Townships include both the monitored violation and the two contributing sources. Therefore, Indiana recommends Clay and Washington Townships as the boundaries for the nonattainment area.

Indiana would also like to recommend to U.S. EPA that Clay and Washington Townships in Morgan County be considered a separate, independent nonattainment area from the three townships in Marion County. Locations of the monitors and their contributing sources support this argument.

**Assessment of the SO<sub>2</sub> Standard for Morgan County**



## Vigo County

Within West Central Indiana there are two SO<sub>2</sub> monitors located in Vigo County. The SO<sub>2</sub> monitor Site ID # 18-167-0018, also known as the Lafayette Avenue monitor, is located at 961 North Lafayette Avenue and the SO<sub>2</sub> monitor Site ID # 18-167-1014, also known as the Ft. Harrison Road monitor, is located on Ft. Harrison Road, both in Terre Haute, Indiana.

Monitoring data for the Lafayette Avenue and Ft. Harrison Road monitors are listed below. The 2008 through 2010 design values for both of the monitors in Vigo County are above the new 1-hour SO<sub>2</sub> standard.

Vigo County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Vigo	18-167-0018	120	115	61	99
Vigo	18-167-1014	137	142	169	149
Design Value greater than or equal to 76 ppb					

Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. Within Vigo County, there are three sources contributing to the violations at the Lafayette Avenue and Ft. Harrison Road monitors. Emissions information for these sources is listed in the table below.

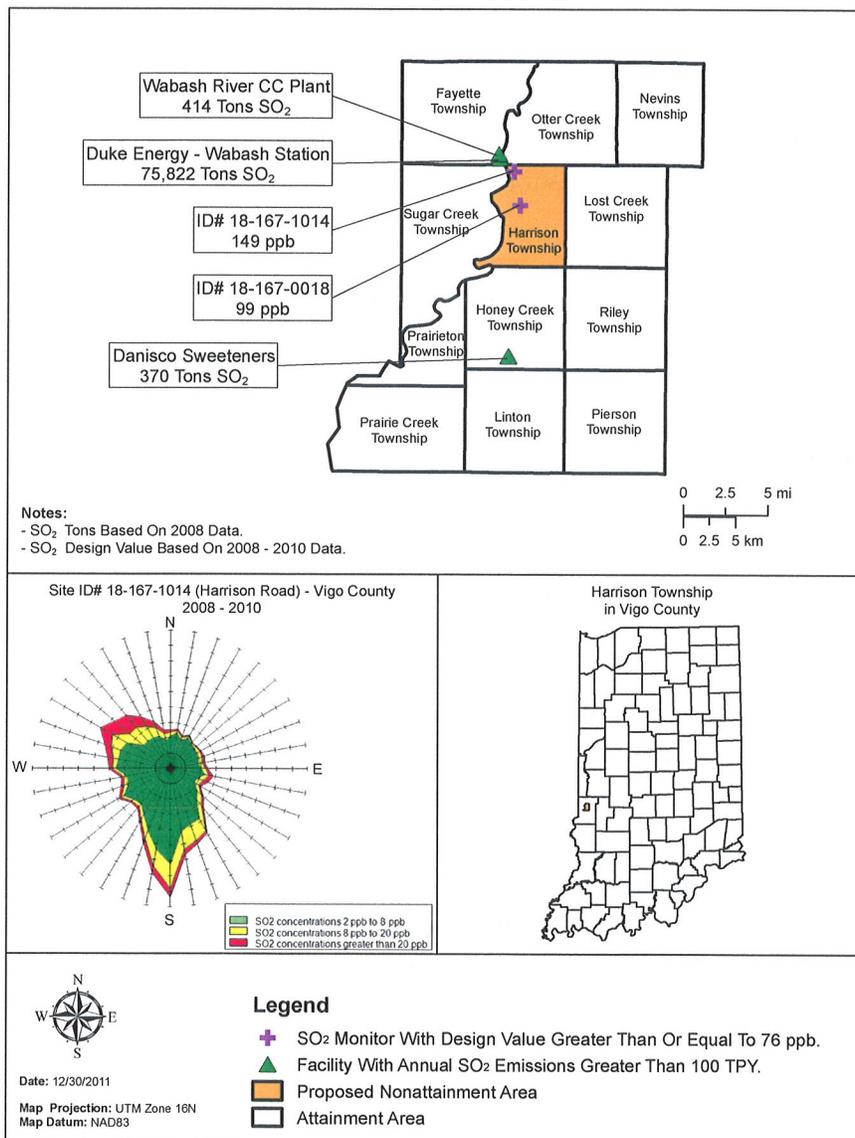
Vigo County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Vigo	Duke Energy – Wabash River	450 Bolton Road	West Terre Haute	75,822	46,209
Vigo	Wabash River Combined Cycle Plant	445 Bolton Road	Terre Haute	414	479*
Vigo	Danisco Sweeteners	160 West Dallas Drive	Terre Haute	370	0

\*2009 Actual SO<sub>2</sub> Emissions (Tons Per Year)

Indiana is recommending only Harrison Township in Vigo County as the nonattainment area. Harrison Township encompasses both of the monitored violation. Using Harrison Township as the nonattainment area also includes the largest source and any potential minor contributions within the township that may be contributing to the monitored violation. The wind rose analysis detailed in the map below supports the fact that Duke Energy, Wabash River Combined Cycle Plant, and Danisco Sweeteners are the only contributing sources to the monitored violation. The detailed wind rose below supports Indiana's recommendation that Harrison Township should be used as the nonattainment boundary for Vigo County. The highest SO<sub>2</sub> concentrations at the Lafayette Avenue and Ft. Harrison Road monitors come from the northwest wind direction. Both Duke Energy and Wabash River Combined Cycle Plant are located directly northwest of

the Lafayette Avenue and Ft. Harrison Road monitors and are contributing to the monitored violations. Danisco Sweeteners is located south of the monitored violation and while there are some high values shown in the wind rose coming from this wind direction, the majority of the concentrations occurred more often from the northwest wind direction indicating Duke Energy and Wabash River Combined Cycle Plant contribute more to the monitored violations than Danisco Sweeteners. Emissions data from 2008 also supports the fact that Duke Energy and Wabash River Combined Cycle Plant are larger contributors to the monitored violations. Harrison Township includes both of the monitored violations. Therefore, Indiana recommends Harrison Township as the boundary for the nonattainment area.

### Assessment of the SO<sub>2</sub> Standard for Vigo County



## Wayne County

Within East Central Indiana there is only one SO<sub>2</sub> monitor Site ID # 18-177-0006, also known as the Richmond monitor, located at 1321 South 9<sup>th</sup> Street in Richmond in Wayne County, Indiana. Monitoring data for the Richmond monitor is listed below. The 2008 through 2010 design value for the Richmond monitor is above the new 1-hour SO<sub>2</sub> standard.

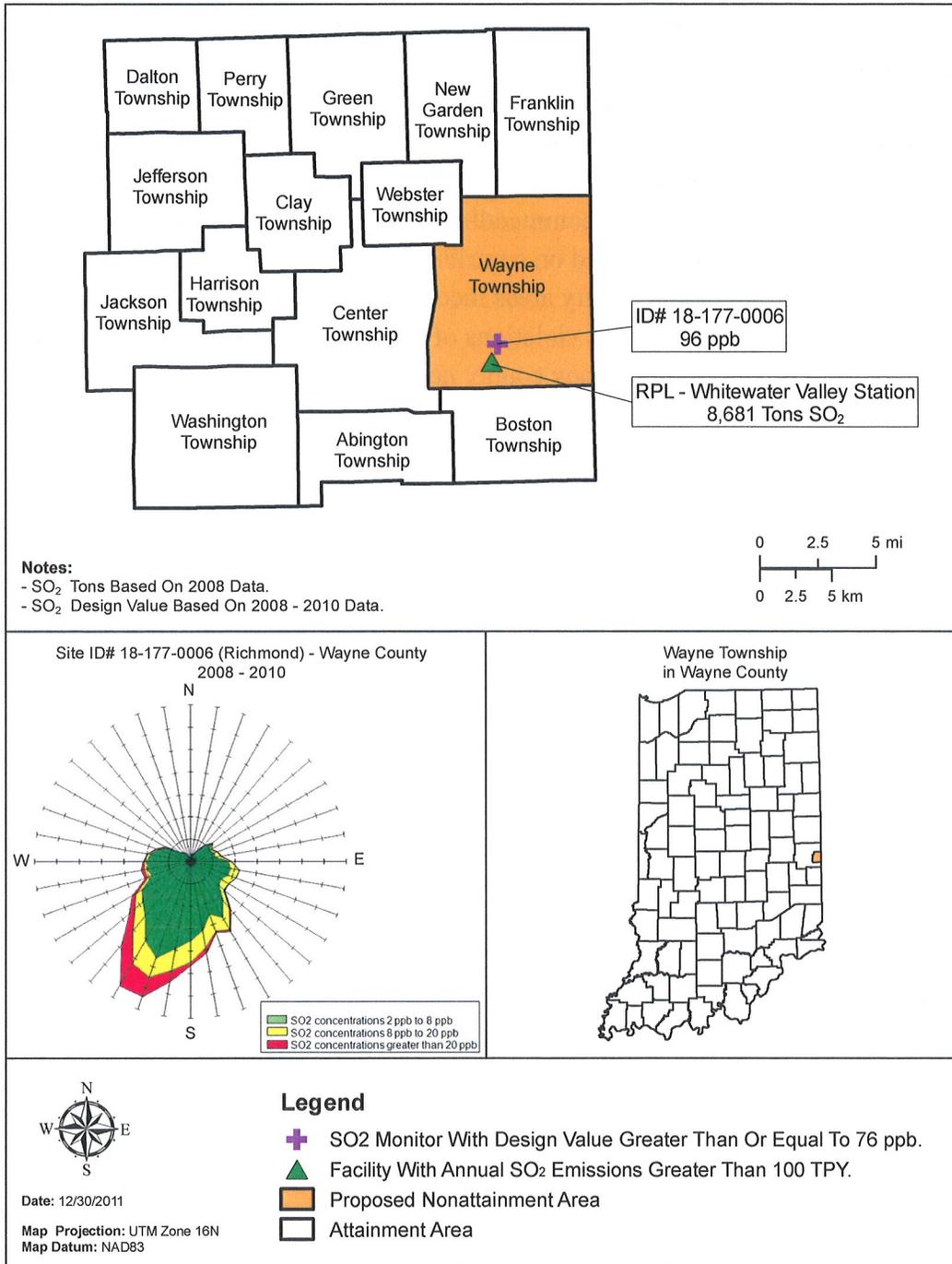
Wayne County, Indiana Monitoring Data					
County	Site ID	2008	2009	2010	2008-2010 Design Value
Wayne	18-177-0006	109	70	109	96
Design Value greater than or equal to 76 ppb					

Indiana evaluated sources that had over 100 tons of SO<sub>2</sub> per year within 50 km of the monitored violation. The Richmond Power and Light (RPL) – Whitewater Valley Station in Richmond, Indiana is the only SO<sub>2</sub> source within Wayne County contributing to the violation at the Richmond monitor. Emissions information for RPL – Whitewater Valley Station is listed in the table below.

Wayne County, Indiana Emissions					
County	Facility	Address	City	2008 Actual SO <sub>2</sub> Emissions (Tons Per Year)	2010 Actual SO <sub>2</sub> Emissions (Tons Per Year)
Wayne	RPL – Whitewater Valley Station	2000 U.S. 27 South	Richmond	8,681	4,806

Indiana is recommending only Wayne Township in Wayne County as the nonattainment area. Wayne Township encompasses the monitored violation and the only source within the entire county that contributes to the monitored violation. The wind rose analysis detailed in the map below supports the fact that RPL – Whitewater Valley Station is the only contributing source directly upwind of the monitored violation. The detailed wind rose below supports Indiana's recommendation that Wayne Township should be used as the nonattainment boundary for Wayne County. The highest SO<sub>2</sub> concentrations at the Richmond monitor come from the south-southwest wind direction. RPL – Whitewater Valley Station is located directly south-southwest of the Richmond monitor and is the only contributing source to the monitored violation. There are no other sources of SO<sub>2</sub> in Wayne County, and Wayne Township includes both the monitored violation and the contributing source. Therefore, Indiana recommends Wayne Township as the boundary for the nonattainment area.

## Assessment of the SO<sub>2</sub> Standard for Wayne County



## **Summary of Recommendations**

There are nine counties that contain monitors which currently measure ambient concentrations above the new 1-hour SO<sub>2</sub> standard based on data from 2008 through 2010. Those counties are Daviess, Floyd, Fountain, Gibson, Marion, Morgan, Pike, Vigo, and Wayne counties. Indiana is only recommending townships within these nine counties to be classified as nonattainment based on the monitored violations and location of sources contributing to the monitored violations. Indiana is also recommending that Eugene Township in Vermillion County be classified nonattainment based on contributions to the monitor in Fountain County. Indiana thinks that these ten partial county areas incorporate the controlling monitor and all sources likely contributing to monitored violations of the standard within 50 km of a violating monitor site. Indiana is requesting that any county not outlined in this enclosure be designated as unclassifiable.