



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 8, 2011

Holly Brightwell (MC 206)
Air Quality Division
Chief Engineer's Office
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Dear Ms. Brightwell:

RE: Collin County Attainment Demonstration for the 2008 Lead NAAQS (Project No. 2011-001-SIP-NR) and Agreed Order with Exide Technologies (Project No. 2011-024-MIS-NR)

The purpose of this letter is to comment on the State Implementation Plan (SIP) revision proposed by the Texas Commission on Environmental Quality for the Collin County Attainment Demonstration for the 2008 Lead NAAQS nonattainment area and the proposed Agreed Order with Exide Technologies. The Clean Air Act and subsequent federal regulations require Texas to submit a State plan to the Environmental Protection Agency that demonstrates achievement of the 2008 lead National Ambient Air Quality Standards (NAAQS) as expeditiously as practicable, but no later than December 31, 2015. We appreciate the efforts of the State in developing a plan for this area.

To meet the 2008 lead NAAQS, the State has proposed an agreed order to implement emission reductions at the Exide facility. This agreed order would become part of the SIP and thus federally enforceable. The proposed revision to the SIP includes a technical demonstration based on AERMOD modeling and other evidence, to attempt to demonstrate that the Collin County area will attain the air quality standard on time.

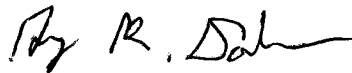
The measures in the proposed agreed order will result in a significant amount of reductions from the installation of controls, construction of building enclosures, and the implementation of other fugitive emission mitigation techniques.

Unfortunately, the SIP as currently constructed is not approvable. The SIP must include enforceable limitations to achieve the emission projections in the model. For the point source emissions, the State has projected emission rates based on stack tests. These emission rates are not backed up with enforceable limits. For lead, hourly emission limits should be established because the only practical way to enforce the limits is through stack testing. The proposal indicates that limits will be included in a permit, but the permit has not been included as part of the SIP revision. The State should include the hourly emission limits in the agreed order that implement the hourly rates included in the model.

Enclosed are detailed comments on the proposed SIP revision. I would note that EPA rules for implementation of modeling indicate that a modeling protocol should be established in situations such as this. I believe if a modeling protocol had been established, these issues may have surfaced and been addressed prior to proposal.

We look forward to working with TCEQ to fully address and resolve our concerns and agree to a protocol for finalizing the SIP attainment demonstration modeling. Please contact Carl Young of at 214-665-6645 or Erik Snyder at 214-665-7305 if you have any questions.

Sincerely yours,



Guy R. Donaldson
Chief, Air Planning Section (6PD-L)

Enclosure

cc: Mr. David Brymer
Texas Commission on Environmental Quality

Enclosure – Detailed Comments

The modeling analyses (Base Case and Future Case), in many cases, do not follow EPA regulations and guidelines for attainment demonstration SIP modeling. TCEQ did not follow the provisions of 40 CFR 51.112 and 40 CFR Part 51 Appendix W, Guideline on Air Quality Models (GAQM). In particular, TCEQ did not conduct modeling in accordance with a modeling protocol agreed to between EPA and TCEQ. Despite EPA's requests for a protocol prior to TCEQ conducting the modeling for the attainment demonstration SIP, no protocol was shared with EPA prior to TCEQ finalizing the modeling included in the proposal. EPA did have a number of conference calls with TCEQ and provided guidance on modeling for this proposal, but TCEQ did not follow many of EPA's recommendations to meet the requirements of 40 CFR 51.112 and 40 CFR Part 51 Appendix W, GAQM .

40 CFR Part 51 Appendix W, GAQM, Section 5.2.5 states¹:

5.2.5 Models for Lead

a. For major lead point sources, such as smelters, which contribute fugitive emissions and for which deposition is important, professional judgement should be used, and there should be coordination with the appropriate reviewing authority (paragraph 3.0(b))...

GAQM Section 3.0(b) states:

b. In this guidance, when approval is required for a particular modeling technique or analytical procedure, we often refer to the “appropriate reviewing authority”. In some EPA regions, authority for NSR and PSD permitting and related activities has been delegated to State and even local agencies. In these cases, such agencies are “representatives” of the respective regions. Even in these circumstances, the Regional Office retains the ultimate authority in decisions and approvals.

GAQM Section 10.2.1 states:

10.2.1 Analysis Requirements

a. Every effort should be made by the Regional Office to meet with all parties involved in either a SIP revision or a PSD permit application prior to the start of any work on such a project. During this meeting, a protocol should be established between the preparing and reviewing parties to define the procedures to be followed, the data to be collected, the model to be used, and the analysis of the source and concentration data. ... The protocol should be written and agreed upon by the parties concerned, although a formal legal document is not intended. Changes in such a protocol are often required as the data collection and analysis progresses. However, the protocol establishes a common understanding of the requirements.

¹ In the following citations, underlining has been added for emphasis.

It is clear that in the case of a SIP revision that a protocol should be established, especially when Exide and TCEQ wish to deviate from the GAQM procedures as TCEQ has done in several cases in their modeling for this proposal. A protocol is considered to be a living document, but decisions to change the document should be approved by the preparing and reviewing authorities. EPA has noted a number of issues that raise significant concerns about the approvability of TCEQ's proposal and proposed Agreed Order.

The largest concern is TCEQ's deviation from the appropriate characterization of emission rates from sources. TCEQ did not follow the procedures in Section 8 of GAQM, including 8.1.2.i., which states:

... When using a refined model, sources should be modeled sequentially with these loads for every hour of the year. To evaluate SIPs for compliance with quarterly and annual standards, emission input data shown in Table 8-1 should again be used. Emissions from area sources should generally be based on annual average conditions. ...

Below is the excerpt from the cited Table 8-1:

TABLE 8-1.—MODEL EMISSION INPUT DATA FOR POINT SOURCES¹

Averaging time	Emission limit (#MMBtu) ²	×	Operating level (MMBtu/hr) ²	×	Operating factor (e.g., hr/yr, hr/day)
Stationary Point Source(s) Subject to SIP Emission Limit(s) Evaluation for Compliance with Ambient Standards (Including Area-wide Demonstrations)					
Annual & quarterly	Maximum allowable emission limit or federally enforceable permit limit.		Actual or design capacity (whichever is greater), or federally enforceable permit condition.		Actual operating factor averaged over most recent 2 years. ³

¹The model input data requirements shown on this table apply to stationary source control strategies for STATE IMPLEMENTATION PLANS. For purposes of emissions trading, new source review, or prevention of significant deterioration, other model input criteria may apply. Refer to the policy and guidance for these programs to establish the input data.

²Terminology applicable to fuel burning sources; analogous terminology (e.g., #/throughput) may be used for other types of sources.

TCEQ did not model future emission rates based on Table 8-1. There are three elements listed that are used to yield a model emission rate value, the emission limit and operating level are both a maximum short term limit on the rate of maximum lb/throughput and maximum throughput/hour on a maximum hourly basis and not an annualized average value. EPA addressed questions on how to model point and area sources during conference calls with TCEQ and most recently in the 2008 Lead (Pb) NAAQS Implementation Questions and Answers memorandum, which reiterated the procedures in GAQM Section 8. In the proposed plan, TCEQ did not follow EPA's recommendations or provide adequate documentation of how the modeled emission rates relate to emission rates that would be developed using GAQM Section 8. The emission rates modeled must be included in the SIP as enforceable limits to be protective of the demonstration of attainment. For point sources, stack testing (average of three 1-hour tests) must demonstrate compliance with the modeled emission rates. Therefore, hourly emission limits should be established. For fugitive/area source emissions practically enforceable limits are also required to demonstrate compliance with the modeled values.

Detailed Comments Related to Modeling Approach

1. TCEQ did not use the AERSURFACE program to calculate the Bowen ratio, surface roughness length, and noontime albedo so that more recent USGS NLCD data (2001 vs.

1992) could be used. Instead, to determine the Bowen ratio and surface roughness length for generating meteorological data for use with AERMOD, TCEQ used methodology proposed by the Alaska Department of Environmental Conservation (ADEC) described in *ADEC Guidance re AERMET Geometric Means, How to Calculate the Geometric Mean Bowen Ratio and the Inverse-Distance Weighted Geometric Mean Surface Roughness Length in Alaska*. TCEQ calculated the noontime albedo value using methodology specified by the AERSURFACE User's Guide and 2001 NLCD data. The use of more recent land coverage data for determining these parameters was preferred by TCEQ because of the large amount of growth in the area surrounding Exide's Frisco facility since 1992. While we agree that use of more recent NLCD is appropriate due to the growth in the area, further information is needed to allow a review of TCEQ's approach and to confirm that the incorporation of more recent NLCD was completed in an acceptable manner. Please provide additional detailed documentation supporting the determination of the Bowen ratio, surface roughness length, and albedo values used to generate the AERMOD meteorological input files.

2. As part of the proposed Agreed Order, Exide would be required to install full enclosures under negative pressure for several fugitive emission sources (EPNs 10, 35, 36, 44, 52, 53, and 999). The emissions captured via the enclosure system would be routed to proposed baghouses. As part of the Future Case modeling analysis, TCEQ assumed that the installation of the full enclosure with negative pressure will result in 100% capture of the fugitive emissions that will be routed to a baghouse. Therefore, the Future Case modeling analysis does not include any modeled fugitive emissions from these sources. While EPA has accepted in principle a 100% capture of fugitive emissions, we have stipulated stringent requirements in order to utilize 100% capture. In our VOC rules, we have allowed 100% capture, but with requirements on maximum size of leaks of less than 15 cm², limits on minimum velocities on entrance/exits, limits on the size of egress points, etc. If the areas where 100% capture was assumed is not designed appropriately, a very small amount of fugitives could result in the area not reaching attainment based on TCEQ's modeling analyses. The final SIP should include the detailed plan for how the source would be able to achieve 100% capture efficiency.
3. The modeling assumed a background concentration of zero (0) for lead. Based on EPA's documentation for the 2008 lead NAAQS, we expect the background level to be very low, but not non-existent. Therefore TCEQ should work with EPA to determine the representative background data to be added to the modeled impacts.
4. The modeled source elevations included in both the Base Year and Future Case modeling analyses differ from the modeled source elevations included in the modeling conducted by TCEQ to inform the Collin County lead nonattainment boundary. Please document what

caused the changes in elevations for the modeled sources and revise the attainment modeling as necessary.

5. It is not clear from the proposed SIP documentation why stack/release heights and diameters for some sources included in Base Year and Future Case modeling analyses (EPNs 23, 38, 39, 41, and 48) differ from the stack heights and diameters included in the modeling analysis conducted by TCEQ to inform the Collin County lead nonattainment boundary. Please provide the basis of the changes made to stack/release heights and diameters. Modeling should be done in accordance with GAQM 8.1.2.a, b, and c.
6. TCEQ indicated that model stack parameters (stack temperature and stack exit velocity) for the Base Year and Future Case modeling analyses were based on stack test data for Exide's Frisco facility. It is not clear from the proposed SIP documentation if these stack test based stack parameters represent the worst case or average stack temperatures and exit velocities. Please provide the basis of the modeled stack temperatures and exit velocities. Modeling should be done in accordance with GAQM 8.1.2.a, b, and c.
7. TCEQ's modeling did not have an adequate grid resolution. Receptors should be placed with 25-meter spacing on the fenceline, and 50-meter spacing for receptors in the nonattainment area and 100-meter spacing beyond the nonattainment boundary. Previous modeling conducted by TCEQ used 50-meter spacing for receptors in helping to set the nonattainment boundary. TCEQ's own modeling guidance states: "It is appropriate to use a smaller receptor spacing located close to the property line to identify concentrations caused by short stacks or fugitive sources."
8. Please provide the raw meteorological input data that was processed with AERMET to generate the AERMOD meteorological input files.

Detailed Comments Related to Emission Rates and Other Issues

9. The proposed Agreed Order requires that Exide apply for and obtain the necessary authorizations to implement the control strategies listed in paragraphs 15 to 27 of the Order. Since TCEQ is relying on these emission rates to demonstrate future compliance with the lead NAAQS, the modeled emission rates as listed below should be included in the SIP revision and Agreed Order as enforceable emission limits.

Source ID	Emission Rate (lb/hr)
11	0.0021
12	0.0043
13	0.0012
14	0.0055
15	0.0025
16	0.0014
17	0.0017
18	0.0275
21	0.1743
22	0.0086
23	0.0006
24	0.0017
25	0.0010
26	0.0004
37	0.0450
38	0.1005
39	0.0513
45	0.0688
48	0.0037
10A	0.0103
35A	0.0238
48A	0.0047
27	0.0006
28	0.0013
ROAD	0.0017

In addition, it is not clear if the changes to stack parameters (stack temperature, exit velocity, height, and diameter) used in the Future Case modeling analysis will be included as updated permit representations.

10. TCEQ indicated that in the Base Case modeling analysis, model ID 10 represented the worst case stack and combined emissions from EPNs 10 and 35. However, the modeled emission rate for model ID 10 in the Base Case modeling was the same as the modeled emission rate for this source included in the modeling analysis conducted by TCEQ to inform the lead nonattainment boundary, which included both 10 and 35 as separate modeled sources.
11. TCEQ indicated that in the Base Case modeling analysis, model ID 41 represented the worst case stack and combined emissions from EPNs 41, 42, and 43. However, the modeled emission rate for model ID 41 in the Base Case modeling was the same as the

modeled emission rate for this source included in the modeling analysis conducted by TCEQ to inform the lead nonattainment boundary, which included 41, 42, and 43 as separate modeled sources.

12. TCEQ used the SCREEN3 model to estimate the amount of emissions from sources previously not accounted for based on initial Base Case modeling. SCREEN3 is no longer the EPA's preferred screening modeling. Furthermore, use of a screening model to back estimate the amount of emissions that are due to unknown sources should be discussed in a modeling protocol as there are potentially other reasons the model is not matching up with the monitored data. EPA would like to know what other potential sources of model discrepancies were considered.
13. TCEQ modeled all of Exide's property as not being ambient air and defined ambient air as property the general public does not have access. We note that not all of Exide's property is properly fenced and patrolled to limit access in such a manner as to prohibit public exposure. Specifically we noted on July 28, 2011 the property on the southern side is not fenced and monitored for trespassing. The land modeled as not being ambient extends to the edge of the access road for the north bound Dallas Tollway. No fencing is present for the part that is adjacent to the access road and the only fence that seems to exist is located further back on the property and appears to be a damaged barbed wire fence that may not be posted or limit access. TCEQ should investigate and discuss with Exide on how they will appropriately fence and monitor all property boundaries such that it can be treated as non-ambient air or include receptors for this area in the attainment modeling. Exide should provide a plan on how this will be achieved that could be added to the SIP.
14. In past communications between EPA and TCEQ, EPA has indicated that we need a full description of each fugitive emissions source including process location(s) on a facility plot plan, and complete analysis of how the amount of capture/fugitive emissions is calculated. This full level of detail such that each part of the estimate is documented and available for review was not included in the proposed plan. This is a critical piece of information for the plan, since fugitive emissions are a significant contributor to the off-property values.