TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 14, 2014

Environmental Protection Agency
Air Docket
Mail Code: 2822T
1301 Constitution Ave., NW
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OAR-2013-0711

Dear Sir or Madam,

The Texas Commission on Environmental Quality (TCEQ) appreciates the opportunity to respond to the United States Environmental Protection Agency's (EPA) proposed data requirements rule for the one-hour sulfur dioxide primary National Ambient Air Quality Standard (79 FR 27446), published in the *Federal Register* on May 13, 2014.

Detailed comments on the proposed rule are enclosed. If there are any questions concerning the TCEQ's comments, please contact Mr. Steve Hagle, P.E., Deputy Director, Office of Air, at 512-239-1295 or steve.hagle@tceq.texas.gov.

Sincerely,

Richard A. Hyde, P.E.
Executive Director

Enclosure

cc: Guy Donaldson, EPA R6

COMMENTS BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY REGARDING THE PROPOSED DATA REQUIREMENTS RULE FOR THE 1-HOUR SULFUR DIOXIDE (SO_2) PRIMARY NATIONAL AMBIENT AIR QUALITY STANDARD

DOCKET ID NO. EPA-HQ-OAR-2013-0711

I. Summary

On May 13, 2014, the United States (U.S.) Environmental Protection Agency (EPA) published in the *Federal Register* a notice of proposed rulemaking regarding the Data Requirements Rule for the 1-Hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS) (79 FR 27446). The Texas Commission on Environmental Quality (TCEQ) provides the following comments on this proposed rule.

II. Comments

A. Area Designations

The TCEQ strongly disagrees with the EPA's intention to use data developed under this proposal for future rounds of area designations under the 2010 SO_2 NAAQS, for those areas that have not yet been initially designated. The EPA is well past the deadline to act on states' recommendations and data for initial designations for the 2010 standard. The EPA must immediately designate all areas in the country based on the data already submitted, or if data is lacking for certain areas, to designate those as unclassifiable.

In Federal Clean Air Act (FCAA) § 107(d) [42 U.S.C. § 7402(d)], Congress directed that the EPA promulgate NAAQS designations no later than three years after the promulgation of a new NAAQS. Congress also directed that, if the Agency lacked sufficient information to make an area designation, it must designate that area as unclassifiable. Requiring states to develop monitoring or modeling data in accordance with this proposal for designations ignores the statutory mandate. Instead, the proposal arbitrarily grants the EPA up to an additional seven years to do what the Agency was mandated to do by June 2013: designate all areas of the country as either attainment, nonattainment, or unclassifiable.

Congress gave the EPA a clear directive that the Agency must promulgate NAAQS designations within three years from the promulgation of a new NAAQS. The designation process begins with the Governor of each state submitting to the EPA Administrator "initial designations" of "attainment," "nonattainment," or "unclassifiable." FCAA, § 107(d)(1)(A); 42 U.S.C., § 7407(d)(1)(A). Upon receipt of the Governor's initial designations, the EPA Administrator "shall promulgate the designations of all areas (or portions thereof) submitted [by the Governor] as expeditiously as practicable, but in no case later than 2 years from the date of promulgation of the new or revised [NAAQS]." FCAA, § 107(d)(1)(B)(i); 42 U.S.C., § 7407(d)(1)(B)(i). When the Administrator determines that she "has **insufficient information** to promulgate the designations," she may request an additional year in which to promulgate area designations. *Id.* (emphasis added). In August 2012, then-EPA Administrator Jackson announced that she lacked sufficient information to make area designations for the one-hour SO_2 NAAQS. *See* Extension of Deadline for Promulgating Designations for the 2010 Primary SO_2 NAAQS, 77 Fed. Reg. 46,295, 46,296/3 (Aug. 3, 2012).

Then-Administrator Jackson's announcement that she lacked sufficient information to promulgate area designations was preceded by statements from the EPA affirming this to be the case. See Primary National Ambient Air Quality Standard for Sulfur Dioxide; Final Rule, 75 Fed. Reg. 35,520, 35,552/1, 35,574/3 (June 22, 2010) (The EPA stated that it expected that most, if not all, of the country would be initially designated unclassifiable); see also Memorandum to

Regional Air Directors, March 24, 2011. The EPA continues to consistently assert that it lacks sufficient information to designate areas of the country as attainment or nonattainment for the SO_2 NAAQS.

As of June 3, 2013, the EPA could have proceeded to promulgate area designations of attainment, nonattainment, or unclassifiable for the entire nation. The EPA has long had the states' initial area designation recommendations; the EPA has analyzed the states' recommendations and data; and the EPA has drawn conclusions as to whether it had sufficient information to proceed with promulgating area designations for all areas of the country. Many states provided the EPA with data and analysis demonstrating attainment of the SO_2 standard and consequently submitted initial designations of attainment. On April 20, 2012, Texas provided the EPA with the most recent monitored data (2009-2011) showing 10 counties attaining the 2010 standard, and recommending all remaining counties in the state should be designated as unclassifiable.

However, the EPA purposefully ignored its nondiscretionary duty to designate all areas of the country within the three years mandated by the FCAA solely because the EPA stated it does not believe it has sufficient information to make a majority of the area designations for the SO_2 NAAQS. The EPA ignores the fact that if it believes it lacks sufficient information to make attainment or nonattainment designations within that time frame, the statute already provides unambiguous direction. The statute directs the EPA to designate the areas as unclassifiable. Rather than take this mandatory action, the EPA wants instead to significantly postpone promulgating any further designations until it can develop and implement an elaborate new data-gathering system.

The EPA acknowledges that this data requirements rule has been proposed because many areas of the country "do not have sufficient air quality monitoring in place to identify maximum 1-hour SO_2 concentrations." 79 Fed. Reg. 27,446/1. The EPA further acknowledges that "the air quality data developed by the states in accordance with this rulemaking would be used by the EPA in future rounds of area designations for the 1-hour SO_2 [NAAQS]." Id. The acting Assistant Administrator for the EPA Office of Air and Radiation, Janet McCabe, by sworn affidavit to the U.S. District Court for the Northern District of California averred, "EPA believes that it was appropriate to not promulgate area designations for rest (sic) of the country due to the lack of sufficient monitoring (and modeling) data." What the EPA may believe is appropriate is beside the point here. FCAA, § 107(d) gives the EPA a clear directive not only as to how long the Agency has to promulgate NAAQS designations – which it has failed to follow - but also what those designations must be if the EPA lacks (or believes it lacks) sufficient information within the time allotted to make a finding of attainment or nonattainment.

In this proposal, the EPA seeks to go well beyond what FCAA, § 107(d) prescribes to allow up to an additional seven years to complete all remaining area designations. The FCAA requires that the EPA immediately take the ministerial act of designating all areas of the country as unclassifiable for which the EPA concluded as of June 2013 that it believed lacked sufficient data to make designations of attainment or nonattainment. For those areas of the country where the EPA has data showing attainment and the EPA has not determined the data is insufficient, then the EPA must immediately proceed to promulgate attainment designations.

The EPA's subsequent proposed entry of a consent decree regarding the schedule for area designations conflicts with this proposal and compromises the TCEQ's ability to effectively comment if the agreement is ultimately entered with the court.

On June 2, 2014, the EPA published notice of a proposed consent decree (CD) to address a non-discretionary duty lawsuit filed by Sierra Club and the Natural Resource Defense Council (*Sierra Club et al v. McCarthy*, Civil Action No. 3:13-cv-3953-SI (N.D. Cal.)). 79 Federal Register

31325. Substantively, the CD violates 107(d) of the CAA. The EPA may only designate areas as violating or complying with a NAAQS where relevant data indicates. Where no data exists, the statute provides an "unclassifiable" designation. Nothing in section 107 allows the EPA, whether through rule or settlement agreement, to designate an area based solely on the presence of large emitting sources without any indication of their contribution to violation of a NAAQS. The CD also shares an infirmity with the proposed data requirements rule, as discussed in the previous comment. The CD violates the FCAA by allowing the EPA to issue initial designations well beyond the date of promulgation of the SO_2 standard. The EPA should have designated all areas of the country by June 2013, three years after the 2010 promulgation of the revised SO_2 NAAQS. The CD gives the EPA up to an additional four and a half years after the statutory deadline to make all designations for the SO_2 NAAQS.

Even though the proposed data requirements rule and the CD share several legal shortcomings, the CD differs significantly from the data requirements rule and, if entered by the court prior to promulgation of the rule, will take precedence. The EPA has not given any notice of this consent decree and its impact on the present proposal. In order to give all interested persons adequate opportunity to comment on the data requirements rule proposal, the EPA should withdraw this proposal and re-propose if the consent decree is finally entered by the court and becomes legally enforceable by the plaintiffs in that case.

The TCEQ supports the use of ambient air quality monitoring data for SO_2 as the only valid basis for making attainment or nonattainment designations and considers the existing monitoring network adequate for making attainment designations.

The TCEQ does not support the use of modeling as the basis for designations. Such a designation has serious consequences to industry, the economy of an area, its citizens, and the state. Nonattainment designations should only be made based on data from 40 CFR Part 58 compliant (regulatory) monitoring showing a violation of the standard. Using modeling to determine a nonattainment designation could result in major capital expenditures for industry to "fix" something that may not be a real problem.

To designate an area based on modeling is inconsistent with historical and present EPA policies. For example, the EPA does not redesignate when an area models attainment as part of an attainment demonstration state implementation plan (SIP). The EPA uses monitoring data to verify attainment before redesignating.

The EPA should reconsider the proposed timeline, monitoring-related financial burden, and monitoring to modeling penalties as they appear to make modeling the only viable option states have for assessing attainment. The EPA should remove the obstacles the proposed rule places in the way of reaching its stated goal of providing states with options for characterizing air quality.

Modeling is a predictive tool that may aid states in monitor-placement decisions. However, modeling is not appropriate for compliance determination and therefore designation. In particular, the EPA is aware of technical issues raised by co-regulators and other stakeholders related to the AERMOD system and modeling procedures that question the use of modeling to determine attainment classifications. Therefore, it is wholly inappropriate to use modeled concentrations to determine existing air quality and associated NAAQS designations and, by extension, predict health effects risk related to SO_2 exposure.

The EPA should clarify that areas can be directly designated or redesignated to attainment based on qualifying monitoring data.

As states may be unable to have monitors deployed by the EPA's deadline, areas may subsequently be designated as non-attainment based on modeling. Then, once monitoring data

is available, it may demonstrate attainment. If this occurs, the EPA should directly redesignate the area to attainment, without requiring the state to go through all the redesignation/maintenance plan requirements.

B. Use of Modeling

While the TCEQ continues to oppose the use of modeling for designations, we have specific comments below to address the proposed modeling approach.

The TCEQ disagrees with the EPA's characterization of SO_2 evolution in the atmosphere, as it may result in overprediction of ambient SO_2 levels.

In Section II. D of the preamble, the EPA justifies the use of AERMOD by noting, "...because ambient SO_2 concentrations are not the result of complex chemical reactions (unlike ozone or $PM_{2.5}$), they can be modeled accurately using well-understood air quality modeling tools, especially in areas where one or only a few sources exist."[1] The processes of SO_2 evolution in the atmosphere are not as simple as the EPA purports. Conversion of SO_2 to sulfate in the atmosphere does occur and is a complex process involving various chemical species and multiple phases. While the conversion may not significantly affect SO_2 concentrations immediately near the stack, not considering the removal of SO_2 would result in higher predicted concentrations at certain receptors. This overprediction would affect the size of a nonattainment area as well as subsequent potential control strategies.

To avoid potential modeled overprediction of SO_2 concentrations and subsequent wasted resources, unnecessary nonattainment designations, and unnecessary control strategies, the EPA should provide states with documentation of all technical issues and fixes that have been identified with the AERMOD system.

The TCEQ is not always aware of all the EPA discussions of issues and potential AERMOD and AERMET fixes with selected stakeholders. The TCEQ requests to be informed of the issues and fixes associated with each regulatory and non-regulatory portion of the AERMOD modeling system that have been identified by the EPA or any third party to the EPA. Of particular interest is information on how to adjust the modeling process or predicted concentrations.

The EPA should provide states the flexibility to use tools that are better suited to accounting for the chemical reactions of SO_2 in the atmosphere.

The EPA continues to refer to AERMOD as a well-understood air quality model and anticipates that states would use AERMOD to conduct designations modeling, as AERMOD is the EPA's preferred near-field dispersion model.[2] However, the EPA is aware of some technical issues raised by co-regulators and other stakeholders related to modeling.[3] Of particular concern is EPA's continued reliance on the AERMOD development evaluations in light of known technical issues.[4] While AERMOD can predict high concentrations that were observed at a nearby monitor from an isolated source, there was no attempt during the model's development to match predicted concentrations to monitored concentrations at the same time and location of the monitor. In addition, there was no attempt to model the transformation of SO_2 or determine deposition downwind. Therefore, while AERMOD can be used to model sources to demonstrate compliance for prevention of significant deterioration modeling, it seems ill-suited for demonstrating compliance with a one-hour standard based on the three-year average of the annual 99th percentile of the daily maximum one-hour average concentrations.

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[1] 79 FR 27449.
[2] 79 FR 27463.
[3] 79 FR 27451 and as discussed during the EPA Regional/State/Local Modelers Workshop, May 19-22 2014, Salt Lake City, UT.
[4] 79 FR 27463.

Photochemical grid models, like CAMx, can consider chemical transformation, reactions in the presence of strong ultraviolet light, wet deposition, and aqueous chemistry. There are several papers that lead to the conclusion that SO_2 releases should not be treated as non-reactive pollutants like lead. Zhou, *et al*, studied power plant plumes (PPPs) and concluded that, "SO_2 freshly emitted from power plant stacks is quickly diluted and undergoes chemical evolution during plume transport. Previous aircraft measurements in PPPs have revealed that gas-phase SO_2 oxidation is the key pathway for SO_2 removal and the particle growth in PPPs in the absence of clouds (Brock et al., 2002, 2003; Springston et al., 2005). SO_2 can also readily dissolve in cloud water and then convert to sulfate via aqueous reactions."[5] The capability of these more complex photochemical models is important in Texas, and many other states, as SO_2 may react more quickly with clouds and humidity on cloudy days to form sulfuric acid (H_2SO_4) This can occur in approximately two hours in a rural area example – more quickly than EPA's default AERMOD SO_2 half-life of four hours in urban areas. A 2013 Environ report suggests that other approaches are needed to determine more representative predictions rather than using a simplified exponential decay factor.[6] In addition, while AERMOD does not consider exponential decay in rural areas, past and recent studies, such as those conducted by the Tennessee Valley Authority, indicate that it should.[7]

The EPA should explicitly allow for alternate approaches to identify the sources that should be modeled using refined dispersion modeling.

Application of a regional grid model, such as CAMx, at relatively high resolution (1 – 4 kilometers) and additional targeted receptors as needed, combined with conservative assumptions about emissions and a threshold concentration inversely proportional to the grid cell area should suffice to identify possible areas of concern. Advantages of this approach include the ability to include additional SO_2 sources; use of prognostic (e.g., weather research and forecasting (WRF)) wind fields rather than "straight-line" winds from discrete National Weather Service (NWS) locations; chemical processing of SO_2 emissions; treatment of wet and dry deposition; and accounting for impacts beyond the 50 kilometer range over which AERMOD is viable. Additionally, using a grid model could provide estimates of background values that should be more representative than those derived from other techniques.

The EPA should allow states to use modeling inputs that support the best approximation of actual conditions.

In this case, the purpose of modeling is to replicate or approximate actual conditions and concentrations. As such, the EPA should allow the use of actual emission conditions, such as actual emissions and actual stack heights.

The TCEQ considers the modeling cost estimates noted by the EPA to be under estimates for anything other than the simplest modeling scenarios.

In Section II. F of the preamble, the EPA references environmental groups' claim that "...the cost of modeling assessments for certain source areas could be done for $10,000."[8] The TCEQ calculates that this would only allow a consulting firm about 65 hours for a complete project, from creating a modeling protocol, to collecting inputs (emissions and meteorology), to creating

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[5] W. Zhou, D.S. Cohan, R.W. Pinder, J.A. Neuman, J.S. Holloway, J. Peischl, T.B. Ryerson, J.B. Nowak, F. Flocke, W.G. Zheng, Observation and modeling of the evolution of Texas power plant plumes, Atmos. Chem. Phys., 12, 455-468, 2012.

[6] Environ, Development of Transformation Rate of SO2 to Sulfate for the Houston Ship Channel using the TexAQS 2006 Field Study Data, October 2013, AQRP Project 12-103.

[7] Menachem Luria, Robert E. Imhoff, Ralph J. Valente, William J. Parkhurst, and Roger L. Tanner. Rates of Conversion of Sulfur Dioxide to Sulfate in a Scrubbed Power Plant Plume, October 2001, J. Air & Waste Manage. Assoc. 51:1408-1413.

[8] 79 FR 27451.

input files and manipulating model options, to analyzing output, and writing a detailed report. This is perhaps possible for a simple isolated rural electric generating unit (EGU) in flat terrain. However, the cost could easily become five times the stated estimate as the complexities of the project accumulate. Likely considerations that add to the cost of modeling include multiple sources, nearby sources (clustering), nearby structures providing downwash issues, complex terrain, ambient air determinations, and/or source culpability issues.

In Section VI. B of the preamble, the EPA claims that "...an estimate of modeling costs for a single modeling run centered on an identified source would be approximately $30,000."[9] The TCEQ concurs that $30,000 is a good estimate for a fairly simple single source, but this estimate could easily double as the complexities of multiple sources, temporal allocation down to hourly emissions, downwash analyses, clustering analyses, culpability testing, and negotiations with regional EPA staff are added to the modeling project.

C. Source Coverage and Emission Thresholds

Because the 2010 primary SO_2 NAAQS is based on protecting public health, the TCEQ supports use of emissions and population-based thresholds.

The EPA revised the SO_2 NAAQS in 2010 to protect public health from acute health effects due to short-term (one hour) SO_2 exposures. Reasonable implementation criteria should then be adopted to ensure the EPA and states are adequately assessing the potential for health effects related to SO_2 exposure. A threshold approach that considers population would ensure the characterization of air quality in areas where there is a higher potential for public exposure. A threshold approach based purely on emissions could inappropriately focus limited resources on areas with limited to no public exposure.

The U.S. Census Bureau estimates 86% of the Texas population resides in urban areas, while 14% resides in rural areas. Similarly, approximately 55% of the total U.S. population is centered in Core Based Statistical Areas (CBSA) with 1,000,000 (1M) or more people. These population centers represent locations of higher potential public exposure and, therefore, characterization of air quality in these areas would be more representative of the public's SO_2 exposure risk. As precedent, a population threshold of 1M or more persons has been used to establish the minimum monitoring requirements for nitrogen dioxide, carbon monoxide, and particulate matter, as well as for the population weighted emissions index (PWEI) for area-wide SO_2.

Given SO_2 emission reduction trends, the TCEQ favors an emission threshold approach to characterize only the largest sources with the greatest potential for relatively higher SO_2 concentrations.

At the stakeholder meetings held May 30 through June 1, 2012, a number of stakeholders commented that, given constraints on resources for characterizing air quality, focusing on the largest sources of emissions is a reasonable principle for prioritizing what to evaluate for assessing attainment of the one-hour SO_2 NAAQS. Anticipating future SO_2 reductions in Texas, the TCEQ is supportive of emission thresholds that cover the largest sources of emissions, as originally discussed in the context of the objective to focus resources on the sources with the greatest potential for relatively higher SO_2 concentrations.

The following options, listed in order of TCEQ support, focus the limited available resources at the local, state, and federal levels toward characterizing air quality in areas having the largest SO_2 emitting sources.

[9] 79 FR 27468, last paragraph.

The TCEQ proposes a new Option 4: 10,000 tpy SO_2 sources in any area of the state, and 5,000 tpy SO_2 sources in CBSAs greater than 1M. These thresholds provide coverage of 13 Texas sources representing 75% of the total 2012 reported point source inventory.

The proposed rule does not justify why sources of 1,000 tpy, 2,000 tpy, or 3,000 tpy are likely to or expected to potentially result in a NAAQS violation and therefore require monitoring or additional modeling. To focus limited resources, the EPA should only consider EPA Option 3 (10,000 tpy SO_2 sources in any area of the state, and 3,000 tpy sources in CBSAs greater than 1M) or higher threshold levels.

A modified version of EPA Option 2, with limits at 5,000 tpy SO_2 sources in any area of the state, and 3,000 tpy SO_2 sources in CBSAs greater than 1M, would provide coverage of 18 Texas sources representing 83% of the total 2012 reported point source inventory.

The EPA's proposed source threshold Option 1 does not provide substantially more air quality information than the EPA's other options or the TCEQ's preferred options. The EPA's Option 1 would be much more resource intensive for the TCEQ, allowing less time for rigorous analyses, while the TCEQ's preferred options would allow for more thorough and rigorous analysis of the highest emitting SO_2 sources in Texas.

The February 2012 EPA SO_2 Strategy Paper states that one important objective for assessing localized NAAQS impact is to characterize air quality near the largest emitters.

The EPA's proposed Option 1 requires characterization of 12 more emission sources than Option 2, but only equates to characterizing air quality for 7.5% more of the total 2012 SO_2 emission inventory in Texas. In addition, half of these sources are located in rural areas of the state where there is limited potential for public exposure. The added monetary and resource costs associated with modeling or monitoring under Option 1 are not balanced by an equal benefit to the EPA's stated objective of protecting the public from short-term SO_2 exposure.

While the EPA's "2-pronged" approach would reasonably apply a lower emissions threshold in areas with higher populations, this can be accomplished using more recent EI data at thresholds of 3,000-10,000 tpy, without burdening states with unnecessary modeling or monitoring.

To promote national consistency and assist states with making viable implementation plans, the EPA should develop a process or criteria to identify any sources that may be requested for evaluation beyond those determined by the rule's thresholds. The EPA should make clear in all guidance and procedures for this rule that states truly have the option to monitor or model sources below the thresholds established in the final rule.

In Section III.A of the preamble, the EPA states that the reason for a threshold is to focus limited resources to areas having the largest sources. However, in Sections III.B and IV.A, the EPA states that the proposal only identifies the minimum number of sources the state must evaluate, and that the Regional Administrator may identify sources beyond the minimum to be evaluated -- even if the state has no sources above the rule threshold.[10] The potential need to evaluate additional sources undermines a state's ability to anticipate resource demands and make solid implementation plans.

If the Regional Administrator requests evaluation of additional sources, states need sufficient time (likely to be at least three years) so they are not forced into modeling to meet the EPA's deadlines. It is crucial that states have the flexibility to choose which method to use to determine attainment in a way that best suits the states' emissions sources and resources.

[10] 79 FR 27455, 27457, and 27458.

The TCEQ favors allowing states the option of using either appropriately reviewed and publicly available emissions inventory data or the most recent emissions inventory data published by the EPA.

Section 51.1201 of the proposed rule reads "The subject air agency shall identify applicable sources of SO_2 based on the most recent publicly available annual SO_2 emissions data..." and §51.1200 states "Annual SO_2 emissions data means the quality-assured annual SO_2 emissions data for a stationary source as reported to the EPA in accordance with any existing regulatory requirement..." The 2014 point source emissions inventory will be reviewed by states and reported to the EPA by December 31, 2015, so it will be the most recent publicly available inventory before the January 15, 2016 deadline for all states to notify the EPA which sources subject to the rule will be monitored or modeled. However, it is only reasonable to utilize such data to omit a monitoring site as it is impractical to deploy a monitoring site within a period of a few weeks.

The EPA should also clarify whether SO_2 monitoring data submitted to the EPA's Clean Air Markets Division could also be used to identify applicable sources as this may allow for use of more up-to-date information.

The EPA should issue timely guidance on selecting designation levels and boundaries, including guidance on addressing areas without SO_2 sources, to promote national consistency for this round of boundary recommendations.

In Section III of the preamble, the EPA discusses proposed threshold options to focus limited resources at the local, state, and federal levels toward characterizing air quality in areas having the largest SO_2 emitting sources. Later in Section IV.E, the EPA states that it expects to designate the majority of the country in 2017,[11] and the only areas the EPA would not be ready to take action on in 2017 are the areas for which states have elected to install new monitors. The EPA states it could designate as unclassifiable/attainment any area for which the state submits sufficient supporting information to support such designations. However, the EPA does not clearly explain whether the state must use modeling or monitoring data (or both) to identify areas of the state as unclassifiable[12], or whether the state could demonstrate attainment in other ways. For example, areas could be designated based on information such as: no stationary sources of SO_2 in a county; sources well below the threshold; or with statewide screening modeling using a photochemical model that predicts 99th percentile concentrations less than the SO_2 standard.

D. Monitoring

The TCEQ contends that, based on precedent from implementation of the lead (Pb) NAAQS, one monitor could be sufficient to obtain reasonable worst-case highest concentrations near a source or a concentrated group of sources.

From an air quality management perspective, the SO_2 standard can be considered a "source-oriented" NAAQS rather than a "regional" one (i.e., more similar to the lead NAAQS than to the ozone NAAQS). Thus, the lead monitoring requirements for a single, maximum-concentration

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[11] 79 FR 27459. "...Since the EPA expects to designate the majority of the country in 2017, the only areas the EPA would not be ready to take action on in 2017 are the areas for which states have elected to install new monitors."

[12] 79 FR 27459. "Some commenters provided examples of states having large areas with very few SO_2 sources, or no SO_2 sources at all and indicated that such areas would be candidates for an unclassifiable/attainment designation. The EPA finds merit in such examples and suggests that for this next round of SO_2 designations, the air agencies should consider providing the EPA with any recommended boundaries and supporting information for parts of their states for which they recommend an unclassifiable/attainment designation (e.g., an area without SO_2 sources or that is not impacted by sources in other areas)."

monitor sited "taking into account the logistics and potential for population exposure" are also appropriate criteria for SO_2. The lead rule states, "(a) State and, where appropriate, local agencies are required to conduct ambient air Pb monitoring near Pb sources which are expected to or have been shown to contribute to a maximum Pb concentration in ambient air in excess of the NAAQS, taking into account the logistics and potential for population exposure."[13]

The TCEQ agrees that modeling could be useful for determining monitor placement in some cases, but should be a tool used at the discretion of states, locals and tribal areas.

The TCEQ is concerned that the lack of clear criteria provided for designing an SO_2 source-oriented monitoring network puts air agencies in the unreasonable position of designing a monitoring network without knowing whether it will be approved by the EPA. The multitude of uncertainties with and unrealistic timeline for designing and financing a source-oriented SO_2 monitoring network make it seem as if the EPA's true intent is to force air agencies to rely solely on modeling. The TCEQ continues to support designation based solely on monitoring as implied in the FCAA.

E. Timeline Requirements

The proposed monitoring implementation timeline is unnecessarily onerous. The EPA should allow a phased approach similar to the near-road monitoring implementation schedule.

Texas currently has a network of 26 stationary SO_2 monitors. Most of these monitors are in public locations, and the data are representative of concentrations to which the public would be exposed. Data from this monitoring network do not suggest a widespread public health concern indicative of such an onerous implementation schedule as the one proposed. As such, the EPA should extend the implementation timeline to provide states more reasonable time frames for revising the existing monitoring program.

The proposed timeline is flawed for multiple reasons and is therefore not achievable. First, critical elements (such as criteria for characterizing sources, emissions thresholds for monitoring of sources, and proximity to population) are not anticipated to be provided to states until the data requirements rulemaking is finalized in late 2014, just two years before completion of either modeling or monitor deployments are required.

Second, the timeline is not sufficient to allow for the lengthy process of funding procurement through the legislative process. Texas has biennial legislative sessions. The Texas legislature meets in January of odd numbered years for 140 days. Appropriations for additional funding can only be requested during this time period and are granted for the following biennium. If adequate funding resources were allocated for this purpose, those funds would not be disbursed to state agencies earlier than the biennium beginning in September 2015, leaving only 16 months to deploy monitors before the deadline. If the TCEQ were to wait to request additional funding until adequate details are available to provide an accurate estimate of monitoring costs (i.e., after the data requirements rule is final and the monitoring network plan approved), the earliest funds could be appropriated to the TCEQ would be September 2017.

Third, numerous monitoring siting challenges are expected, particularly in rural areas near larger SO_2 sources. These challenges would include proximity to electricity, prohibitive terrain, property owner agreement, and accessibility. The TCEQ recently experienced similar challenges and implementation delays in locating an area-wide SO_2 monitor near a rural source in the Amarillo area. Due to logistical issues, it took over one year to deploy the required SO_2 monitor, even after numerous reconnaissance trips to the area. Based on this and similar experiences, at

[13] 75 FR 81138].

least two to three years will be required to perform the required number of site visits, propose monitor locations, provide public notice through the annual monitoring network plan, secure the monitoring locations, prepare the new site, install the monitors, and perform system tests.

Fourth, the EPA has not proposed assurances or legal deadlines for responses or approvals of the state monitoring network plans that are necessary for states to proceed with deployment of SO_2 monitors. Delays in the EPA's review and approval for monitoring network siting could also force states to model, instead of allowing them to exercise real choice under the proposed data requirements rule. The EPA should provide a process that ensures timely and appealable decisions to assure that the options provided by the data requirements rule are truly available to states.

The TCEQ recommends a more realistic phased approach similar to the near-road implementation schedule. Phase 1 would address sources with emissions of 20,000 tpy and greater by January 1, 2017. Phase 2 would address source emissions of 7,500 tpy and greater by January 1, 2018. Phase 3 would address all remaining source emissions required by January 1, 2019. This phased approach would allow for attainment designation by 2020 for the largest SO_2 emitters while at the same time allowing states to procure funds and resources.

The proposed overly aggressive monitoring implementation timeline could potentially force states into using modeling, despite its shortcomings for this application.

The February 2012 EPA SO_2 Strategy Paper states that, "EPA believes that a dual-pathway approach would be most appropriate. This approach allows flexibility to use either monitoring or modeling for the characterization of current SO_2 concentrations." This statement is not supported in this proposed rule as the aggressive timeline does not provide sufficient time to establish a compliant monitoring network.

Additionally, the TCEQ objects to the EPA's proposal that a source would be automatically "moved" to the modeling pathway if the state is not able to produce complete 2017 first quarter data. The penalty for unanticipated monitoring site delays or data collection hiccups is excessive for states that choose monitoring as the pathway for a particular emission source. Deployment of air monitoring sites for sources in rural areas provides many challenges not faced in urban areas. These challenges include proximity to electricity, prohibitive terrain, property owner agreement, and accessibility. A more flexible timeline, with phased implementation as discussed above, would make the monitoring pathway a more feasible option for states while minimizing wasted resources.

The proposed modeling timeline is not feasible. With the potential challenge of conducting several multi-source analyses using approaches typical for permit evaluation and single-source evaluations, two to four years may be needed for adequate to complete adequate modeling demonstrations. The proposed schedule has insufficient time for informed state planning, modeling preparation, and careful modeling analysis.

The TCEQ estimates there could be a minimum of 12 and as many as 32 modeling protocols required. One year is not enough time for the state to develop a strategy, consult with sources and the EPA, develop modeling protocols, and obtain the EPA's approval of the protocols.

Assuming that emissions thresholds, population limits, and other tools limit the number of sources to be explicitly modeled, the modeling itself (not including emission inventory and meteorological input development; protocol development; preparatory work; post-processing of results; final analysis; and report development) could be completed in approximately one to two years, with a team of six to eight modelers and analysts working full-time. Texas does not have

these resources. In addition, the EPA significantly underestimates the cost of a refined modeling analysis.[14] [15]

One year is not enough time to complete modeling demonstrations. Depending on the scope of the modeling required, it would take two to four years to complete the entire process. The modeling time estimate will increase if refined modeling is required to site monitors and if the EPA expects the states to submit modeling protocols and not conduct any refined modeling to support monitor placement decisions until the EPA approves the protocols.

The EPA should provide a list of models, such as CAMx, that have been used extensively in regulatory assessment, that states can use without being required to submit lengthy justification and model performance studies. Since models like CAMx have been used by many state agencies and the EPA to provide air quality assessments, states should not be required to go through the rigor specified in Appendix W Section 3.2.2(e).

The EPA's guidance for attainment demonstrations (EPA-454/B-07-002) allows states to determine which model is appropriate with input from the EPA. The EPA should not require states to follow the onerous alternative model justification procedure in Section 3.2 of Appendix W of 40 CFR Part 51 to use CAMx as well as AERMOD for this rule as that would include information well known to EPA and amounts to unnecessary work, wasted resources, and lost time. Strictly adhering to the requirements in Appendix W Section 3.2.2 would not give the TCEQ sufficient time to propose an alternative model to AERMOD. If the EPA were to reject demonstration approaches using CAMx, it is probable that the TCEQ could not meet the EPA's proposed implementation timeline.

The EPA should establish data sharing and appeals procedures and EPA Regional Office review deadlines that provide the basis for states to plan and develop implementation plans.

The administrative requirements in Section IV.B are strong and specific for states but weak and vague for the EPA Regional Offices. Since the states are required to submit protocols by a certain date, the EPA Regional Offices should be required to submit their written approvals or disapprovals (via deficiency letters) to the states within 60 days of submittal of each protocol and no later than March 15, 2016. The words, "...as expeditiously as practicable..." for the EPA's action on the protocols are not adequate. This change in the wording and action is necessary so that states can appropriately plan and have sufficient time to complete the next phases.

The TCEQ also suggests an appeals process be part of this rule package, for the sake of national consistency. In order to help provide transparency and consistency for states, the EPA Regional Office should provide all submitted protocols and the approval status of each on an easily accessible agency webpage.

F. Technical Considerations

The most recent annual emissions are the only reasonable metric for determining which sources are subject to modeling or monitoring.

The February 2012 EPA SO_2 Strategy Paper states that, "modeling guidelines would make clear that for designation purposes, actual emissions from recent years could be used to characterize current air quality, as this more closely matches the actual air quality that would be

[14] 79 FR 27451. "Environmental group representatives ... indicated that the cost of modeling assessments for certain source areas could be done for less than $10,000."

[15] Modeling costs are based on the lower end of the AERMOD cost estimates in the EPA June 23, 2011, MOU among USDA, USDOE, and USEPA Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions Through the National Environmental Policy Act Process.

characterized by a monitoring network." The TCEQ agrees with the EPA that it is appropriate to use current actual emissions, as opposed to allowable emissions, for comparison to the proposed emissions thresholds and for modeling inputs to characterize air quality.

The TCEQ suggests it is reasonable to use the same receptor placement policy for both monitor placement and compliance modeling demonstrations.
The EPA notes there are three air quality modeling inputs used for designations modeling that would differ from the permit and implementation plan modeling requirements set forth in Appendix W of 40 CFR part 51.[16] However, page 4 of the SO_2 NAAQS Designations Modeling Technical Assistance Document (TAD) notes four air quality modeling inputs that would differ.[17] The additional difference noted in the Modeling TAD is related to placement of receptors only in areas where it is feasible to place a monitor (designation) vs. all ambient air locations.

The TCEQ believes that it is reasonable to follow a consistent receptor placement policy for monitor siting and compliance modeling demonstrations as applicable. For example, if it would be difficult to site a monitor at an ambient air location on a highway or waterbody, then it would be unlikely that the general public would be adversely affected at the same location.

The usual SIP maintenance schedule should be sufficient for ongoing verification of attainment.
Section V. B of the preamble allows three options for ongoing verification of attainment if modeling is used for attainment demonstrations. The TCEQ considers all three of these options to be too burdensome for Texas. The TCEQ offers that the New Source Review program, as operated in Texas with site-specific review of new and majorly modified sources, provides continued adequate assurance of maintenance of the standard, especially when there are no designated nonattainment areas for the standard.

G. Governor's Attainment Designation and TAD Comments

As noted in correspondence from Texas Governor Rick Perry to the then EPA Region 6 Administrator Al Armendariz (April 20, 2012) and to the EPA Region 6 Administrator Ron Curry (April 5, 2013), the EPA should designate 10 Texas counties (Jefferson, Gregg, Ellis, Harris, Galveston, Nueces, Kaufman, El Paso, Dallas, and McLennan) attainment for the 2010 SO_2 NAAQS based on monitored data. The EPA should designate all the remaining counties in Texas unclassifiable.
As evidence that the 10 counties noted above should be identified as attainment, the TCEQ offers the following design values table. As shown below, the data demonstrate that design values continue to trend downward.

[16] 79 FR 27463.
[17] Page 4, SO2 NAAQS Designations Modeling Technical Assistance Document, Draft December 2013; "...These differences include: Placement of receptors only in areas where it is feasible to place a monitor (designations) vs. all ambient air locations..."

2011 through 2013 SO_2 Design Values In Texas Counties In Parts Per Billion(ppb)			
County	2011 SO_2 Design Value (ppb)	2012 SO_2 Design Value (ppb)	2013* SO_2 Design Value (ppb)
Dallas		7	6
El Paso	11	10	7
Ellis	15	14	14
Galveston	41	26	16
Gregg	61	56	52
Harris	42	38	31
Jefferson	68	51	29
Kaufman	14	13	13
McLennan	6	6	6
Navarro		40	38
Nueces	27	25	12

* 2013 Design Values are as of 6/9/2014 and subject to change.
All data was obtained from EPA's AQS database.
Only design values considered complete were used in this table.

The EPA should revise this rule and associated guidance in response to comments that the TCEQ has previously submitted regarding the modeling and monitoring TADs.

The TCEQ has attached copies of our previously submitted modeling and monitoring TAD comments, both submitted on July 18, 2013. The aspects of those comments that are applicable to this proposal but not previously discussed in this document are summarized below.

The EPA should reconsider its adherence to modeling approaches that may not be effective for designation purposes. Much of the TAD guidance is identical to permit modeling approaches, which the EPA acknowledges can be conservative. In addition, the EPA prescribed model limits the amount and type of data that can be used to characterize current air quality.

The EPA should clarify how states and other parties should interpret "official guidance" in relation to the modeling process. The TCEQ understands that the guidance in the TAD is not binding. Only rulemaking allows for effective, consistent notice and comment. Where a rule is silent or uses wording such as "suggests" or "should," the EPA should remain open to comparable technically justified approaches.

The EPA should not require modeling of sources of emissions that are less than the thresholds adopted by rule. In the TAD, the EPA describes a complicated, resource-intensive, multi-step process to model sources below the emissions thresholds that could cause or contribute to a NAAQS violation. The TCEQ does not agree with this approach. Contributions from nonmodeled (less than threshold emissions) sources should be included in the background concentrations and not explicitly modeled using AERMOD. Alternatively, a grid model, like CAMx, could be used to estimate background concentrations and provide concentration

gradients. Leaving these topics for negotiation with the Regional Office will lead to inconsistent application of guidance among states.

The TCEQ disagrees with EPA's fence-line approach. In its TAD, the EPA applies a mix of SIP demonstration guidance and permit application guidance. The modeling TAD should follow the receptor placement of the monitoring TAD.

The TCEQ suggests that the EPA specifically allow modeled background concentration using a regional scale model such as CAMx to estimate hourly (if necessary) background concentrations when determining existing air quality.

The EPA has failed to address the need for modeling protocols prior to modeling for monitor placement, assuming that the final rule will still prefer modeling to properly site monitors. Time for this tedious and somewhat complex analysis, as well as the modeling for monitor siting has not been allotted in the EPA's proposed timeline.

The TAD does not address the cost of operating and maintaining the expected number of additional SO_2 monitors needed to characterize ambient air quality near sources. The cost to implement monitoring at a single site per source is approximately $85,000 for the initial deployment and an additional $45,000 annually. If, under the EPA's proposed Option 1, the TCEQ were to deploy a single new monitor at 31 sources based on 2012 emissions, this would cost approximately $2.6 million for initial deployment and $1.4 million annually. Texas does not have the resources to absorb this additional cost.

The EPA should provide clear guidance with examples of the determination of the number of monitors to be sited for each source. This issue should not be left up to negotiations with the Regional Office. A procedure should be outlined that will provide consistency for all regional offices and states.

The Pb NAAQS rule requires at least one maximum-concentration, source-oriented ambient air quality monitor for each source or cluster of sources with actual annual emissions equal to or larger than 0.5 – 1.0 tpy, depending on source type (75 FR 81126, 81138). In practice, this monitoring requirement has resulted in one appropriately placed, maximum concentration, source-oriented monitor for sources without ambient monitoring data or other history suggesting that nonattainment exists. If the EPA expects this to be the practice for SO_2, then it should state that a single monitor will be sufficient, unless evidence is presented otherwise.

As with Pb, the TCEQ urges the EPA to place emphasis on emissions thresholds for determining whether or not each existing SO_2 source appears to have the potential to cause nonattainment where actual public exposure in ambient air is likely to occur.

The TCEQ also urges the EPA to modify the guidance to recognize the type of public exposure the primary SO_2 NAAQS is designed to prevent: exposure of an exercising asthmatic to short-duration SO_2 concentrations that can induce mild, reversible changes in respiratory function. Again, the TCEQ urges the EPA to allow that the maximum concentration, source-oriented SO_2 monitor, sited to determine attainment or nonattainment of the primary SO_2 NAAQS, be placed as close as feasible to the predicted maximum concentration location at which actual public exposure (of the type this SO_2 NAAQS is designed to prevent) is reasonably likely to occur.