REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE OHIO PORTION OF THE CAMPBELL-CLERMONT COUNTIES, KY-OH 1-HOUR SO_2 NONATTAINMENT AREA

Partial Clermont County, Ohio

Prepared by:
Ohio Environmental Protection Agency
Division of Air Pollution Control

August 2015

This page left intentionally blank

TABLE OF CONTENTS

CHAPTER ONE: Introduction 1

History 1
Geographical Description and Background 2
Status of Air Quality 2

CHAPTER TWO: Requirements for Redesignation 3

1. Attainment of the standard (CAA Section 107(d)(3)(E)(i)) 3
2. Approved SIP for the area under CAA Section 110(k) (CAA Section 107(d)(3)(E)(ii)) 4
3. Permanent and enforceable improvement in air quality (CAA Section 107(d)(3)(E)(iii)) 4
4. Maintenance plans (CAA Section 107(d)(3)(E)(iv)) 4
5. Section 110 and Part D requirements (CAA Section 107(d)(3)(E)(v)) 5
   a. Section 110(a) requirements 5
   b. Part D requirements 6
      i. Section 172(c) requirements 6
      ii. Conformity 7

CHAPTER THREE: SO_2 Monitoring 9

Requirement 1 of 4: A demonstration that the NAAQS for 1-hour SO_2, as published in 40 CFR 50.17, has been attained. 9
Requirement 2 of 4: Ambient monitoring data quality assured in accordance with 40 CFR 58.10, recorded in the AQS database, and available for public view. 10
Requirement 3 of 4: A commitment that once redesignated, the state will continue to operate an appropriate monitoring network to verify the maintenance of the attainment status. 11
Requirement 4 of 4: Supplemental U.S. EPA-approved air quality modeling to show monitors are located in the area of maximum concentration. 11

CHAPTER FOUR: Emission Inventory 16

Requirement 1 of 4: A comprehensive emission inventory of SO_2 completed for the base year and a projection of the emission inventory to a year at least 10 years following redesignation. 16
Requirement 2 of 4: A demonstration that the projected level of emissions is sufficient to maintain the SO_2 standard. 18
Requirement 3 of 4: A demonstration that improvement in air quality between the year violations occurred and the year attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology. 20
Requirement 4 of 4: Provisions for future annual updates of the inventory to enable

tracking of the emission levels, including an annual emission statement from major sources. 23
Requirement 1 of 6: Section 172(c)(1) of the 1990 Clean Air Act Amendments requires states with nonattainment areas to implement RACM and RACT. 24
Requirement 2 of 6: Section 172(c)(2) of the 1990 CAA Amendments requires attainment demonstration SIPs for nonattainment areas to show RFP. 25
Requirement 3 of 6: Section 172(c)(3) requires states to submit a comprehensive inventory of actual emissions. 25
Requirement 4 of 6: Evidence that control measures required in past SO_2 SIP revisions have been fully implemented. 26
Requirement 5 of 6: Acceptable provisions to provide for new source review. 27
Requirement 6 of 6: Assure that all existing control measures will remain in effect after redesignation unless the state demonstrates through modeling that the standard can be maintained without one or more control measures. 28

CHAPTER SIX: Contingency Measures 28

Requirement 1 of 4: A commitment to submit a revised plan eight years after redesignation. 29
Requirement 2 of 4: A commitment to expeditiously enact and implement additional contingency control measures in response to exceeding specified predetermined levels (triggers) or in the event that future violations of the ambient standard occur. 29
Requirement 3 of 4: A list of potential contingency measures that would be implemented in such an event. 30
Requirement 4 of 4: A list of SO_2, sources potentially subject to future additional control requirements. 32

CHAPTER SEVEN: Public Participation 33

CHAPTER EIGHT: Conclusions 34

FIGURES

Figure 1 Map of the Campbell-Clermont KY-OH nonattainment area and monitor location 9
Figure 2 2012 to 2014 Walter C. Beckjord and William H. Zimmer hourly emissions with hourly SO_2 monitoring data …. 13
Figure 3 2014 Walter C. Beckjord and William H. Zimmer hourly emissions with hourly SO_2 monitoring data ....….14
Figure 4 Walter C. Beckjord SO_2 emissions by unit and entire facility .....…21
Figure 5 Walter C. Beckjord SO_2 emissions for units B005 and B006 in 2014.....…22

TABLES

Table 1 Monitoring data for the Campbell-Clermont KY-OH area for 2012 – 2014…. 10
Table 2 Ohio portion SO_2 emission inventory totals for base year 2011, attainment 2014, and projected 2020 and 2027 (tpy) ....….17
Table 3 Kentucky portion SO_2 emission inventory totals for base year 2011, attainment 2014, and projected 2020 and 2027 (tpy) .....….18
Table 4 Combined Campbell-Clermont area SO_2 emission inventory totals for base tear 2011, attainment 2014, and projected 2020 and 2027 (tpy) .....….18
Table 5 Campbell-Clermont area comparison of 2014 attainment year and 2020 and 2027 projected emission estimates (tpy).....….19
Table 6 Campbell-Clermont KY-OH area comparison of 2011 base year and 2014 attainment year EGU reductions.....….20
Table 7 Ohio's 2011 base year inventory .....….26

APPENDICES

A-1 Kentucky DAQ Air Quality Data Certification
A-2 2012 to 2014 Air Quality Data
B Letter of Notification of Permanent Shutdown of Walter C. Beckjord Facility
C Emissions Summary and Projections
D Campbell County, Kentucky SO_2 Monitor 21-037-3002 2010-2014 Exceedance Analysis
E 2011, 2014, 2017, 2020, 2022 and 2027 SO_2 On-Road Emissions Inventory for Campbell-Clermont Counties, KY-OH 1-hour SO_2 Nonattainment Area
F Background Analysis
G Walter C. Beckjord's SO_2 Emissions for 2008 to 2014
H Public Notice and Comment Documents
I Letter of Notification of Permanent Shutdown of Walter C. Beckjord Facility, Combustion Turbines
J Supplemental Modeling Demonstration, William H. Zimmer Facility
K Analysis of Monitor Values, Emissions, and Wind Direction Data, January 1, 2012-February 28, 2015
L Letter of Notification of Permanent Shutdown of the Miami Fort Power Station Unit 6

This page left intentionally blank

REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE OHIO PORTION OF THE CAMPBELL-CLERMONT KY-OH 1-HOUR SO_2 NONATTAINMENT AREA

Partial Clermont County, Ohio

CHAPTER ONE: Introduction

History

The Clean Air Act (CAA), as amended, requires each state with areas failing to meet the 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) to develop State Implementation Plans (SIPs) to expeditiously attain and maintain the standard. The United States Environmental Protection Agency (U.S. EPA) promulgated the revised NAAQS for SO_2 on June 2, 2010. U.S. EPA replaced the 24-hour and annual standards with a new short-term 1-hour standard of 75 parts per billion (ppb). The new 1-hour SO_2 standard was published on June 22, 2010 (75 FR 35520) and became effective on August 23, 2010. The standard is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

On August 15, 2013, U.S. EPA published (78 FR 47191) the initial SO_2 nonattainment area designations for the 1-hour SO_2 standard across the country (effective October 4, 2013). Unlike Subpart 2 of the CAA Amendments of 1990 which defined five ozone nonattainment classifications for the areas that exceed the NAAQS based on the severity of the ozone levels, SO_2 nonattainment designations are simply labeled “nonattainment.” The CAA Amendments require states with SO_2 nonattainment areas to submit a plan within eighteen months of the effective date of the designations (April 4, 2015) detailing how the SO_2 standard will be attained by October 4, 2018 (referred to as an “attainment demonstration”). However, areas that attain before the required date for submitting a plan may be exempt from certain otherwise applicable requirements.

Section 107(d)(3)(E) of the CAA allows states to request nonattainment areas to be redesignated to attainment provided certain criteria are met. The following are the criteria that must be met in order for an area to be redesignated from nonattainment to attainment:

1. A determination that the area has attained the SO_2 standard. (CAA Section 107(d)(3)(E)(i))
2. An approved SIP for the area under Section 110(k). (CAA Section 107(d)(3)(E)(ii))
3. A determination that the improvement in air quality is due to permanent and enforceable reductions in emissions

resulting from implementation of the SIP, federal requirements, and other permanent and enforceable reductions. (CAA Section 107(d)(3)(E)(iii))

4. A fully approved maintenance plan, including a contingency plan, under Section 175A. (CAA Section 107(d)(3)(E)(iv))
5. A determination that all Section 110 and Part D requirements have been met. (CAA Section 107(d)(3)(E)(v))

Each of these criteria is discussed in more detail under Chapter Two with a detailed analysis in subsequent chapters. This document is intended to support Ohio's request that the Ohio portion of the Campbell-Clermont KY-OH area be redesignated from nonattainment to attainment for the 1-hour SO_2 standard. This document addresses each of above requirements, and provides additional information to support continued compliance with the 1-hour SO_2 standard.

Geographical Description and Background

The current Campbell-Clermont KY-OH nonattainment area is located in southwestern Ohio and the following area in Campbell County, Kentucky that lies south and west of the Ohio River: beginning at geographic coordinates 38.9735 North Latitude, 84.3017 West Longitude (NAD 1983) on the edge of the Ohio River running southwesterly to KY Highway 1566; thence continuing running southwesterly along KY Highway 1566 to KY Highway 9 (AA Highway); thence running north westerly along KY Highway 9 (AA Highway) from Hwy 1566 to Interstate 275; thence running northeasterly along Interstate 275 to Highway 2345 (John's Hill Road), Hwy 2345 to US–27, US–27 to I–275, I–275 to the Ohio River; thence running southeasterly along the Ohio River from Interstate 275 to geographic coordinates 38.9735 North Latitude, 84.3017 West Longitude (NAD 1983). This area is shown in Figure 1 under Chapter Three.

The Campbell-Clermont KY-OH area has not previously been subject to nonattainment area rulemakings for the SO_2 NAAQS.

Status of Air Quality

SO_2 complete quality-assured ambient air quality monitoring data for the three (3) years, 2012 through 2014, demonstrate that the air quality has met the 1-hour SO_2 standard in this nonattainment area. (See Chapter Three) The NAAQS attainment, accompanied by decreases in emission levels discussed in Chapter Four, supports a redesignation to attainment for the Campbell-Clermont KY-OH area based on the requirements in Section 107(d)(3)(E) of the CAA as amended.

CHAPTER TWO: Requirements for Redesignation

U.S. EPA has published detailed guidance in a document entitled *Procedures for Processing Requests to Redesignate Areas to Attainment* (redesignation guidance), issued September 4, 1992, to Regional Air Directors. U.S. EPA has also published guidance specific to SO_2 in a document entitled *Guidance for 1-Hour SO_2 Nonattainment Area SIP Submissions* (SO_2 nonattainment area SIP guidance), issued April 23, 2014, to Regional Air Division Directors. This redesignation request and maintenance plan is based on the redesignation guidance and SO_2 nonattainment area SIP guidance, supplemented with additional guidance received from U.S. EPA Region 4 and Region 5 staff.

Below is a summary of each redesignation criterion as it applies to the Campbell-Clermont KY-OH area.

1. <u>Attainment of the standard (CAA Section 107(d)(3)(E)(i))</u>

There are two components involved in making this demonstration.

The first component relies on ambient air quality data. For SO_2, all available monitoring data in the area should indicate the standard is being met according to 40 CFR 50.17 and 40 CFR Part 50, Appendix T. Analyses should indicate whether any of the monitors located in the nonattainment area are located in the area of maximum concentration.

Demonstration: Chapter Three discusses this requirement in more detail and provides the demonstration.

The second component relies upon supplemental U.S. EPA-approved air quality modeling. Where a monitor is located in the area of maximum concentration, a determination of attainment may be made based on monitoring data alone without the need for additional air quality modeling. When a nonattainment area has no monitors, or monitors not located in the area of maximum concentration, air quality dispersion modeling is *generally* needed to estimate SO_2 concentrations in the area.

Demonstration: Chapter Three discusses this requirement in more detail (Requirement 4 of 4) and provides the demonstration.

2. Approved SIP for the area under CAA Section 110(k) (CAA Section 107(d)(3)(E)(ii))

The SIP for the nonattainment would need to be fully approved and satisfy all applicable requirements for the area. U.S. EPA approval of SIP elements and redesignation requests may occur simultaneously.

Demonstration: Ohio EPA has submitted all required SIP elements for this area in either previous submittals, or as a part of this submittal.

3. Permanent and enforceable improvement in air quality (CAA Section 107(d)(3)(E)(iii))

The state must be able to reasonably attribute the improvement in air quality to emission reductions which are permanent and enforceable. The state should estimate the percent reduction achieved from federal measures as well as control measures that have been adopted and implemented by the state.

Demonstration: Chapter Four discusses this requirement in more detail (Requirement 4 of 5) and provides the demonstration.

4. Maintenance plans (CAA Section 107(d)(3)(E)(iv))

Section 107(d)(3)(E) stipulates that for an area to be redesignated, U.S. EPA must fully approve a maintenance plan that meets the requirements of Section 175A. The maintenance plan will constitute a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least ten years after redesignation along with a commitment to review the plan. Section 175A further states that the plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance.

In addition, the maintenance plan shall contain such contingency measures as the Administrator deems necessary to ensure prompt correction of any violation of the NAAQS. At a minimum, the contingency measures must include a requirement that the state will implement all measures contained in the nonattainment SIP prior to redesignation.

Demonstration: States seeking approval of a maintenance plan for a nonattainment area should consider the following provisions:

- attainment inventory (Chapter Four contains the discussion and demonstration);

- maintenance demonstration (Chapter Four contains the discussion and demonstration);
- monitoring network (Chapter Three contains the discussion and demonstration);
- verification of continued attainment (in Chapter Four (Requirement 5 of 5) contains the discussion and demonstration); and
- contingency plan (Chapter Six contains the discussion and demonstration).

5. Section 110 and Part D requirements (CAA Section 107(d)(3)(E)(v))

For purposes of redesignation, a state must meet all requirements of Section 110 and Part D that were applicable prior to submittal of the complete redesignation request but not those that come due after submittal of the redesignation request.

a. Section 110(a) requirements

Section 110(a) of Title I of the CAA contains the general requirements for a SIP. Section 110(a)(1) generally directs states to submit a SIP that provides for implementation, maintenance, and enforcement of the air quality standards to the U.S. EPA after reasonable notice and public hearing. Section 110(a)(2) provides that the infrastructure SIP submitted by a state must have been adopted by the state after reasonable public notice and hearing, and that, among other things, it must include enforceable emission limitations and other control measures[1], means or techniques necessary to meet the requirements of the CAA; provide for establishment and operation of appropriate devices, methods, systems and procedures necessary to monitor ambient air quality; provide for implementation of a source permit program to regulate the modification and construction of any stationary source within the areas covered by the plan; include provisions for the implementation of Part C, prevention of significant deterioration (PSD) and Part D, new source review (NSR) permit programs; include criteria for stationary source emission control measures, monitoring, and reporting; include provisions for air quality modeling; and provide for public and local agency participation in planning and emission control rule development.

[1] Other than nonattainment emission limitations and measures which are a part of nonattainment area plans and subject to the timing requirements of Section 172 of the CAA.

Demonstration: In Ohio's June 7, 2013 infrastructure SIP submission, Ohio verified that the state fulfills the requirements of Section 110(a)(1) and Section 110(a)(2) of the CAA with respect to the 2010 SO_2 NAAQS. Ohio's June 7, 2013 infrastructure SIP for the 2010 1-hour SO_2 standard contains SIP approved Ohio Administrative Code Chapter 3745-18, through which SO_2 emissions are directly regulated.

Section 110(a)(2)(D) also requires state plans to prohibit emissions from within the state which contribute significantly to nonattainment or maintenance areas in any other state, or which interfere with programs under Part C to prevent significant deterioration of air quality or to achieve reasonable progress toward the national visibility goal for Federal class I areas (national parks and wilderness areas).

Demonstration: In order to assist states in addressing their obligations regarding regionally transported pollution, U.S. EPA finalized the Clean Air Interstate Rule (CAIR) and then the Cross State Air Pollution Rule (CSAPR) to reduce SO_2 and NO_x emissions from large electric generating units (EGU). Ohio has met the requirements of the federal CAIR to reduce NO_x and SO_2 emissions contributing to downwind states. On February 1, 2008, U.S. EPA approved Ohio's CAIR program, which can be found in Ohio Administrative Code (OAC) Chapter 3745-109[2]. On July 6, 2011, U.S. EPA finalized a replacement to the CAIR program, the CSAPR. CSAPR will further assist states in addressing their obligations regarding regionally transported pollution by providing reductions in NO_x and SO_2 emissions in 2015 and 2017[3].

b. <u>Part D requirements</u>

Subpart 1 of Part D consists of general requirements applicable to all areas which are designated nonattainment based on a violation of the NAAQS. Subpart 5 of Part D consists of more specific requirements applicable to SO_2[4].

i. Section 172(c) requirements

[2] http://www.epa.ohio.gov/dapc/regs/regs.aspx#3745-109
[3] Timeline for implementation of CSPAR was adjusted from 2012 and 2014 to 2015 and 2017. (79 FR 71663)
[4] Subpart 5 of Part D identifies requirements related only to plan submission deadlines and attainment dates. SIP submittal and attainment dates are discussed in the introduction of this submittal.

This Section contains general requirements for nonattainment plans. The requirements for reasonable further progress (RFP), identification of certain emissions increases, and other measures needed for attainment will not apply for redesignations because they only have meaning for areas not attaining the standard. The requirements for an emission inventory will be satisfied by the inventory requirements of the maintenance plan.

Demonstration: The emissions inventory is discussed in Chapter Four and the maintenance plan is discussed below. The requirements of the Part D NSR program will be replaced by the PSD program once the area has been redesignated. The PSD program is discussed in Chapter Five (Requirement 5 of 6). The demonstrations are provided in these locations.

ii. Conformity

The state must work with U.S. EPA to show that its SIP provisions are consistent with the Section 176(c)(4) conformity requirements. The redesignation request should include conformity procedures, if the state already has these procedures in place. If a state does not have conformity procedures in place at the time that it submits a redesignation request, the state must commit to follow U.S. EPA's conformity regulation upon issuance, as applicable.

Demonstration: Ohio EPA meets all of U.S. EPA's conformity procedures. Ohio EPA commits to following the general conformity requirements of 40 CFR 93.150 to 93.165. On August 20, 2014, Ohio EPA submitted signed Memorandums of Understanding (MOUs) to U.S. EPA establishing transportation conformity procedures for inclusion in Ohio's SIP. U.S. EPA issued a direct final rulemaking approving the MOUs on March 2, 2015 (80 FR 11133) with an effective date of May 1, 2015.

As described in the SO_2 nonattainment area SIP guidance, due to the relatively small, and decreasing, amounts of sulfur in gasoline and on-road diesel fuel, the U.S. EPA's transportation conformity rules provide that they do not apply to SO_2 unless transportation conformity budgets exist for other reasons, such as that SO_2 is found to be a significant contributor to a $PM_{2.5}$ nonattainment problem, or if the SIP has established an approved or adequate budget for such emissions as part of the RFP, attainment or maintenance strategy. Neither of these

circumstances applies here. As discussed in Ohio EPA's December 9, 2010[5] redesignation request and maintenance plan for the Cincinnati-Hamilton OH-KY-IN area under the 1997 $PM_{2.5}$ standard, mobile SO_2 was found to be an insignificant contributor to the $PM_{2.5}$ nonattainment problem. All of Campbell County, KY and all of Clermont County, OH were included in that historical nonattainment area and no SO_2 budgets exist for these counties. Therefore, mobile source SO_2 emission budgets are not required for this area.

[5] http://www.epa.ohio.gov/portals/27/SIP/Cincinnati_PM25_annual_redesignation-FINAL.pdf

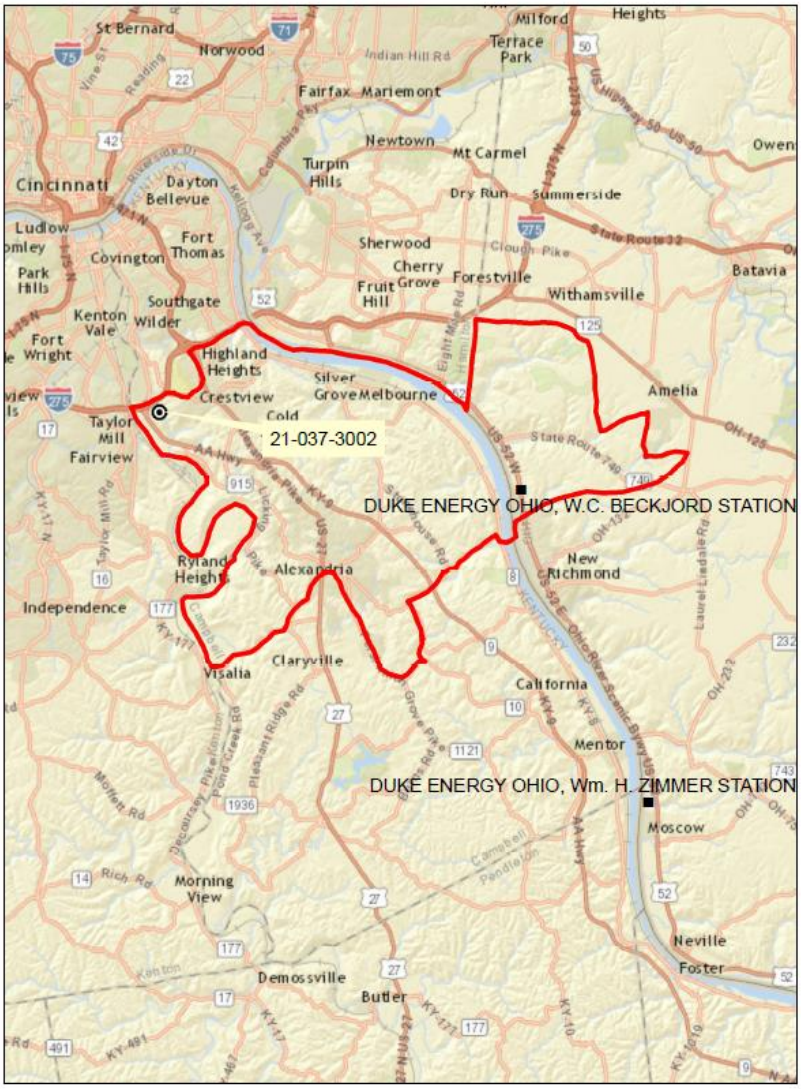
CHAPTER THREE: SO_2 Monitoring

CAA Section 107(d)(3)(E)(i)

<u>Requirement 1 of 4: A demonstration that the NAAQS for 1-hour SO_2, as published in 40 CFR 50.17, has been attained.</u>

There is one monitor measuring SO_2 concentrations in this nonattainment area. This monitor is operated by the Kentucky Division for Air Quality. The location of the monitoring site for this nonattainment area is shown in Figure 1.

Figure 1 - Map of the Campbell-Clermont KY-OH nonattainment area and monitor location



In accordance with 40 CFR Part 50, Appendix T, three complete years of monitoring data are required to demonstrate attainment at a monitoring site. The 1-hour SO_2 standard is met at an ambient air quality monitoring site when the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations is less than or equal to 75 ppb. The three-year average of the annual 99th percentile of 1-hour daily maximum concentrations is also called the site's "design value." To be complete, at least 75 percent of the days in each quarter of each of the three consecutive years must have at least one reported hourly value. Hourly SO_2 data are reported to U.S. EPA's Air Quality System (AQS). While calculating design values, one decimal place must be carried in the computations, with final values rounded to the nearest 1 ppb. Decimals 0.5 or greater are rounded up, and those less than 0.5 are rounded down. Values at or below 75 ppb meet the standard. Values greater than 75 ppb exceed the standard. An area is in compliance with the 1-hour SO_2 standard only if every monitoring site in the area meets the NAAQS. The air quality design value for the area is the highest design value among all sites in the area.

Demonstration: The three-year average of the annual 99th percentile of 1-hour daily maximum concentrations, based on data from the monitoring site in the area, is 72 ppb. A listing of the design value for 2012 through 2014 is shown in Table 1.

Table 1 - Monitoring data for the Campbell-Clermont KY-OH area for 2012 – 2014

		Year (ppb)			Average 2012-2014 (ppb)
Site	**County**	**2012**	**2013**	**2014**	
21-037-3002	Campbell, KY	85	71	61	72
	Less than 75% capture in at least one quarter				

Source: U.S. EPA Air Quality System (AQS); http://www.epa.gov/ttn/airs/airsaqs/index.htm

Requirement 2 of 4: Ambient monitoring data quality assured in accordance with 40 CFR 58.10, recorded in the AQS database, and available for public view.

Demonstration: Kentucky DAQ has quality assured all data shown in Appendix A in accordance with 40 CFR 58.10 and all other federal requirements. Kentucky DAQ has recorded the data in the AQS database and, therefore, the data are available to the public.

Requirement 3 of 4: A commitment that once redesignated, the state will continue to operate an appropriate monitoring network to verify the maintenance of the attainment status.

Demonstration: This monitor is located in Kentucky. Ohio EPA consulted with Kentucky DAQ and Kentucky DAQ assures Ohio EPA they commit to continue monitoring SO_2 levels at the Kentucky site indicated in Figure 1 and Table 1. Kentucky DAQ assures Ohio EPA they will consult with U.S. EPA Region 4 prior to making changes to the existing monitoring network, should changes become necessary in the future. Kentucky DAQ assures Ohio EPA they will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58 and all other federal requirements.

Requirement 4 of 4: Supplemental U.S. EPA-approved air quality modeling to show monitors are located in the area of maximum concentration.

Where a monitor is located in the area of maximum concentration, a determination of attainment may be made based on monitoring data alone without the need for additional air quality modeling. When a nonattainment area has no monitors, or monitors not located in the area of maximum concentration, air quality dispersion modeling is *generally* needed to estimate SO_2 concentrations in the area.

Demonstration: Ohio EPA analysis demonstrates violations at this monitor were caused by emissions from the Walter C. Beckjord facility located along the Ohio River in Ohio east of the monitor (see Figure 1). On September 1, 2014[6], the Walter C. Beckjord facility ceased operations of all EGUs and by the end of 2014 the remaining oil-fired units. Ohio EPA was notified of the permanent shutdown of the entirety of the facility on October 14, 2014 and May 28, 2015. (Appendix B, Appendix I) There are no other significant point sources of SO_2 emissions located in the nonattainment area. Within the portion of Campbell County, KY that is a part of this area there are 11 sources which combined emit less than one ton per year (tpy) of SO_2. (Appendix C) There are no other point sources of SO_2 emissions in the portion of Clermont County, OH that is a part of this area.

Located south (and slightly east) of the monitor, but outside of the nonattainment area, is the William H. Zimmer facility (see Figure 1). It was

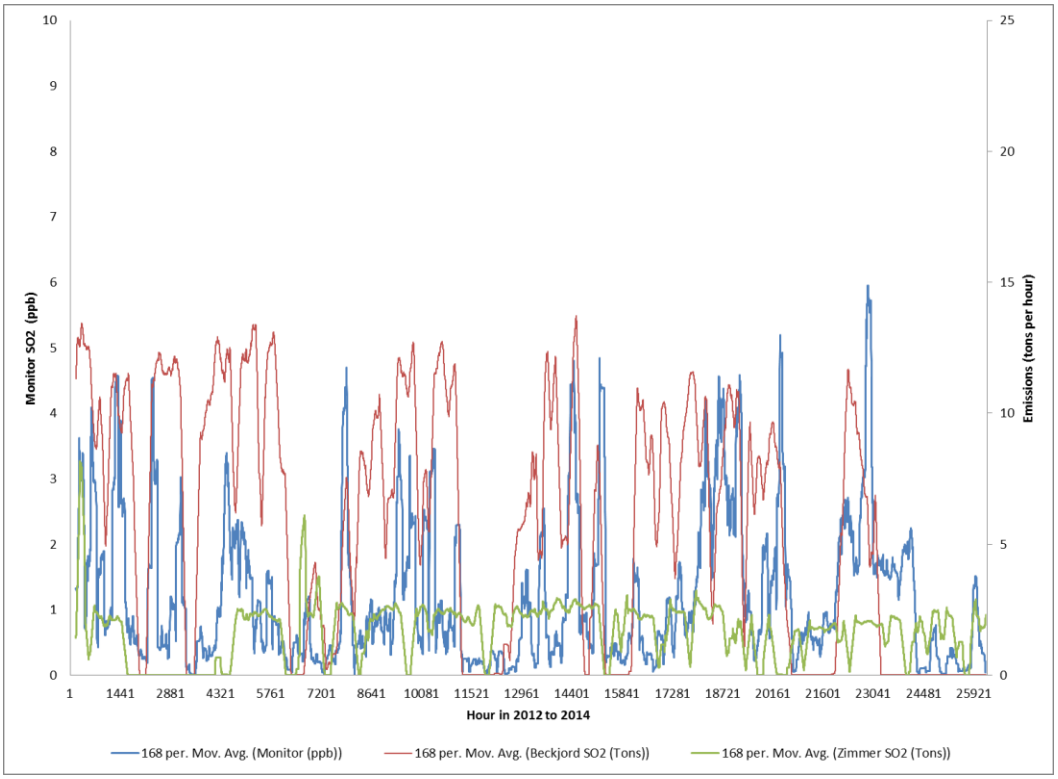
[6] The letter contained in Appendix B identifies the permanent shutdown of all units occurred on October 1, 2014. However, a review of CAMD emissions showed that all the units ceased operation by September 1, 2014.

determined during the nonattainment designation process that emissions from the William H. Zimmer facility likely do not impact the violating monitor at question, and therefore, the nonattainment area was not expanded to encompass this facility. To support the previous conclusion, Ohio EPA performed an extensive meteorology, emissions and back trajectory analysis and has included this analysis as Appendix D. This analysis concludes that it was in fact the Walter C. Beckjord facility that caused the violations and not the William H. Zimmer facility. The back trajectory analysis also demonstrates that emissions from the William H. Zimmer facility likely do not impact the nonattainment area as a whole.

This conclusion is further supported by an air quality trend analysis of the monitoring site. Figure 2 shows both Walter C. Beckjord and William H. Zimmer SO_2 rolling hourly emissions[7] for the 2012 to 2014 period along with rolling hourly SO_2 concentrations at the monitor. For clarity in the demonstration of the long-term trend, the emissions and monitor values are presented as rolling 168 hour averages. Elevated monitor concentrations are associated with elevated emissions from Walter C. Beckjord throughout this three-year period. During this period there were significant fluctuations and changes in Walter C. Beckjord's SO_2 emissions. However, emissions remained stable at the William H. Zimmer facility. Requirement 3 of 4 under Chapter 4 identifies more specific emission trends from the Walter C. Beckjord facility's six emissions units. As can be seen in that section, emissions at Walter C. Beckjord have steadily declined due to operation of the four smaller EGUs ceasing between 2009 and 2013 and lastly the two larger EGUs in 2014.

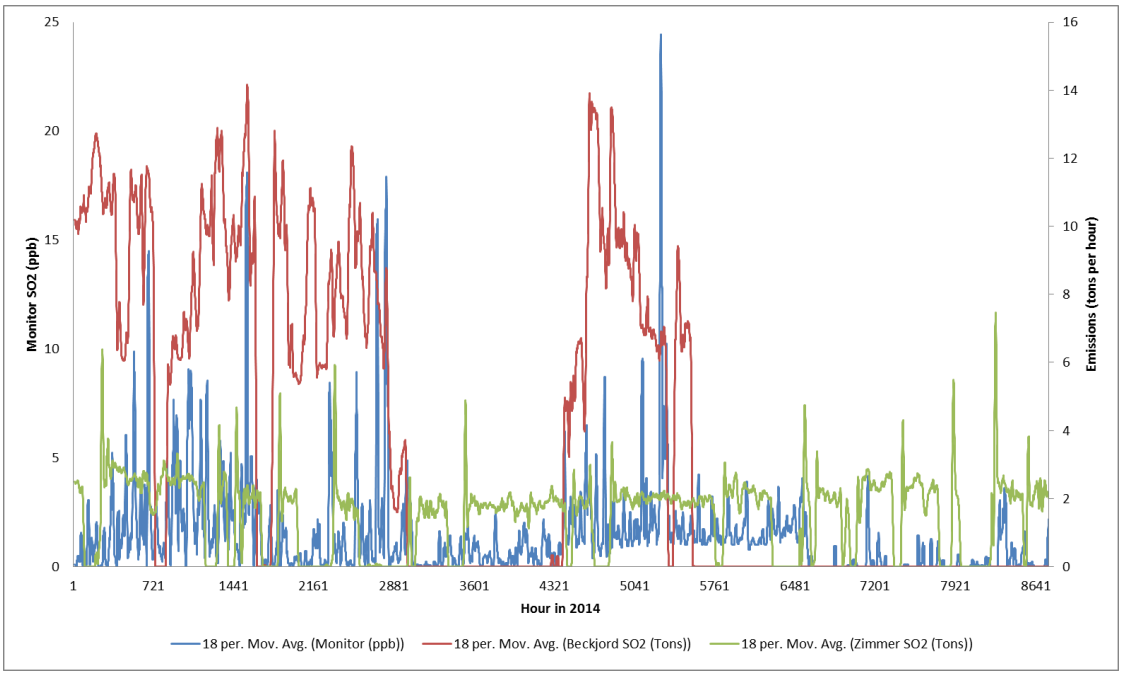
[7] Only the EGU emissions at Walter C. Beckjord were analyzed. The SO_2 emissions from the oil-fired units are trivial in comparison. For example, in 2014 total SO_2 emissions were 32,602.44 tons for the facility. Of that total, less than 0.03 tons were reported for all non-EGU sources at the facility.

Figure 2: 2012 to 2014 Walter C. Beckjord and William H. Zimmer hourly emissions with hourly SO_2 monitoring data



Only the two larger EGUs remained in operation during 2014 and completely ceased operation on September 20, 2014. In addition, from May 5 to June 29, 2014, these EGUs also did not operate. Figure 3, also presented as a rolling average of 18 hours to more clearly illustrate the-long term trend, shows an obvious downward trend in monitored SO_2 concentrations during these periods even though operations at William H. Zimmer remained consistent.

Figure 3: 2014 Walter C. Beckjord and William H. Zimmer hourly emissions with hourly SO_2 monitoring data



An analysis of the 2014 hourly monitoring data shows that the average hourly monitored SO_2 level was 2.27 ppb during periods of operation of the two remaining EGUs at the Walter C. Beckjord facility while during the May 5 to June 29, 2014 period and the post September 20, 2014 period the average hourly monitored SO_2 level was 0.72 ppb. The long term trend clearly indicates that reductions in emissions at the Walter C. Beckjord facility have led to reductions in monitored concentrations. Further analyses, presented below demonstrate the impacts of reduced emissions on peak monitor values.

Because there are no longer any significant point sources of emissions impacting this monitor, it was determined an air quality dispersion modeling analysis to determine the area of maximum concentration would not be relevant or necessary for this redesignation request. However, Ohio EPA conducted a conservative modeling analysis to demonstrate that concentrations throughout the nonattainment area will be relatively uniform and that the point of maximum concentration in the nonattainment area resultant from emissions from the William H. Zimmer facility will not exceed the standard. This additional analysis is included as Appendix J. This

analysis shows a maximum worst-case 99th percentile value of 52.4 ppb within the nonattainment area. As noted in Appendix J, this design value is likely an over estimation but allows Ohio EPA to demonstrate in a highly conservative manner that emissions from the William H. Zimmer facility will not cause an exceedance of the standard in this nonattainment area. This is further supported by both the back trajectory analysis and the analysis of emissions and monitor values above. Also included in the Appendix J analysis is a demonstration that the point of maximum impact is located approximately 1.4 km southeast of the William H. Zimmer facility, and the point of maximum in the nonattainment area represents an approximately 84% reduction from the overall maximum impact.

Ohio EPA conducted a second analysis of monitor values, wind directions, and emissions for all hours in which SO_2 emissions from the Walter C. Beckjord facility were zero to illustrate the impact of the shutdown of the Walter C. Beckjord facility on peak monitor values. This analysis indicates that for those identified hours, the maximum recorded concentration was 34 ppb, and that the 99th percentile of nonzero monitored values for the same period was 11 ppb. This analysis, presented in Appendix K, also demonstrates that the primary wind directions impacting the monitor in the absence of Walter C. Beckjord emissions were from the West and Northwest, where sources are located 30 to 35 km distant from the monitor, and will have SO_2 reductions of approximately 66% from 2014 levels as of June 1, 2015. The large distances between these sources and the monitor location, as well as the nonattainment area as a whole, would indicate that there is unlikely to be a significant concentration gradient, and thus the monitor is determined to be representative of ambient SO_2 concentrations across the nonattainment area.

In addition to the above, U.S. EPA has requested Ohio EPA and Kentucky DAQ perform an analysis of background concentration for this nonattainment area to determine predicted concentrations in the future and ensure that maintenance would be achieved. This analysis is included in Requirement 2 of 4 under Chapter Four.

CHAPTER FOUR: Emission Inventory

CAA Section 107(d)(3)(E)(iii)

U.S. EPA's redesignation guidance requires the submittal of a comprehensive inventory of SO_2 emissions representative of the year when the area achieves attainment of the 1-hour SO_2 air quality standard. Ohio also must demonstrate that the improvement in air quality between the year that violations occurred and the year that attainment was achieved is based on permanent and enforceable emission reductions. Other emission inventory related requirements include a projection of the emission inventory to a year at least 10 years following redesignation; a demonstration that the projected level of emissions is sufficient to maintain the 1-hour SO_2 standard; and a commitment to provide future updates of the inventory to enable tracking of emission levels during the 10-year maintenance period.

Requirement 1 of 4: A comprehensive emission inventory of SO_2 completed for the base year and a projection of the emission inventory to a year at least 10 years following redesignation.

Periodic inventories, which include emissions from all sectors - mobile, area, non-road, and point sources - are prepared every three years. The 2011 periodic inventory has been identified as one of the preferred databases for SIP development and coincides with nonattainment air quality in the Campbell-Clermont area. The 2011 inventory is used as the base year for the purpose of this submittal and is being submitted to U.S. EPA with this document to fulfill all emissions inventory requirements under the 2010 SO_2 standard.

For the attainment year, 2014 was selected since it corresponds to one of the years in the design value showing attainment (2012 – 2014). The 2014 attainment year also corresponds to the year where the permanent and enforceable improvement in air quality leading to attainment occurred due to the entirety of the Walter C. Beckjord facility permanently ceasing operations.

In consultation with U.S. EPA, Ohio EPA selected the year 2027 as the maintenance year for this redesignation request. This document contains projected emissions inventories for 2020 (interim year) and 2027.

The information below describes the procedures Kentucky DAQ, Ohio EPA and the Ohio, Kentucky, Indiana Council of Governments (OKI) used to generate future year emission projections based on the 2011 base year inventory.

In summary, projections were developed for each sector as follows:

- Area source and non-road[8] emissions were compiled from the 2011 National Emissions Inventory (NEI) and projections were developed according to the analysis contained in Appendix C.
- On-road or mobile source emission projections are based on U.S. EPA's MOVES model and were provided by the OKI. Mobile source emissions were calculated from MOVES2014b-produced emission factors. The analysis and projections methods are described in more detail in Appendix E.
- Non-EGU point source information was compiled from both Ohio and Kentucky Emissions Inventory databases and EGU point source information was compiled from the 2014 data in U.S. EPA's Clean Air Markets Division (CAMD)[9] database. Projections were developed according to the analysis contained in Appendix C.
- Biogenic emissions are not included in these summaries because they are negligible.

Demonstration: Sectors included in the following tables are: Electrical Generating Unit (EGU-Point); Non-Electrical Generating Unit (Non-EGU); Non-road Mobile (Non-road); Other (Area); and On-road Mobile (On-road).

Table 2 - Ohio portion SO_2 emission inventory totals for base year 2011, attainment 2014, and projected 2020 and 2027 (tpy)

Sector	2011 Base	2014 Attainment	2020 Interim	2027 Maintenance
EGU Point	90,834.50	32,602.44	0.00	0.00
Non-EGU	0.00	0.00	0.00	0.00
Non-road	0.17	0.17	0.18	0.18
Other	7.50	7.62	7.87	8.00
On-road	0.34	0.33	0.31	0.28
TOTAL	**90,842.51**	**32,610.56**	**8.36**	**8.46**

[8] Includes Marine; Aircraft; and Rail (MAR).
[9] http://www.epa.gov/airmarkets/acidrain

Table 3 – Kentucky portion SO_2 emission inventory totals for base year 2011, attainment 2014, and projected 2020 and 2027 (tpy)

Sector	2011 Base	2014 Attainment	2020 Interim	2027 Maintenance
EGU Point	0.00	0.00	0.00	0.00
Non-EGU	0.78	0.78	0.79	0.78
Non-road	0.20	0.20	0.20	0.20
Other	6.03	6.05	6.08	6.03
On-road	1.55	1.51	1.40	1.26
TOTAL	**8.56**	**8.54**	**8.47**	**8.27**

Table 4 – Combined Campbell-Clermont area SO_2 emission inventory totals for base year 2011, attainment 2014, and projected 2020 and 2027 (tpy)

SO_2	2011 Base	2014 Attainment	2020 Interim	2027 Maintenance
Ohio Portion	90,842.51	32,610.56	8.36	8.46
Kentucky Potion	8.56	8.54	8.47	8.27
COMBINED SO_2 TOTAL	**90,851.07**	**32,619.10**	**16.83**	**16.73**

As part of the redesignation request and maintenance plan, motor vehicle emission budgets must be established unless it is determined mobile sources are insignificant contributors for a specific pollutant. As discussed under Section 5.b.ii of Chapter Two, mobile SO_2 emissions are considered an insignificant contributor under the 2010 SO_2 NAAQS for this area.

Requirement 2 of 4: A demonstration that the projected level of emissions is sufficient to maintain the SO_2 standard.

Maintenance is demonstrated either by showing that future emissions of SO_2 will not exceed the level of the attainment inventory at levels that could cause a violation of the NAAQS, or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS.

A maintenance demonstration should also include a listing of all SO_2 control measures being implemented in the area by sector (See Chapter Five).

Demonstration: As discussed under Requirement 4 of 4 in Chapter Three, it was determined a modeling analysis of maximum concentration location would not be warranted given the unique circumstances of this specific redesignation request. Ohio EPA conducted a conservative analysis of the maximum concentration in the nonattainment area and demonstrated that an exceedance of the standard would not occur at any point in the nonattainment area. (Appendix J) As of September 1, 2014 (when the Walter C. Beckjord facility ceased operations), there are no significant point sources of SO_2 emissions located in the nonattainment area.

Emission trends are an important gauge for continued compliance with the SO_2 standard. Therefore, to meet this requirement, Ohio EPA performed an initial comparison of the inventories for the base year and maintenance years identified in Requirement 1 of 4 of this Chapter. Maintenance is demonstrated when the future-year (2027) projected emission totals are below the 2014 attainment year totals.

Table 5 – Campbell-Clermont area comparison of 2014 attainment year and 2020 and 2027 projected emission estimates (tpy)

	2014 Attainment	2020 Interim	2020 Projected Decrease	2027 Maintenance	2027 Projected Decrease
SO_2	32,619.10	16.83	-32,602.27	16.73	-32,602.37

As shown in the Table 5 above, SO_2 emissions in the nonattainment area are projected to decrease by 32,602 tpy in both 2020 and 2027. This drop in emissions from the attainment year in conjunction with the fact that the entire nonattainment area's total emissions will be 16.73 tpy to 16.83 tpy after the attainment year demonstrates maintenance.

In addition to the above, U.S. EPA has requested Ohio EPA and Kentucky DAQ perform an analysis of background concentration for this nonattainment area to determine predicted concentrations in the future and ensure that maintenance would be achieved. Ohio EPA and Kentucky DAQ have determined a conservative average background concentration for this area is 4.76 ppb, and a conservative 99th percentile background or this area is 11 ppb. The analysis to support this determination is included in Appendix F and Appendix K. The analysis follows procedures for multiple tiers of calculation options for background as outlined in U.S. EPA's SO_2 nonattainment area SIP guidance. The analysis of a 4.76 ppb average background concentration

and a conservative 99th percentile concentration of 11 ppb further supports maintenance will be achieved.

Requirement 3 of 4: A demonstration that improvement in air quality between the year violations occurred and the year attainment was achieved is based on permanent and enforceable emission reductions and not on temporary adverse economic conditions or unusually favorable meteorology.

Permanent and enforceable reductions should be a result of emission limitations in the SIP. In making this showing, sufficient quantitative information about emission reductions should be provided to demonstrate the improvement in air quality is attributed to permanent and enforceable measures.

Demonstration: Permanent and enforceable reductions of SO_2 emissions have contributed to the attainment of the 1-hour SO_2 standard in this area.

As demonstrated in Table 6 below, permanent and enforceable reductions were realized in this area due to the permanent shut down of the entirety of the Walter C. Beckjord facility.

Table 6 – Campbell-Clermont KY-OH area comparison of 2011 base year and 2014 attainment year EGU reductions

	2011	2014
EGU SO_2	90,834.50	32,602.44

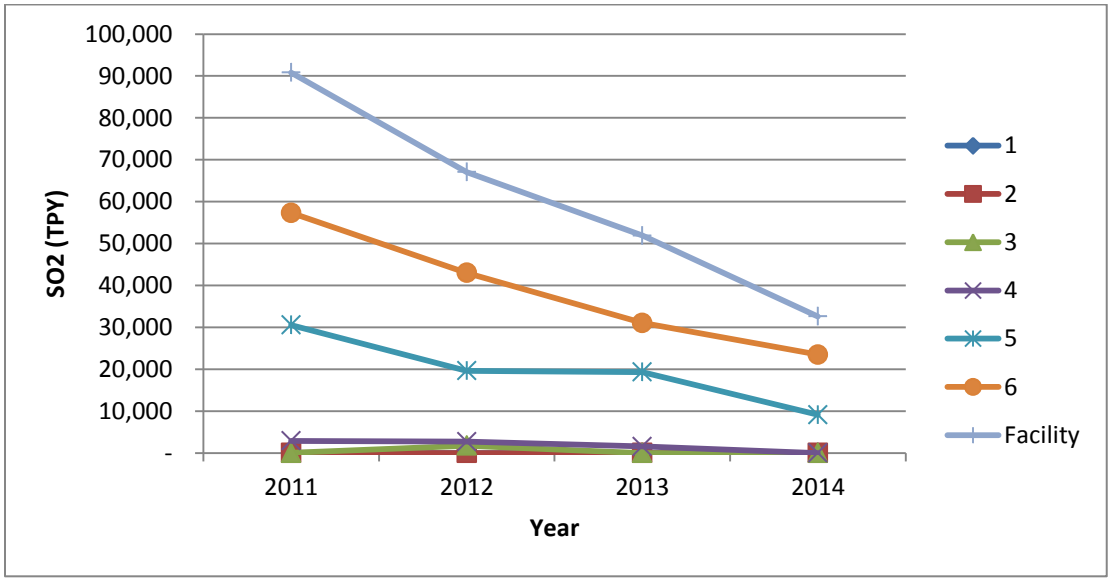
As discussed under Requirement 4 of 4 in Chapter Three, violations at this monitor were determined to be caused by emissions from the Walter C. Beckjord facility which ceased operations of EGUs beginning September 1, 2014 and the remaining oil-fired units by the end of 2014. Ohio EPA was notified of the permanent shutdown on October 14, 2014 and May 28, 2015 thereby making the reductions permanent and enforceable. (Appendix B, Appendix I) When an owner or operator notifies Ohio EPA of the permanence of shut down, the facility cannot resume operations without being considered a new facility and being subject to the NSR requirements. OAC Chapter 3745-31[10] contains Ohio's Permits-to-Install New Sources and Permit-to-Install and Operate Program rules. OAC rule 3745-31-02 prevents installation or modification, and subsequent operation of new sources without properly obtaining appropriate permits. A new source is defined in OAC rule

10 http://epa.ohio.gov/dapc/regs/3745_31.aspx

3745-31 as any air contaminant source for which an owner or operator undertakes a continuing program of installation or modification, wherein a modification is defined as any physical change in, or change in the method of operation of any air contaminant source that results in an increase in the allowable emissions. In addition, it has been Ohio's longstanding policy and memorialized under OAC Chapter 3745-31 that for any emission unit that is permanently shut down (physically removed from service or altered in such a way that it can no longer operate without a subsequent "modification" or installation), authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. No emission unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31. Thus, the cessation of emissions from the Walter C. Beckjord facility is permanent and enforceable, and that this cessation has been demonstrated to markedly improve ambient air quality. (Appendix K)

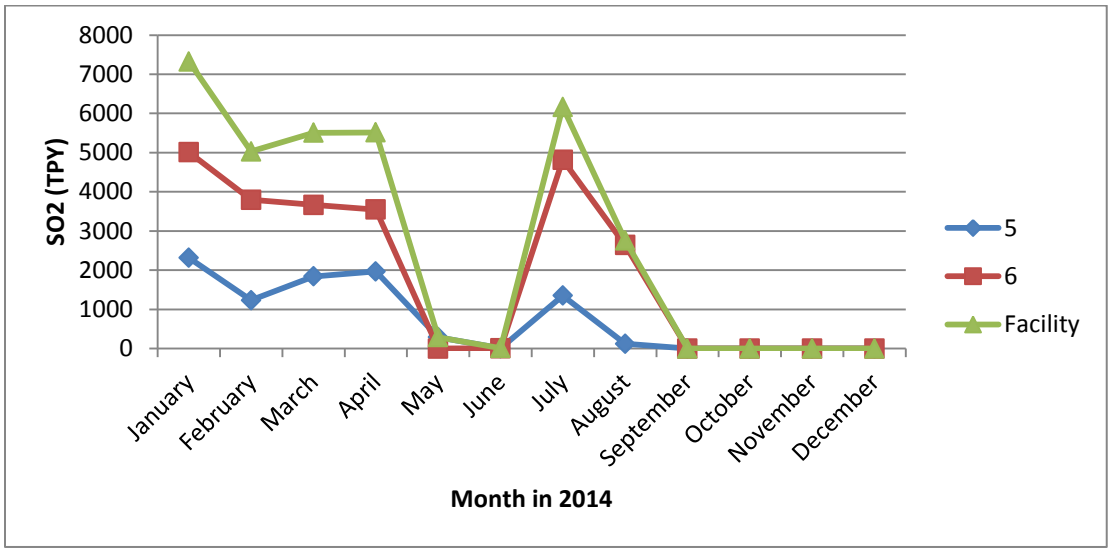
The Walter C Beckjord facility was comprised of six EGUs: B001 and B002 were 94 megawatts (MW) each; B003 was 128 MW; B004 was 150 MW, B005 was 238 MW; and B006 was 414 MW. Emissions of SO_2, by unit and for the entire facility, from 2011 through 2014 can be seen in Figure 4 below.

Figure 4: Walter C. Beckjord SO_2 emissions by unit and entire facility



B001 last operated in 2009, B002 in 2011, B003 in 2012, B004 in 2013, and both B005 and B006 ceased operation on September 1, 2014 as indicated in Figure 5 below.

Figure 5: Walter C. Beckjord SO_2 emissions for units B005 and B006 in 2014



Inventories of Walter C. Beckjord's SO_2 emissions for 2008 to 2014 can be found in Appendix G.

In addition to the above, emissions of SO_2 are limited by new source performance standards (NSPS) under Sections 111 and 129 of the CAA; and the national emission standards for hazardous air pollutants (NESHAP) under Section 112 of the CAA. Several recent U.S. EPA air quality regulations on EGUs and other large sources (such as various types of boilers and incinerators) have the potential to significantly reduce SO_2 emissions further, for example, the Mercury and Air Toxics Standards (MATS). Under MATS, EGUs meeting specific criteria may choose to demonstrate compliance with alternative SO_2 emission limits in lieu of demonstrating compliance with HCl emission limits. Also Title IV of the CAA, CAIR, CSAPR and federal consent decrees required the reduction of SO_2 emissions from EGUs throughout the nation and will continue to achieve further reductions. U.S. EPA notes that for facilities subject to the previously listed MACT and regional interstate transport rules (such as CAIR and CSAPR), additional control measures may not be necessary to demonstrate compliance with the 1-hour SO_2 NAAQS.

In addition to permanent and enforceable reductions for point sources, several regulations have led, and will continue to lead, to further reductions of SO_2 from other sectors. Examples include the application of tighter federal standards on non-road diesel vehicles (Clean Air Non-road Diesel Rule), requirements to reduce the sulfur content of various motor fuels including low-sulfur diesel fuel standards phased in from 2004 through 2007 for larger on-

road vehicles (Highway Heavy Duty Engines Rule), and the application of tighter federal standards on new vehicles.

Requirement 4 of 4: Provisions for future annual updates of the inventory to enable tracking of the emission levels, including an annual emission statement from major sources.

Demonstration: In Ohio, major point sources in all counties are required to submit air emissions information annually, in accordance with U.S. EPA's Consolidated Emissions Reporting Rule (CERR). Ohio EPA prepares a new periodic inventory for all SO_2 emission sectors every three years. These SO_2 inventories will be prepared for future years as necessary to comply with the inventory reporting requirements established in the CFR. Emissions information will be compared to the 2011 base year and the 2027 projected maintenance year inventories to assess emission trends, as necessary, and to assure continued compliance with the 1-hour SO_2 standard.

CHAPTER FIVE: Control Measures and Regulations

CAA Section 107(d)(3)(E)(ii), 107(d)(3)(iii), and 107(d)(3)(E)(v)

Requirement 1 of 6: Section 172(c)(1) of the 1990 Clean Air Act Amendments requires states with nonattainment areas to implement RACM and RACT.

Section 172(c)(1) requires states with nonattainment areas to submit a SIP providing for implementation of all RACMs as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of RACT). The SO_2 nonattainment area SIP guidance also provides that to the extent that U.S. EPA has promulgated national and regional rules that will require significant SO_2 emission reductions in the period after areas are designated as nonattainment, "expeditious attainment" may in many cases mean that attainment will be possible earlier than the attainment date.

Demonstration: RACM and RACT requirements are established as part of the attainment demonstration SIPs due in April of 2015. Because this area attained the standard, this area is eligible for redesignation without submitting the RACM and RACT attainment plan elements. In addition, because there are no longer any significant point sources located in the nonattainment area no further point source emissions controls are possible therefore RACM and RACT for point sources is irrelevant.

In 1979, 1987 and 1996, Ohio promulgated rules requiring reasonably available controls measures for SO_2 from stationary sources.

Statewide RACT rules have been applied to all new sources locating in Ohio since that time. RACT requirements are incorporated into permits along with monitoring, recordkeeping, and reporting necessary to ensure ongoing compliance. Ohio EPA also has an active enforcement program to address violations discovered by field office staff. The Ohio RACT rules for SO_2 are found in OAC Chapter 3745-18[11].

In addition, Ohio EPA promulgated and implemented CAIR (OAC Chapter 3745-109[12]) over the past six years. Emissions from EGUs make up a significant contribution to Ohio's inventory. Beginning in 2009, Ohio implemented CAIR which provided for significant reductions in SO_2. Beginning in 2015, the more restrictive CSAPR will be implemented and more significant reductions in SO_2 will be realized.

11 http://www.epa.ohio.gov/dapc/regs/3745_18.aspx
12 http://www.epa.ohio.gov/dapc/regs/3745_109.aspx

Requirement 2 of 6: Section 172(c)(2) of the 1990 CAA Amendments requires attainment demonstration SIPs for nonattainment areas to show RFP.

Section 171(1) defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part (part D) or may reasonable be required by the EPA for the purposes of ensuring attainment of the applicable NAAQS by the applicable attainment date." The SO_2 nonattainment area SIP guidance explains that this definition is most appropriate for pollutants emitted by numerous and diverse sources where inventory-wide reductions are often needed to attain a standard. Furthermore, the definition is generally less pertinent to pollutants like SO_2 that usually have a limited number of sources affecting areas and where emissions controls for such sources result in swift and dramatic improvement in air quality. Therefore, U.S. EPA explained that RFP is best construed as "adherence to an ambitious compliance schedule."

Demonstration: RFP requirements are established as part of the attainment demonstration SIPs due in April of 2015. Because this area attained the standard prior to the due date, Ohio EPA is not obligated to submit the RFP attainment demonstration elements. Regardless, the only source of emissions in the area for which RFP would apply according to U.S. EPA guidance would have been the Walter C. Beckjord facility and considering the permanent shut down occurred four years prior to the attainment date, the requirement for an ambitious compliance schedule would have been met.

Requirement 3 of 6: Section 172(c)(3) requires states to submit a comprehensive inventory of actual emissions.

Section 172(c)(3) requires states to submit a comprehensive inventory of actual emissions in the area, including the requirement for periodic revisions as determined necessary. 40 CFR 51.1008 requires such inventory to be submitted within three years of designation and requires a baseline emission inventory for a suitable year to be used for attainment planning.

The SO_2 nonattainment area SIP guidance provides the SO_2 inventory requirements for attainment demonstration SIPs.

The inventory should also include an attainment year inventory with projected emissions for all SO_2 sources. The inventory should also include the best available information on current enforceable SO_2 emission rates (allowable or permitted rates) for the SO_2 sources located in the nonattainment area.

Demonstration: Although this area attained the standard prior to the due date of attainment demonstrations SIPs, Ohio EPA is still obligated to submit inventory elements. Many of these elements overlap the inventory requirements for the redesignation request and maintenance plan.

The Campbell-Clermont KY-OH area comprehensive inventory is being submitted to U.S. EPA with this redesignation request and maintenance plan. The inventory is discussed in Chapter Four along with documentation on how the inventory was generated. For purposes of establishing a base year, the 2011 nonattainment year was selected.

The following identifies Ohio's inventory for the Ohio portion of the Campbell-Clermont KY-OH area:

Table 7 – Ohio's 2011 base year inventory

Sector	2011 Base (TPY)
EGU Point Sources: Walter C. Beckjord Power Plant	90,834.50
Non-EGU Sources: None	0.00
Non-road	0.17
Other	7.50
On-road	0.34
TOTAL	**90,842.51**

Ohio also updates its inventory in accordance with U.S. EPA's CERR rule (i.e. emissions statements). Ohio EPA submitted its emissions statement SIP on March 18, 1994 which was approved by U.S. EPA on October 13, 1995 (59 FR 51863). As discussed in Chapter Four (Requirement 4 of 4), Ohio EPA submits, and commits to submit, emission inventories (statements) every three years.

Requirement 4 of 6: Evidence that control measures required in past SO_2 SIP revisions have been fully implemented.

Demonstration: In addition to the historic RACM and RACT requirements for SO_2, Ohio has fully implemented the OAC Chapter 3745-18 regulations and CAIR requirements.

On March 10, 2004, the U.S. EPA promulgated the CAIR. Beginning in 2009, U.S. EPA's CAIR rule requires EGUs in 28 eastern states and the District of Columbia to significantly reduce emissions of NO_x and SO_2. Ohio submitted a CAIR SIP which was approved by U.S. EPA on February 1, 2007. Revisions to the CAIR SIP were again submitted on July 15, 2009. The revised CAIR SIP was approved as a direct final action on September 25, 2009 (74 FR 48857). CAIR was replaced by the more stringent CSAPR requirements beginning in 2015.

OAC Chapter 3745-18[13] is Ohio's SIP approved rules for the regulation of SO_2. This set of rules contains general requirements for the entire state along with facility specific requirements for significant emitters of SO_2. Specifically, OAC rule 3745-18-19 regulates emissions from Clermont County while OAC rule 3745-18-37 regulates emissions from Hamilton County (to the west).

Requirements are incorporated into permits along with monitoring, recordkeeping, and reporting necessary to ensure ongoing compliance. Ohio EPA also has an active enforcement program to address violations discovered by field office staff.

Requirement 5 of 6: Acceptable provisions to provide for new source review.

Demonstration: Ohio has a longstanding and fully implemented NSR program. This is addressed in OAC Chapter 3745-31[14]. The Chapter includes provisions for the PSD permitting program in OAC rules 3745-31-01 to 3745-31-20. Ohio's PSD program was conditionally approved on October 10, 2001 (66 FR 51570) and received final approval on January 22, 2003 (68 FR 2909) by U.S. EPA as part of the SIP. The latest revisions to OAC Chapter 3745-31 were approved into Ohio's SIP on February 20, 2013 (78 FR 11748).

Any facility that is not listed in the 2011 emission inventory, or for the closing of which credit was taken in demonstrating attainment, will not be allowed to construct, reopen, modify, or reconstruct without meeting all applicable NSR requirements. Once the area is redesignated, Ohio EPA will implement NSR through the PSD program.

13 http://www.epa.ohio.gov/dapc/regs/3745_18.aspx
14 http://www.epa.ohio.gov/dapc/regs/3745_31.aspx

Requirement 6 of 6: Assure that all existing control measures will remain in effect after redesignation unless the state demonstrates through modeling that the standard can be maintained without one or more control measures.

Demonstration: Ohio commits to maintaining the aforementioned control measures after redesignation. Ohio hereby commits that any changes to its rules or emission limits applicable to SO_2 as required for maintenance of the 1-hour SO_2 standard in the Ohio portion of the Campbell-Clermont KY-OH area, will be submitted to U.S. EPA for approval as a SIP revision.

Ohio, through Ohio EPA's Legal office and the Ohio Attorney General's office, has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. After redesignation, it intends to continue enforcing all rules that relate to the emission of SO_2 precursors in the Campbell-Clermont KY-OH area.

CHAPTER SIX: Contingency Measures

CAA Section 107(d)(3)(E)(v)

Requirement 1 of 4: A commitment to submit a revised plan eight years after redesignation.

Demonstration: Ohio hereby commits to review its maintenance plan eight years after redesignation, as required by Section 175A of the CAA.

Requirement 2 of 4: A commitment to expeditiously enact and implement additional contingency control measures in response to exceeding specified predetermined levels (triggers) or in the event that future violations of the ambient standard occur.

Section 175A(d) requires contingency provisions to promptly correct any violation of the SO_2 NAAQS that occur after redesignation. Unlike Section 172(c)(9), Section 175A does not explicitly require contingency measures take effect without further action by the state. Rather the maintenance plan should ensure contingency measures are adopted and implemented as expeditiously as practicable once they are triggered. The plan should clearly identify the measures to be adopted, provide a schedule and associated procedures for adoption and implementation, and provide a specific time limit for action.

The *General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990* (April 16, 1992, 57 FR 13498) and the SO_2 nonattainment area SIP guidance (page 41 to 42) provides further discussion on contingency measures specifically for SO_2. In many cases, attainment revolves around compliance of a single source, or small set of sources, with emission limits shown to provide for attainment. In those cases, U.S. EPA interprets contingency measures to mean the state has a comprehensive program to identify sources of violations of the SO_2 NAAQS and to undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIPs. (57 FR 13547)

Demonstration: As discussed in this submittal, since the permanent shutdown of Walker C. Beckjord there are no other sources in the nonattainment area with potential to cause a violation. Because of the absence of sources with a potential to cause a violation, Ohio cannot anticipate any future cause of a violation in this area and thus what contingency measures might be warranted to help address any future violation. However, as discussed elsewhere, Ohio EPA also has an active enforcement program to address violations and Ohio EPA will continue to

operate a comprehensive program to identify sources of violations of the SO_2 NAAQS and to undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIPs. Ohio hereby commits to adopt and expeditiously implement necessary corrective actions in the event of a violation.

In the event adoption of any additional control measures is necessary, they are subject to Ohio's administrative and legal process. This process will include publication of notices, an opportunity for public hearing, and other measures required by Ohio law for rulemaking.

If a new measure/control is already promulgated and scheduled to be implemented at the federal or state level, and that measure/control is determined to be sufficient to address a violation of the SO_2 NAAQS, additional local measures may be unnecessary. Furthermore, Ohio will submit to U.S. EPA an analysis to demonstrate the proposed measures are adequate to return the area to attainment.

Requirement 3 of 4: A list of potential contingency measures that would be implemented in such an event.

Demonstration: Given that there are no other significant point sources in the area at this time, it is not possible to determine what control measures will be appropriate at an unspecified time in the future. Potential measures could include tighter SO_2 emissions offsets for new and modified major sources or additional SO_2 RACT for affected sources in the area. The absence of sources with any evident potential to cause violations means that Ohio cannot anticipate what might cause a violation in this area, and thus what contingency measures might exists that would address any future violation.

> Regardless, Ohio hereby commits to adopt and expeditiously implement necessary corrective actions in the following circumstances:
>
> Warning Level Response:
> A warning level response shall be prompted whenever the annual average 99th percentile maximum daily 1-hour SO_2 concentration of 79 ppb occurs in a single calendar year within the maintenance area. A warning level response will consist of a study to determine whether the SO_2 value indicates a trend toward higher SO_2 values or whether emissions appear to be increasing. The study will evaluate whether the trend, if any, is likely to continue and, if so, the control measures necessary to

reverse the trend taking into consideration ease and timing for implementation as well as economic and social considerations. Implementation of necessary controls in response to a warning level response trigger will take place as expeditiously as possible, but in no event later than 12 months from the conclusion of the most recent calendar year.

Action Level Response:
An action level response shall be prompted whenever a two-year average of the 99th percentile maximum daily 1-hour SO_2 concentrations of 76 ppb or greater occurs within the maintenance area. A violation of the standard (the three-year average of the 99th percentile maximum daily 1-hour value SO_2 concentration of 75 ppb or greater) shall also prompt an action level response. In the event that the action level is triggered and is not found to be due to an exceptional event, malfunction, or noncompliance with a permit condition or rule requirement, Ohio EPA in conjunction with the metropolitan planning organization or regional council of governments, will determine additional control measures needed to assure future attainment of the NAAQS for 1-hour SO_2. In this case, measures that can be implemented in a short time will be selected in order to be in place within 18 months from the close of the calendar year that prompted the action level. Ohio EPA will also consider the timing of an action level trigger and determine if additional, significant new regulations not currently included as part of the maintenance provisions will be implemented in a timely manner and will constitute our response.

Contingency measures to be considered will be selected from a comprehensive list of measures deemed appropriate and effective at the time the selection is made. The selection of measures will be based on cost-effectiveness, emission reduction potential, economic and social considerations or other factors that Ohio EPA deems appropriate. Ohio EPA will solicit input from all interested and affected persons in the maintenance area prior to selecting appropriate contingency measures.

No contingency measure shall be implemented without providing the opportunity for full public participation during which the relative costs and benefits of individual measures, at the time they are under consideration, can be fully evaluated.

Requirement 4 of 4: A list of SO_2, sources potentially subject to future additional control requirements.

Demonstration: Given that there are no other significant point sources in the area at this time, it is not possible to provide a list of potentially subject sources.

CHAPTER SEVEN: Public Participation

Ohio published notification for a public hearing and solicitation for public comment concerning the draft redesignation petition and maintenance plan in a widely distributed county publication.

The public hearing to receive comments on the redesignation request was held on April 16, 2015, at the Pierce Twp. Administration Building, 950 Locust Corner Road, Cincinnati, Ohio 45245. The public comment period closed on April 16, 2015. Appendix H includes a copy of the public notice, the transcript from the public hearing, and when applicable, a response to comments document.

CHAPTER EIGHT: Conclusions

The Campbell-Clermont KY-OH SO_2 nonattainment area has attained the 2010 1-hour NAAQS for SO_2 and complied with the applicable provisions of the 1990 Amendments to the CAA regarding redesignations of SO_2 nonattainment areas. Documentation to that effect is contained herein. Ohio EPA has prepared a redesignation request and maintenance plan that meet the requirements of Section 110(a)(1) of the 1990 CAA.

Based on this presentation, the Campbell-Clermont KY-OH 1-hour SO_2 nonattainment area meets the requirements for redesignation under the CAA and U.S. EPA guidance. Ohio has performed an analysis that shows the air quality improvements are due to permanent and enforceable measures. Furthermore, because the only contributing source in this area has permanently shut down, continued compliance (maintenance) with the standard with an increasing margin of safety is ensured. Ohio has also demonstrated that sources surrounding the nonattainment area will not cause an exceedance of the standard at any point in the nonattainment area or are located at sufficient distance to ensure that concentrations at the monitor are representative of the nonattainment area as a whole.

The State of Ohio hereby requests that the Campbell-Clermont KY-OH 1-hour SO_2 nonattainment area be redesignated to attainment simultaneously with U.S. EPA approval of the maintenance plan provisions contained herein.

This page left intentionally blank