

February 6, 2008

Via E-mail: tox@tceq.state.tx.us and Via Federal Express

Toxicology Section, MC 168
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, TX 78753

Attn: Dr. Michael Honeycutt

Re: Public Comment on Proposed Lowering of Styrene ESL on behalf of the
American Composites Manufacturers Association

Dear Dr. Honeycutt:

Thank you for this opportunity to submit public comments on behalf of our client, the American Composites Manufacturers Association, including its Texas member companies (ACMA)¹ concerning the Toxicology and Risk Assessment (TARA) group's January 17, 2008 proposal to lower the Effects Screening Level (ESL) for styrene (Styrene ESL) from 110 ug/m³ to 73 ug/m³.²

¹ The American Composites Manufacturers Association is the national trade group for the composites industry. Its members include small and medium-sized companies that use combinations of thermoset plastic resin, glass fiber and other materials to make underground gasoline storage tanks and pollution control equipment, wind turbine blades, modular tub/shower units and bathroom vanities, ballistic panels and armor for military vehicles, fiberglass boats, automotive, truck and motor home components, window lineal and ladder rail, bridge decks and concrete reinforcing bars, playground equipment, components for commercial and military aircraft, signs and building fascia, and thousands of other composites products, as well as the suppliers of raw material to this industry. The more than 150 composites manufacturing companies in Texas directly employ over 7,500 workers and have combined annual sales revenue of more than \$950 million.

² In 2007, ACMA informally submitted materials to TARA on this subject. AMCA is now formally submitting those materials for the record in this proceeding. The content of those materials is not reiterated in detail in this letter, but nonetheless should be considered public comments. The documents provided in Attachment 1 are: (A) *Composites Manufacturing Plants subject to the TCEQ Styrene ESL Cannot Comply with the ESL Levels through the use of Capture and Control*, ACMA, February 7, 2007; (B) *TCEQ ESL Policy Adversely Affects Texas' Economy*, ACMA, February 7, 2007; (C) May 29, 2007 letter from ACMA (John Schweitzer) to TCEQ (Michael Honeycutt) with Attachments: (1) *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007, (2) *Styrene Toxicology Summary*, by the Styrene Information and Research Center (SIRC), and (3) *Review of Styrene Odor Threshold Values in Air*, Pamela Dalton, Ph.D. and Lawrence Jacquot, Ph.D., Monell Chemical Senses Center, May 22, 2007 (hereinafter Dalton and Jacquot); (D) May 28, 2007 ACMA Public Comments (Howard L. Gilberg) Concerning Proposed Repeal of Permit by Rule 30 TAC 106.392 and Proposal to Adopt Standard Permit for Thermoset Resin Facilities with Attachments: (1) TCEQ Odor Complaint Investigation Procedures, January 3, 2005, (2) *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007, (3) May 29, 2007 letter from ACMA (John Schweitzer) to TCEQ (Michael Honeycutt) with Attachments cited in Item C. of this footnote, (4) *Air Permit Technical Guidance for Coatings Sources: Fiber Reinforced Plastics and Cultured Marble Operations*, TCEQ, October 2000 (collectively hereinafter ACMA Public Comments on Proposed Standard Permit); (E) ACMA (John Schweitzer) letter to TCEQ (Becky Southard), December 7, 2006, and (F) *The Composites Industry in Texas*, ACMA, July 2005. It is our intention that the content of all of the attached documents are deemed public comments as well as the content of this letter. We appreciate TARA's intention to respond publicly and in writing to each of the comments submitted on TARA's Styrene ESL proposal, including these comments.

Attorneys and Counselors

750 N. ST. PAUL STREET, SUITE 200
DALLAS, TEXAS 75201
TEL - 214.692.0009
FAX - 214.692.6610

www.guidaslavichflores.com

Our comments are provided in detail below, but in summary:

- TCEQ recently proposed to *reduce* the ESL (community exposure limit used in certain air emission permit application reviews) for styrene from 110 ug/m³ to 73 ug/m³. Styrene is an irreplaceable chemical used in the composites industry, which employs many Texans and makes many important products.
- TCEQ's Styrene ESL policy is designed to prevent styrene odor complaints, of which there have been very few. Texans are clearly not at risk for health effects from styrene exposure.
- Since early 2007, ACMA has been working with TCEQ to *increase* the Styrene ESL.
 - The majority of composites plants could not meet the current Styrene ESL if so required, yet the industry has a very low incidence of reported odor problems.
 - TCEQ's current policy has stagnated the industry in Texas, and has forced costly investment by companies to solve non-existent odor problems.
 - No other state employs a similar approach.
- TCEQ is under no legal requirement to reduce the Styrene ESL, and has provided only the most meager and non-scientific support for the proposed change.
- The few industry styrene odor problems are best solved through local enforcement action.
- ACMA's recommended Styrene ESL of 1200 ug/m³:
 - is scientifically credible and defensible.
 - conservatively protects against odor problems.
 - is achievable by industry using affordable and proven practices.
 - amply protects public health.
 - supports employment and economic development.

Our detailed comments follow.

1. **The Current Styrene ESL of 110 ug/m³ is Unworkable.**

A. It Has Been Demonstrated That the Current Styrene ESL of 110 ug/m³ Cannot Be Met By Virtually Any Texas Composites Industry Manufacturing Facility.

1. TCEQ Modeling Results.

In March and April 2006, the TCEQ modeling staff, at the request of the TCEQ's Standard Permit development staff and in coordination with the TCEQ's toxicology staff,

essentially documented that no composites (thermoset resin) facilities can meet the current Styrene ESL of 110 ug/m³.³

TCEQ's stated goal in developing this Standard Permit was to allow only those composites facilities that could meet the current Styrene ESL to avoid the NSR permitting process. To achieve this goal, the agency created a matrix found in Table 1 of the proposed Standard Permit. Table 1 provides a numerical peak building height and corresponding maximum styrene (and related compounds) emissions rate for those facilities that the agency concluded will meet the current Styrene ESL. By default, TCEQ defined those composites facilities that will not meet the current Styrene ESL: those with peak building heights and corresponding maximum styrene (and related compounds) emissions rates not falling within the values in Table 1.

In fact, there is virtually no composite facility in Texas that meets the values in Table 1, and therefore, using TCEQ's approach, there is virtually no composite facility in Texas that meets the current Styrene ESL. This is consistent with our understanding from the field. Just as important, potential new composites facilities in Texas would be constructed and operated in much the same manner as existing facilities. They too would not meet the Table 1 values, and again according to TCEQ's approach, none of these facilities would meet the current Styrene ESL. ACMA filed public comments to this effect in response to the proposed Standard Permit in May 2007.⁴

2. ACMA Modeling.

The foregoing TCEQ conclusions were confirmed by modeling on typical Texas composites facilities performed as part of an ESL feasibility study conducted for ACMA by Engineering Environmental Consulting Services (EECS).⁵

³ TCEQ Memorandum from Lori Wilson and Beth Echels, Emissions Banking/Modeling Team, to Eddie Mack, Combustion/Coatings Team, March 13, 2006; *Request for Comments to Toxicology & Risk Assessment Section*, April 4, 2006. Dr. Lee of the TARA staff responded and certified the toxicology response. The documents cited in this footnote are provided in Attachment 2.

⁴ See ACMA Public Comments on Proposed Standard Permit, *supra* at note 2.

⁵ *Feasibility of Achieving the TCEQ Short-term ESL Styrene Limit using Atmospheric Dispersion or Add-on Controls for Small and Medium Composite Facilities*, Robert A. Haberlein, Ph.D., EECS, February 4, 2008, p. 9-15, provided in Attachment 3 and hereinafter identified as *Haberlein Study*.

- B. TCEQ Has Overlooked the Unaffordability of Air Pollution Control Equipment in Setting the Current Styrene ESL.
1. The Real, Unaffordable Cost of Satisfying the Styrene ESL.

If TCEQ were to require composites facilities to meet the current or a proposed lower Styrene ESL as part of the permitting process, there is one way, and one way only, for all but the very small minority of composites manufacturers to assure compliance with that requirement: the installation of equipment to capture and then oxidize virtually all of the styrene emitted during the fabrication and curing of composite products. The operating and capital costs of such capture and oxidation control are far beyond anything the large majority of composites manufacturers can afford under any imaginable scenario. Lowering the Styrene ESL, as has been proposed, merely would extend the prospect that even smaller composites manufacturers would not be able to comply with this ESL, and as a result, would be forced to install capture and oxidation control equipment to satisfy the lower Styrene ESL.

The economic consequences of TARA's current and proposed Styrene ESL, as applied or threatened by the TCEQ Permitting Division, create a "virtual ban" on expansions of existing composites facilities and construction of new facilities in Texas. If existing facilities were literally required to meet the current (or the proposed new) Styrene ESL, Texas would find most of its composites facilities forced to move out of state or shut down, and the Texans working at those facilities would lose their jobs.

The *Haberlein Study* confirms this conclusion. According to the study, the annual operating costs associated with the most cost efficient and effective capture and oxidation control equipment for a small and medium composites manufacturing plant are, in today's dollars, approximately \$443,000 and \$1.37 million, respectively.⁶ Energy costs are expected to rise precipitously, if unpredictably, over at least the useful life of this equipment, which will increase these already unaffordable, extraordinary annual operating costs. Very few Texas composites manufacturers earn this much money in a single year, particularly in the current economic recession, and they are unlikely to do so in the future.

The capital costs associated with purchase and installation of this capture and oxidation control equipment at a small and medium composites manufacturer are approximately \$872,000 and \$1.74 million, respectively.⁷ The cost for all of the production equipment at many composites manufacturing plants in Texas is less than these amounts.

⁶ *Id.* at 23-30.

⁷ *Id.*

Financing is an important economic limitation as well. These small and medium composites businesses have dollar-limited credit facilities. In fact, very few, if any, could obtain financing to purchase this air pollution control equipment, even if the annual operating costs were manageable in some financial sense. Financing for the capital cost might be available if the business had adequate current cash flow to manage the operating costs, but few composites companies, if any, do. Margins and cash flow management requirements driven by the market leave composite plants with no real fiscal options, if faced with compliance with the current or a proposed lower ESL.

Finally, financing the capital cost of air pollution control equipment will be deducted from the business' total available credit. The remaining limited credit facility is not sufficient to expand the business to provide the cash flow necessary to pay the annual operating cost associated with the air pollution abatement equipment.

Under these circumstances, it is inexplicable to ACMA why a business would purchase pollution abatement equipment with costs that approach or exceed the cost to build its entire manufacturing operations when it has the option to close its business in Texas and move it to another jurisdiction without the threat of a capture and oxidation control requirement.

Note that the composites industry *continues to be* willing to invest in site-appropriate ventilation control, as discussed below, which while typically incapable of meeting the current Styrene ESL, *is* effective in preventing odor problems.

2. US EPA's MACT-Related Decision on the Affordability of Air Pollution Control Equipment Is an Independent, Reliable Resource That Should Guide and Persuade TCEQ in Setting the Styrene ESL.

In 2000, as EPA was developing the NESHAP for composites manufacturing (later promulgated as 40 CFR 63 Subpart WWWW), the agency conducted an extensive review of the affordability of air pollution controls and oxidation equipment. In its final NESHAP, EPA limited requirements for air pollution control and oxidation equipment to those plants where the same would be reasonably affordable, i.e., new plants making small parts with total HAP emissions of 100 tons per year or more.⁸

One of the studies submitted to EPA for its analysis was prepared by the consulting firm Environomics, commissioned by ACMA.⁹ This report considered the affordability of

⁸ACMA is unclear whether an existing continuous lamination/casting plant is in operation in Texas. Should one or more be in operation, the MACT standards for the composites industry, 40 CFR 63 Subpart WWWW, would require those operations to install air pollution control and oxidation equipment, irrespective of their level of styrene emissions.

⁹*Affordability of Capture and Control, An Evaluation of the Existing Facilities Subject to EPA's Proposed Requirement*, Environomics, 2000, provided in Attachment 4.

EPA's draft proposed MACT capture and oxidation control requirement for composite manufacturing operations.

For ten representative plants for which detailed financial and operating information was available, Environomics carefully studied three measures of control affordability: Total Annual Cost as a Percent of Revenue; Total Annual Cost as a Multiple of Profit; and Total Capital Investment Cost as a Multiple of Historical Capital Investment Levels. Environomics found that "6 to 8 or more" of the ten representative plants were more likely to close than pay the costs of capture and oxidation control, and that controls posed at least an "affordability concern" for nine of the ten plants. Finally, Environomics determined that these conclusions were also very likely to apply to 29 out of a larger group of 34 composites plants for which less financial and operating data were available.¹⁰ The composites plants which were the subject of the Environomics affordability assessment were very representative of typical composites industry plants in Texas.

3. TCEQ's Economic Judgment in its BACT Coatings Guidance Should be Applied to its Setting of the Styrene ESL.

Styrene emissions from almost all composites plants in Texas do not exceed 80 tons per year. TCEQ's Coatings Section policy states that coatings sources (including composites plants) with VOC emissions of less than 80 tons per year are not required to undergo BACT analysis. The Coatings Section policy rightly presumes that it is unaffordable for coatings sources with VOC emissions of less than 80 annual tons to install and operate oxidation control equipment. TCEQ should acknowledge the economic judgment in its own guidance and adopt it in setting the Styrene ESL.

¹⁰ TCEQ's routine air permit processing procedures include a Best Available Control Technology (BACT) analysis. A BACT analysis includes a calculation of the cost of pollution control equipment and a comparison to the amount of a specific pollutant abated by that equipment. The resulting fraction is denominated in cost in dollars of pollution control equipment per ton of pollutant removed. This figure is then compared to agency guidelines to determine whether the pollution control equipment under consideration is affordable and should be required in the issued permit. The *Haberlein Study*, *supra* note 5, at 26, concluded that the cost per ton of styrene emissions abated, using the most efficient and effective control and oxidation equipment is \$18,656 for a small composites manufacturing plant, and \$17,998 for a medium composites manufacturing plant. *Id.* at 30. These costs are well in excess of that which would trigger the imposition of air pollution control equipment requirements based on a BACT analysis.

While the conclusions of the *Haberlein Study* support ACMA's position concerning the economic unreasonableness of air pollution control equipment in the composites industry, ACMA's superseding position is that the BACT analysis is not the correct perspective on the situation because the large majority of composites facilities in Texas are unable to either afford or to finance either the capital costs or the operating costs, or both, most probably associated with the installation and operation of control and oxidation equipment.

- C. The Current Styrene ESL, Coupled with TCEQ Permitting Practices and the Discretion of the Permitting Staff to Require Air Pollution Control Equipment at Texas Composites Industry Plants, Has Stifled the Industry and Threatens to Contract the Industry in the Future.

1. TCEQ Permitting Decisions.

The Texas composites industry has experienced stagnation since 2000, even as the industry nationally has grown at a healthy pace. To ACMA's knowledge, there have been no new composites plants located in Texas, and no expansions to existing operations. An important, if not the primary reason for this situation is the current Styrene ESL and the TCEQ Permitting Division's reaction to new facilities that cannot satisfy that ESL.

The stagnation begins with actual permitting activities; specifically the agency's handling of the permit renewal process. The permit renewal process has not historically been a process in which the Permitting Division imposes or even considers imposing additional air pollution control requirements, unless the facility proposes changes to its operations or unless there have been confirmed public complaints or enforcement issues. ACMA understands that the renewal process for some composites facilities that meet none of these criteria has nevertheless been an opportunity for the Permitting Division in some cases to impose requirements for expensive taller stacks to increase dispersion, even though in the large majority of these cases the source has had no history of odor complaints. (ACMA understands that after installing these taller stacks in order to renew their permits, the sources still do not satisfy the styrene ESL, sometimes by a wide margin.)

The composites industry acknowledges and accepts that the Permitting Division has the discretion in certain well-defined circumstances to impose these requirements; in cases, for example, where there has been a history of odor complaints. If the Permitting Division is imposing costly air pollution control measures in the permit renewal context in the absence of odor complaints, however, it is a reasonable concern on ACMA members' part that TCEQ has the will to impose these or more costly controls in other, more common contexts as well.

If TCEQ's and ACMA's data is correct that most composites facilities in Texas can not meet the current Styrene ESL, each of these facilities is subject to the Permitting Division's discretion in certain circumstances to impose unaffordable air pollution control measures. Stagnation of the Texas industry has resulted from business' reaction to avoid those circumstances and ones like them. Business self-preservation drives these decisions.

Those circumstances are clearly present in the case of proposed new composites plants and proposed expansions to existing plants. The industry's concern is that in either case, permits may not be granted, unless the applicant agrees to install capture and oxidation control

equipment. The market response has taken two predictable paths. First, proposed new facilities simply do not submit applications: they locate in other states. This is discussed further below.

Second, existing facilities with thoughts of a production expansion reject those thoughts if they plan to stay in Texas. They do not apply for permit approvals, and some have closed their businesses and opened new, expanded facilities outside the state. These businesses realize that, if their current operations do not satisfy the current Styrene ESL (or twice that ESL in certain circumstances) as projected by TCEQ's modeling or otherwise, and that a production expansion is one of those circumstances in which the TCEQ permitting staff has the discretion to require unaffordable air pollution control equipment, filing a permit application creates an unacceptable level of risk, not only for the proposed expansion but to the unaltered existing business as well.

Stagnation has grown out of the individual business' reaction to TCEQ permitting actions and threatened possible actions. The threat of such action by the Permitting Division has been enough to drive these decisions. A lower ESL will tragically ensnare those few very small facilities that currently can satisfy the ESL with the same problem.

2. TARA's Role in Setting the Styrene ESL.

TARA's decision on the Styrene ESL clearly is at the heart of the matter. It is no response from TARA that the regulatory decision to impose or to not impose air pollution control and oxidation equipment requirements as part of a site-specific permit process ultimately rests with the TCEQ's permitting staff and is outside TARA's purview. TARA's Styrene ESL sets the stage for permitting decisions by increasing or decreasing the discretion of the TCEQ permitting staff.

While ACMA recognizes that the imposition of air pollution control equipment requirements is not an inevitable outcome, the reaction of the market makes it clear that lowering the ESL will create further fear and an erosion of confidence in the Texas regulatory climate for the composites industry. The converse is also true. Increasing the Styrene ESL to a level consistent with a scientific, protective approach that many of the composites industry can meet with good ventilation practices reduces that fear and encourages a positive business climate.

3. Texas is THE Issue.

If Texas' Styrene ESL and permitting process were essentially duplicated by other state permitting programs, ACMA would have little issue with the TCEQ. The situation would be addressed by ACMA as a national one. The problem for the Texas composites industry and the state of Texas is that this is a Texas issue, and only a Texas issue. The other 34 states surveyed by EECS either have no ESL-equivalent or an ESL-equivalent many times (as much as 200

times) higher than the current Texas ESL, and, maybe most critically, air permits for new and expanding composites facilities are readily attainable.¹¹

Possibly the best practical argument in favor of the development in Texas of a realistic Styrene ESL is that fact that 34 state's toxicology experts cannot be wrong when they rely on health-based data and set their ESL-equivalents accordingly. Texas is the only state in ACMA's 35 state survey that has an ESL-equivalent based on odor, with the possible exception of Arkansas whose ESL-equivalent is 13 times greater than the Texas ESL.¹² ACMA believes there is a reason for the other states' reliance on health-based data and a disregard, except in Texas, for odor-related information. Styrene-related health effects data is scientifically current and credible because it can and has been objectively determined and is statistically verified. Odor complaints and odor detection threshold-related information does not hold the same weight in the scientific community or with the 34 states choosing to regulate styrene on an ESL-like basis.

ACMA has been offered an alternative explanation by TARA for the use of odor data to set its ESL: the wording of the Texas Clean Air Act which admittedly requires the agency to protect public health and welfare. ACMA disagrees with this explanation on several levels. First, the clean air acts of the other 34 states in the EECS survey, almost without exception, require protection of public welfare as does Texas, yet those states do not condition issuance of air permits based on odor. Second, neither the Texas Clean Air Act nor regulations promulgated pursuant to that law define "public welfare" to include odor. TCEQ's predecessor agencies informally created this approach. It is outmoded, at least in the case of styrene.

Further, even if protection of public welfare in Texas has come to mean addressing odor problems, it does not require the elimination of odors as part of the air permitting process. The Enforcement Division is capable of addressing styrene odors should they be confirmed. In our view, "public welfare" is not limited to odor concerns. Achieving a balance between a low rate of nuisance odor problems and a healthy economic climate can be best achieved through the site-specific enforcement process. Public welfare also includes protection of Texans' jobs and Texas employers, and encouraging new employers and jobs to locate in Texas as part of a balance of public welfare concerns and opportunities. While ACMA acknowledges TARA's toxicological expertise, ACMA asks that TCEQ as an agency consider and find persuasive the numeric ESL-equivalent standards established by air pollution control agencies around the country.

¹¹ *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007, provided in Attachment 5. The survey data represent those states for which information on permitting policies was readily available, either through Internet searches or from the experience of industry consultants.

¹² Please refer to discussion on page 23 of these public comments.

4. TCEQ has Ample Reason to Fairly Promote and Not Discourage the Texas Composites Industry.

The Texas composites industry provides over 7,500 jobs to Texans and close to \$1 billion in annual revenue. It produces products important to Texas' programs and environmental goals. For example, wind turbine blades promote alternative energy, underground fiberglass tanks reduce subsurface soil and groundwater pollution and improve septic system performance, lighter, more durable and stronger bridge and road infrastructure products are supported and specified in increasing numbers by TxDOT, and many products are produced that support defense and homeland security programs.

It is in Texas' self interest to promote and not discourage expansion of these businesses and to attract new businesses to the state. The current TCEQ's Styrene ESL discourages economic development.

2. **Lowering the Styrene ESL is Unsupported and Unsupportable.**

The current ESL has played havoc with all but the smallest composites manufactures in Texas, as described in our first comment. Based on agency air dispersion modeling, their long term economic viability would be jeopardized if the TECQ Permitting Division were to require composites facilities to meet the current Styrene ESL. Lowering the Styrene ESL expands that jeopardy to include virtually all of the very small composites manufacturers that can meet the current ESL. In fact, given their size, and the capital and operating costs associated with capture and oxidation control equipment, these facilities may be in greater jeopardy.

A. The Number of Documented Styrene Odor Complaints is Meager; Their Elimination is Not Feasible Nor a Basis for Lowering the Styrene ESL.

TARA has taken the position that lowering the Styrene ESL is necessary and advisable because it will eliminate a presumably large number of styrene odor complaints. It is neither necessary nor advisable. According to the agency's website, Texas has experienced very few styrene odor complaints. Between 2003 and about the beginning of 2007, there were but two enforcement actions taken by the agency concerning confirmed nuisance styrene odor from a composites industry manufacturing facility. These enforcement actions are not indicative of a widespread trend of the type that might support broad agency action, like lowering the Styrene ESL.

The number of styrene-related nuisance odor enforcement actions increased to a paltry number in 2007 from two in the preceding four years. Coincidence or not, this increase occurred only after ACMA pointed out in this Styrene ESL process the general absence of enforcement actions in the past. As before, these activities related to a very small handful of composites industry manufacturing facilities. No industry-wide trend emerged. TCEQ handled these odor

situations through the local enforcement process, as ACMA endorses. ACMA supports the initiation of enforcement action on a case-by-case basis where justified by the evidence.

ACMA strongly suspects these few incidents are traceable either to inadvertent human error or outmoded ventilation practices, or both, and represent little more. No trend is present.

ACMA's repeated requests for evidence of the supposedly abundant styrene odor complaints have gone unanswered, except for anecdotal information concerning alleged styrene odor detection by TCEQ employees. A summary statement to this effect is made on page 11 of the TARA's proposed *Styrene Development Support Document*, Section 3.2.1, Jong-Sung Lee, Ph.D., January 2008 (hereinafter *Proposed DSD*) that styrene odor was measured at 10 ppb, a level even lower than the lowest odor detection threshold measured in a laboratory setting.

TARA's table of odor and health complaints indicates six monitoring trips with 14 different time observations in one of those trips. The reports of styrene odor detection, throat irritation and headaches are completely inconsistent with scientifically credible data. Throat irritation effects for styrene have not been reported in controlled exposure studies or workplace evaluations at levels at or below 10 ppm.¹³ TCEQ field staff reported irritation purportedly attributable to styrene in the ambient air at exposures levels as much as 1,000 times lower. Similar issues are present with respect to the levels at which TCEQ field staff reported a higher incidence of headaches.

More to the point, ACMA is troubled by the notion that the number of odor complaints should dictate a lowering of the Styrene ESL. Decreasing the Styrene ELS will not reduce odor complaints for several compelling reasons.

First, the large majority of composite industry plants do not have a history of odor complaints. The affordable ventilation technologies used by most plants effectively prevent odor problems, whether or not the plants' air dispersion modeling satisfies the Styrene ESL. This is borne out by TCEQ's own odor complaints database, as discussed previously. There are almost no styrene odor complaints from the Texas composites facilities to be reduced.

Second, ACMA believes that the few industry sources that had confirmed odor complaints might readily address them through the use of effective ventilation controls. ACMA supports enforcement action to require the use of improved ventilation where there is a history of odor complaints. Decreasing the Styrene ESL is at best a very indirect and blunt method of achieving this aim, and realistically would cause further stagnation of the industry without necessarily any improvement in air quality or odor reduction.

¹³ Draft Toxicological Profile For Styrene, U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, September 2007. See www.atsdr.cdc.gov/toxprofiles/tp53.html.

Finally, as TCEQ is aware, the scientific literature supports the fact that many odor complaints are unrelated to the presence in air of substances that would actually result in nuisance odor. Complaints can be related to disgruntled employees, mistaken identification of odors, and other factors.

ACMA finds TARA's underlying premise that lowering the ESL will lower the number of styrene odor complaints is illogical.

B. TARA is Not Legally Compelled to Lower the Styrene ESL.

TARA's de facto position seems to be that it is legally compelled by its *Guidelines to Develop Effects Screening Level, Reference Values and Unit Risk Factors*, RG-442, November 2006 (hereinafter *ESL Guidance*), to lower the styrene ESL. ACMA disagrees. There is no legal, technical, or practical requirement for TCEQ to lower the Styrene ESL. The fact that TARA finalized the *ESL Guidance* does not compel lowering the Styrene ESL because legal precedent holds that agency guidance is not legally enforceable on either the regulated community or on the agency, and because that guidance provides no direction on any specific air pollutant.

The decision to lower the Styrene ESL is entirely discretionary. TCEQ has what ACMA believes is an effective and practical means of addressing those few styrene odor complaints reflected in the TCEQ's online database through its enforcement process. TCEQ has previously determined that the odor of styrene is merely "Unpleasant". What then warrants the exercise of agency discretion to lower the Styrene ESL? It is an unnecessary, arbitrary, and unwarranted exercise of agency discretion and use of agency resources to lower the Styrene ESL.

C. There is No Practical Support for Lowering Styrene ESL in the Proposed Development Support Document.

Proposed DSD is 19 pages, exclusive of its bibliography. Of that, styrene odor perception is addressed in one paragraph of six lines, and a single table, Table 4. In other words, TARA's explicit publicly available support for the proposed lowering of the Styrene ESL is limited to six lines in the *Proposed DSD*. TARA essentially ignores the rest of the *Proposed DSD*.

The six lines offer no support. In addition, Table 4 does not identify all styrene odor detection threshold studies and is therefore incomplete.

In summary, the economics of the current and a proposed lower Styrene ESL make no sense. Maintaining or lowering the Styrene ESL is bad public policy because to satisfy these ESLs, all but the very smallest of Texas composites plants could be forced to install capture and oxidation control equipment. For this reason, and others discussed in greater detail below, ACMA proposes establishing an ESL that the regulated community can meet using good ventilation practices that do not involve the purchase or installation of capture and oxidation equipment.

3. **Styrene Odor Should be Addressed Locally and Through Enforcement, Where Appropriate.**

The macro issue for ACMA presented by the TARA styrene ESL proposal is whether those few confirmed styrene odors from Texas composites plants are most effectively addressed through the TCEQ's enforcement process or through permitting process' modeling/ESL regime. ACMA is of the view (and that view is held by many, many states) that since the odor of any chemical from a specific source that affects the local community is a local issue, it should be addressed through enforcement, where necessary, and not in an inordinately restrictive statewide permitting process.

A. Odor is a local issue.

Odor is a local issue. By this, we mean that whether or not a plant creates a nuisance odor problem – whether or not community members unacceptably suffer from bad smells due to a plant's operations – is a function of many site-specific variables, none of which can be best regulated from a distance, for example by the ESL policy. These local factors include land use, topography, population density, and prevailing meteorology. Local individualized sensitivity to odor is also a local factor, since issues such as community organizing and advocacy can have a role – odor complaints can result from issues unrelated to the presence of chemicals in the air. Local, too, is the design of site-appropriate ventilation controls, which while seldom effective in meeting the current styrene ESL, are effective in preventing nuisance odor problems.

Styrene has a distinct odor and to some members of the public, that odor may be objectionable. The issue of styrene odor should not be discounted or disregarded. At the same time, the issue should not be overstated. ACMA supports the TCEQ's Enforcement Division's position that the odor of styrene is minimally objectionable. Styrene odor is deemed "Unpleasant" by the TCEQ, "Unpleasant" being the second-lowest of TCEQ's Enforcement Division's nuisance odor categories.¹⁴

The TCEQ enforcement process is an effective, tested, scientifically credible means of addressing confirmed nuisance styrene odor complaints, and deserves TCEQ priority. Its *Nuisance Odor Enforcement Guidance* is consistent with national practices and odor science. In addition, TCEQ boilerplate air permit special condition language includes an obligation to abate odors:

¹⁴ *TCEQ Odor Complaint Investigation Procedures*, January 3, 2005, at 15 (hereinafter *Nuisance Odor Enforcement Guidance*).

Emissions from the facility shall comply with 30 TAC 101.4 regarding nuisance. Complaints from affected persons of nuisance odors from the facility verified by the TCEQ or any air pollution control agency with appropriate jurisdiction shall be the basis for requiring prompt remedial action to eliminate such odors.¹⁵

The point of that language is to assure enforcement is an available option in the event odor becomes a problem in a specific situation.

There is no public policy justification for lowering the Styrene ESL when the enforcement process is reasonable, readily available, and works.

B. The Emphasis on A Local, Complaints-Based Approach to Nuisance Odor is Strongly Supported by US EPA.

In the 1977 amendments to the Clean Air Act, Congress directed US EPA to undertake a detailed review of the use of regulations to require control technologies to address odor problems. EPA commissioned a study of the subject from the National Academy of Sciences and on the basis of that study and its own analysis, EPA sent a Report to Congress.¹⁶ This seminal work has provided the basis for EPA's consideration and possible regulation of odor since 1980.

This National Academy of Sciences report provides strong support for ACMA's position stated above. The following text is from the EPA report's Executive Summary:

Reactions to odor depend heavily, however, on local values and individual aesthetic judgments. The absence of any meaningful data that relate ambient odor levels (or odorant concentrations) to community annoyance levels will likely frustrate any attempts to establish general nationwide ambient odor regulations for the foreseeable future. Indeed, since odor perception is quite subjective, nuisance law, initiated by citizen complaints, appears to be an appropriate mechanism for dealing with odor problems.¹⁷

and,

The relationship between ambient odor levels (or odorant concentrations) and odor annoyance thresholds for different communities or zoned areas must be

¹⁵ TCEQ air permit.

¹⁶ *Regulatory Options for the Control of Odors*, US Environmental Protection Agency, 1980, provided as Attachment 6.

¹⁷ *Id.* at 2.

determined prior to establishing ambient odor type standards. This step might be accomplished by determining both the dose-response relationships that equate community annoyance with odor intensity and the degree of unpleasant character of a particular odor. However, for some odorants such relationships may be impossible to develop.¹⁸

and,

In conclusion, federal regulatory involvement in odor control does not appear to be warranted. This conclusion is based on the following considerations:

1. Odors are not caused by a single pollutant, but rather are a subjective effect which may result from different combinations of numerous odorants. Thus, it is very difficult to associate any specific health or welfare effect to a given "odor concentration". As a result, the available data are not sufficient to support the establishment of a primary or secondary ambient air quality standard for odors.
2. Other problems which limit or preclude setting of national ambient air quality standards for odors or, developing State Implementation Plans for odors include:
 - a. Techniques used to measure odors are considered generally inadequate for regulatory purposes.
 - b. Reliable procedures for relating ambient odor levels to the extent of community annoyance do not exist.
 - c. Community tolerances or odor annoyance levels vary widely.
3. Use of best control technology for new or existing sources of odors under Section 111 of the Act also has problems:
 - a. It would require best controls nationwide, even though a source type may be a problem only in certain areas or situations.
 - b. It does not guarantee that community odor annoyance levels will not be exceeded, especially where fugitive odor sources are involved or when multiple odor sources are located in close proximity to one another.
 - c. Assessing and/or regulating all odor source categories would require an inordinate expenditure of Federal, State, and local control agency resources which are already fully extended to meet other Clean Air Act requirements.

¹⁸ *Id.* at 4.

4. Local and state odor control procedures appear to be generally adequate and are probably more cost effective than a uniform national regulatory program under the Clean Air Act.¹⁹

All of these EPA conclusions serve to *discount* the validity of TCEQ's permitting/ESL approach to odor, which is of the type of regulatory response that EPA rejected, and to *endorse* the approach provided in the TCEQ's Enforcement Division's Nuisance Odor Enforcement Guidance.

C. ACMA Proposes the Use of Good Ventilation Practices to Proactively Address Styrene Odor Issues.

Styrene odor is an important issue for the ACMA and its members, many of whom live in the very communities that the Texas Styrene ESL is intended to protect. ACMA strongly suspects the few confirmed odor styrene complaints in the agency's database arising from composite facility operations are traceable either to inadvertent human error or outmoded ventilation practices, or both, and represent little more. ACMA supports good ventilation practices that require a reasonable economic commitment by its members. The design of effective ventilation practices depends on local conditions, such as distance to the nearest neighbor, terrain topography, and surrounding land use.

Texas composite facilities have a wide spectrum of available ventilation options that range from wall-mounted exhaust fans to very tall exhaust stacks. Any one or more than one of these options should be sufficient to prevent nuisance odors in any particular location. As shown in ACMA's modeling, the elimination of wall-mounted ventilation systems in favor of roof-mounted systems can lower the modeled maximum ground level styrene concentration from a typical composites plant by as much as two orders of magnitude.²⁰

4. **If TCEQ Persists in Relying on Odor Detection Threshold Data, It is Obligated to do so in a Scientifically Credible Manner.**

A. The Overall Quality of Odor Threshold Detection Studies Argues Against Choosing a Single Study as the Sole Basis for Setting the Styrene ESL.

The science of detecting odors in general and styrene odors specifically has not progressed to the same level of scientific and statistical verifiability as health effects science, such as animal toxicity testing. In a review conducted for ACMA, odor experts Pamela Dalton and Laurence Jacquot of the Monell Chemical Senses Center reported:

¹⁹ *Id.* at 5.

²⁰ *Haberlein Study, supra* note 5, at 13 and 15.

Although odor thresholds have been measured and reported for more than a hundred years, even now no single methodology has been uniformly adopted for measuring olfactory sensitivity in humans. It is not uncommon to find reported odor thresholds in the literature for a single compound to vary by more than an order of magnitude and in this regard, styrene is no exception. The variation in thresholds among studies can be traced to differences in odor presentation method, panel composition and size, and/or procedures for analyzing the stimulus concentration and calculating the threshold.²¹

Odor detection threshold studies of styrene (or any other compound) are not a measure of the ability to detect styrene specifically. They are studies to determine the presence of a compound other than what the studies' participants perceived to be "clean air." This measurement is of a perception of odor, not a physical property of the subject chemical, and the odor threshold is established at that level where the test subjects correctly identify the presence of an unidentified chemical 50 percent of the time. Scientific studies confirm that odor perception is highly subjective and that anticipation, mood, and bias can play significant roles.

In addition, these studies suffer from the problem of determining accurately exactly how much of a chemical a test subject is exposed to each time a data point is collected. For example, a chemical is introduced in the general vicinity of the test subject, but what is the concentration of the chemical that is actually inhaled by the subject? There is also the usual problem of determining that one's test subjects are representative of the general population and are not either more sensitive or less sensitive, in this case, to odors. This is not a sensitivity that is easily determined.

This is why, as even TARA acknowledges, there is a very high variability, ranging over several orders of magnitude, among individuals in the area of odor detection.

The reported odor threshold data differ considerably. It is not uncommon for reported odor threshold values to range over several orders of magnitude for the same chemical.²²

Finally, once one has determined an odor detection threshold among a particular set of test subjects in a study in a laboratory, there is still the challenge of extrapolating these results to the real world situation of people exposed to odors smelled in their neighborhood. For example, the laboratory air is filtered, and the test subject is told to expect to detect an odor. In the outside

²¹ Dalton and Jacquot, *supra* note 2.

²² *Guidelines to Develop Effects Screening Level, Reference Values and Unit Risk Factors*, RG-442, Texas Commission on Environmental Quality, November 2006, at. 8.

world, there are many competing sensations and any chemical needs a stronger signal in order to be detected. In short, odor detection thresholds measured in the laboratory in a single study are a very weak reed upon which to base any standard or guideline for acceptable ambient public exposure.

The *ESL Guidance* provides TCEQ with the latitude to not use odor threshold data or to use it in a manner other than simple selection of the single lowest data point. ACMA recommends TCEQ recognize and use this latitude in the case of styrene.

B. Texas Should Use a Weight of Evidence Approach to Set the Styrene ESL.

Of the reported odor threshold studies found by Dalton and Jacquot to meet certain requirements for scientific credibility, the reported styrene odor detection thresholds ranged from 73.6 ug/m³ to 8530 ug/m³.²³ Arbitrarily selecting one or more of the reported studies because they provide data at the low end of the range, and then using these studies in a regulatory context, as TARA's odor ESL policy would dictate, arbitrarily and unscientifically elevates the standing of these low-threshold studies.

TARA should follow the advice of Dalton and Jacquot in setting the Styrene ESL using a weight of evidence approach:

While it may be tempting to assume the lowest value in a data set is the most protective, there are compelling reasons to seek a 'weight of evidence' approach with regard to convergence of threshold data values across laboratories and methods. Indeed, depending on the test panel composition (gender and number) a very low average threshold may occur as a function of having selected a small number of extremely sensitive and well-trained individuals for participation. When we consider studies where a larger number of individuals are tested, the average thresholds are typically higher and may be more representative of the general, naïve population.²⁴

A "weight of evidence approach" is one that, in a transparent and scientifically defensible manner, uses all reasonably available data. The approach provided in TARA's *ESL Guidance* can not be considered a weight of evidence approach because it uses only those studies with lower reported odor detection thresholds, without providing a scientifically credible reason why those studies may be more predictive of community odor problems than studies with higher thresholds.

²³ Dalton and Jacquot, *supra* note 2, at Table 7.

²⁴ Dalton and Jacquot, *supra* note 2, at 13.

A scientifically defensible weight of evidence odor detection threshold for styrene begins with assembling all of the studies of styrene odor threshold detection that meet minimum scientific criteria for quality. TCEQ lists eight studies in its *Proposed DSD*, the scientific credibility of which ACMA does not dispute for purposes of this specific discussion. Dalton and Jacquot also list eight studies in their review of styrene studies.²⁵ When duplications are eliminated, there are 12 studies whose odor detection thresholds range over two orders of magnitude. This broad range illustrates the scientific challenge and danger of relying on only the lowest reported value as the correct value for an ESL for styrene, as the TCEQ suggests. The mean of these studies' odor detection threshold values is 1212 ug/m³.

If TARA persists in resetting the Styrene ESL on the basis of odor threshold data, then it should rely on this weight of evidence approach. That approach leads to a new Styrene ESL of 1200 ug/m³.

C. TARA's Approach to Setting a Styrene Odor-Based ESL Is Flawed Because the Odor-based portion of TARA's *ESL Guidance* Did Not receive Approval from Its External Peer Review Committee.

To develop the *ESL Guidance*, TARA contracted with Toxicological Excellence for Risk Assessment (TERA) to convene a panel of independent experts ("the TERA Panel") to review TARA's proposed approach to setting ESLs. The TERA Panel's findings and recommendations to TCEQ regarding the ESL program were published (hereinafter *TERA Panel Report*).²⁶

It is clear from the *TERA Panel Report* that there was never a "meeting of minds" between the TERA Panel and TARA staff regarding the objectives of the odor detection threshold-based ESLs. The TERA Panel's comments clearly show that the TERA Panel members believed in error that odor was being used in the context of the ESL program as an indication of *toxicity*. There is no indication that the TERA Panel understood that the purpose of establishing odor detection threshold-based ESL is to prevent nuisance odor complaints. For example, the *TERA Panel Report* reads:

The panel discussed the approaches to setting odor ESLs described in [TARA's draft] document and suggested alternative acute endpoints that are *more closely tied to health effects* than odor.

and,

²⁵ Dalton and Jacquot, *supra* note 2, at Table 7.

²⁶ *Report of the Peer Review Meeting on Development of Effects Screening Levels, Reference Values, and Unit Risk Factors for the Texas Commission on Environmental Quality*, Toxicology Excellence for Risk Assessment, October 12, 2005.

Reviewers noted that there is not a good toxicological basis for establishing screening levels based on odorant properties, especially because the ability to detect or perceive an *odor does not typically map with levels associated with toxicity.*²⁷ (emphasis added)

ACMA does not believe that TARA clearly communicated to the TERA Panel that TARA intended to employ odor detection threshold-based ESLs to significantly reduce, if not to entirely prevent, nuisance odor complaints. It seems very unlikely, and there is no record to show, that Panel members understood that TARA's intended approach would effectively prevent construction of production capacity, and create uncertainty for existing plants, in an industry such as composites where there is no significant history of odor complaints, and where controls to meet an odor detection threshold-based ESL established using TARA's overly conservative and non-scientific process are not affordable and would harm to employment and economic activity.

Even if ACMA is mistaken in this assertion, the TERA Panel expressed clear concern with TARA's procedure for setting odor-based ESLs, concerns which the agency has still not addressed:

[P]anel members were concerned about the variability of [odor] data and suggested that the document should include more text devoted to what attributes help standardization of testing.²⁸

TERA enlisted the assistance of Dr. William Cain, of the Chemosensory Perception Laboratory at the University of California, San Diego, an academic odor expert, to review the draft *ESL Guidance* with regard to odor. In his analysis, he states:

These data lead me to believe that the EPA/AIHA set is [sic] systematically overestimates threshold concentrations and has many values that are incorrect by substantial factors. In light of these new results, I certainly question the use of the EPA/AIHA values at all and believe that new data gathering is probably the only way to fix the problem.²⁹

TARA staff has informally stated that these comments were addressed and resolved verbally with the panel members in summary meetings between TARA and the TERA Panel, and the TERA Panel members indicated agreement with TARA's position by nodding their heads. ACMA's understanding, based on discussions with TERA management, is that substantial

²⁷ *Id.* at 30.

²⁸ *Id.* at 30.

²⁹ *Id.* at Appendix D.

disagreement remains between the TERA Panel and TARA with regard to TARA's approach to odor. This opaque process excluded stakeholders, including ACMA.

TARA staff won approval within the agency for the adoption of the *ESL Guidance* (despite publicly announced valid TERA Panel concerns), giving the impression that its goal was merely to provide narrative form to past internal agency ESL-setting practices. TARA's Styrene ESL proposal here is contrary to this impression.

Given the impact of the current and proposed lower odor detection threshold-based Styrene ESL on the composites industry, and its understanding of an ongoing disagreement between TARA and TERA, ACMA believes that prior to finalizing an odor-based ESL, TARA must finalize the TERA process in a manner that is transparent and satisfies minimal scientific standards for external peer review. It is clear that TARA's Styrene ESL policy, at least, would not meet with the approval an external expert review panel.

As noted previously, Dalton and Jacquot recommend specific procedures for setting scientifically credible and effective weight of evidence-based odor detection threshold limits. Should TARA continue to insist, despite our contrary arguments above, on the use of odor as a basis for state-wide permit review, ACMA proposes that TARA be required to convene an external expert panel, follow the recommendations of Dalton and Jacquot, and be required to obtain concurrence by the panel on the establishment of styrene odor detection threshold limits.

5. TARA Should Increase the Styrene ESL to 1200 ug/m³.

- A. Increasing the Styrene ESL to 1200 ug/m³ is Supported by, and Very Conservative Relative to, Actions Taken by Other States.

In recent communications, TCEQ has offered: "far more styrene emissions are permitted in Texas than in any other state. According to the 2005 Toxics Release Inventory, Texas facilities emit over 1-½ times as much styrene as the next highest state. . . ". ACMA does not believe this is what this inventory reports.

According to the 2005 Toxics Release Inventory, the following calendar year releases of styrene in pounds by state were reported:

State	2005 TRI Reported Styrene Releases (total point source and fugitive air releases)	ESL Equivalent
Tennessee	5,425,702	None
Indiana	5,348,808	None
Texas	5,347,861	110 ug/m ³
Florida	4,455,558	None
Georgia	3,489,804	12,500 ug/m ³

ACMA is unclear how TCEQ understands these release figures to bear on this Styrene ESL discussion.³⁰ What these statistics do point out is that none of these states, except Georgia with its ESL-equivalent of over 100 times greater than Texas', conditions issuance of air permits on satisfying an ESL-equivalent.

From the experience of its members, in fact, ACMA can accurately report that these states regulate odor effectively at the local level through their enforcement mechanisms. Odor is a concern and is regulated. ACMA's proposal to increase the Styrene ESL to 1200 ug/m³ is extraordinarily conservative relative to each of these states.

ACMA would expect that Texas, a major oil refining and petrochemical producing state, to have higher absolute emissions of a variety of petroleum-related air pollutants, including styrene. Texas properly controls styrene emissions through the same BACT and MACT requirements applied in these states, as well as through its enforcement program. Texas is rightly proud of its petroleum and petrochemical industries and their role in meeting the energy needs of America. Millions of jobs across Texas and this country, and billions of dollars in economic impact, arise from these activities.

1. TCEQ's Comparison to South Coast Air Quality Management District (SCAQMD) is Invalid.

ACMA is frustrated with TARA's comparison of the Texas Styrene ESL to South Coast Air Quality Management District (SCAQMD) actions in recent agency communications.³¹ As a matter of public policy, Texas should not be regulating air emissions from its industrial base as the South Coast Air Quality Management District regulates air emissions from its base. Most of Texas is rural, whereas the SCAQMD jurisdiction is highly urbanized. More critically, Texas' air quality problems, including those in its non-attainment areas, have never been as bad as those the Los Angeles area has experienced for over 40 years. The Los Angeles area's air quality problems are recognized as by far the worst in the United States, and among the worst in the world. Equating Texas' air quality issues with those of Los Angeles for these purposes as justification for a lower Styrene ESL is unreasonable.

TARA has recently stated that "SCAQMD staff reported that more than 90 percent of styrene sources have controls, and that small styrene-emitting facilities typically use thermal combustion devices." ACMA's members' experience and the evidence is otherwise. The most recent SCAQMD survey available to ACMA found about 80 composites plants subject to

³⁰ And if divided by the surface area of each state, the styrene emissions in Texas appear even less significant.

³¹ ACMA's previously reported state ESL-equivalent research did not include local regulatory requirements that may exist and may be more or less stringent than state requirements. ACMA was unfamiliar with SCAQMD's informal policy: it is not on its website and to AMCA's knowledge, it had not been applied to a composites plant within the SCAQMD's jurisdiction.

SCAQMD's jurisdiction. Of these, about ten percent use air pollution control equipment. Of these ten, ACMA is able to confirm that only one of these plants installed air pollution control equipment to address styrene odor. The remainder installed air pollution control equipment to address MACT or then-new SIP VOC regulatory requirements. Each of the latter group of sources had uncontrolled VOC emissions of 20 tons per year or more.

2. TCEQ's Contrast Between the Supposed Regulation of Odor in Arkansas to the Texas Styrene ESL is Invalid, and in Fact is Supportive of ACMA's Proposal of a Styrene ESL of 1200 ug/m³.

TARA recently responded to ACMA's data on concentration limits enforced by other states by noting that Arkansas has a relevant odor-based provision on the subject. ACMA had previously determined, through the EECS study, that Arkansas has a health effects-based ESL-equivalent in its regulations. ACMA has carefully examined the Arkansas regulatory website and has been unable to discover any reference to the odor-based policy, either directly or in the published permitting procedures and policy. Consultants who assist industry members in Arkansas with air emissions permits report that they have never encountered an odor-based policy in the state.

At most, possibly, Arkansas has an informal policy not generally available to the public on the agency website that is based on odor. Perhaps the Arkansas odor-based screening limit is employed only in cases where sources have a history of odor complaints; since the large majority of composite plants operate without causing nuisance odor problems; this would explain why the industry has been unaware of an Arkansas odor-based policy.

Setting aside for the time a debate over which of the Arkansas references is most like Texas' ESL (ACMA is convinced it is the one based on health effects), it is indisputable that each Arkansas numeric (2,130 ug/m³ and 1,361 ug/m³) is materially higher than Texas Styrene ESL of 110 ug/m³.

In ACMA's view, the status of styrene in Arkansas air permitting supports the conservation nature of ACMA's request for a Texas Styrene ESL of 1200 ug/m³. ACMA's Texas members would be well satisfied with 2,130 ug/m³ or 1,361 ug/m³ as presented by Arkansas's approach.

- A. A Styrene ESL of 1200 ug/m³ is Highly Protective of Public Health.

On several levels, the Styrene ESL value proposed by ACMA is very conservative.

The *Proposed DSD* implies clearly that if TCEQ were to base the Styrene ESL on health effects data, the Styrene ESL would be set at 6,500 ug/m³.³²

In addition a Styrene ESL set at 1200 ug/m³ would be lower, and in some cases substantially lower than all of the health effects-based ESL-equivalents in 34 other states.

Although ACMA believes that Texas should use health effects data because of its scientific superiority, and should recognize the decisions on 34 other states who regulate styrene based on health effects data, and base its Styrene ESL on health effects, ACMA is prepared to accept an ESL 1200 ug/m³.

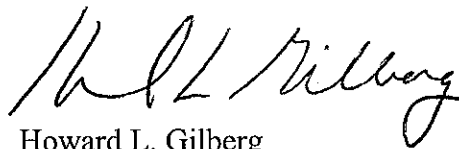
- B. For Protecting Against Odor Problems, a Styrene ESL of 1200 ug/m³ is Conservative by a Factor of at Least 5, Given the Difference in Laboratory and Real World Odor Perception.

As described above, it is common practice in setting a regulatory limit based on odor detection threshold data to take into account the differences in odor perception in the controlled environment of a study and the uncontrolled environment of an ambient air exposure. Dalton and Jacquot recommend multiplying a laboratory odor detection threshold, such as the styrene mean of 1200 ug/m³, by a factor of 5-8 to translate laboratory findings into a meaningful limit in the real world.³³

ACMA's proposal of 1200 ug/m³ ignores this conversion, and is therefore quite conservative.

Thank you for this opportunity to submit these public comments.

Very truly yours,



Howard L. Gilberg
Direct Dial: 214.692.7121
E-mail: gilberg@guidaslavichflores.com

Enclosures
HLG:dml
A918-01652.1866 v

³² Proposed Styrene Development Support Document, Jong-Sung Lee, Ph.D., January 2008, at Table 1.

³³ Dalton and Jacquot, *supra* note 2, at 13.

INDEX OF ATTACHMENTS
PUBLIC COMMENTS ON PROPOSED LOWERING OF STYRENE ESL
AMERICAN COMPOSITES MANUFACTURERS ASSOCIATION

- 1.A. *Composites Manufacturing Plants subject to the TCEQ Styrene ESL Cannot Comply with the ESL Levels through the use of Capture and Control*, ACMA, February 7, 2007.
- 1.B. *TCEQ ESL Policy Adversely Affects Texas' Economy*, ACMA, February 7, 2007.
- 1.C. May 29, 2007 letter from ACMA (John Schweitzer) to TCEQ (Michael Honeycutt) with Attachments:
 - 1.C.(1) *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007.
 - 1.C.(2) *Styrene Toxicology Summary*, by the Styrene Information and Research Center (SIRC).
 - 1.C.(3) *Review of Styrene Odor Threshold Values in Air*, Pamela Dalton, Ph.D., and Lawrence Jacquot, Ph.D., Monell Chemical Senses Center, May 22, 2007.
- 1.D. May 28, 2007 ACMA Public Comments (Howard L. Gilberg) Concerning Proposed Repeal of Permit by Rule 30 TAC 106.392 and Proposal to Adopt Standard Permit for Thermoset Resin Facilities with Attachments:
 - 1.D.(1) TCEQ Odor Complaint Investigation Procedures, January 3, 2005.
 - 1.D.(2) *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007.
 - 1.D.(3) May 29, 2007 letter with its Attachments provided as Attachment 1.C. of these public comments.
 - 1.D.(4) *Air Permit Technical Guidance for Coatings Sources: Fiber Reinforced Plastics and Cultured Marble Operations*, TCEQ, October 2000.
- 1.E. ACMA (John Schweitzer) letter to TCEQ (Becky Southard), December 7, 2006.
- 1.F. *The Composites Industry in Texas*, ACMA, July 2005.

INDEX OF ATTACHMENTS (continued)

2. TCEQ Memorandum from Lori Wilson and Beth Echels, Emissions Banking/Modeling Team, to Eddie Mack, Combustion/Coatings Team, March 13, 2006; and *Request for Comments to Toxicology & Risk Assessment Section*, April 4, 2006.
3. *Feasibility of Achieving the TCEQ Short-term ESL Styrene Limit using Atmospheric Dispersion or Add-on Controls for Small and Medium Composite Facilities*, Robert A. Haberlein, Ph.D., EECS, February 4, 2008.
4. *Affordability of Capture and Control, an Evaluation for the Existing Facilities Subject to EPA's Proposed Requirement*, Environomics, 2000.
5. *Comparison of State Ambient Limits for Styrene*, by Engineering Environmental Consulting Services (EECS), as of May 29, 2007.
6. *Regulatory Options for the Control of Odors*, US Environmental Protection Agency, 1980.