

Response to Public Comments on the Lynchburg Ferry Boundary Reevaluation

Texas Commission on Environmental Quality Chief Engineer's Office

April 2012

The Texas Commission on Environmental Quality (TCEQ) accepted public comments on the Lynchburg Ferry boundary reevaluation from October 31, 2011, through December 23, 2011. The TCEQ also conducted a public meeting in Houston on December 14, 2011, to discuss the proposed boundary revision and accept oral or written comments. The TCEQ received written comments from Occidental Chemical Corporation and K-Solv, LP (K-Solv). K-Solv also provided oral comments at the public meeting.

Comment 1: K-Solv commented that the data associated with styrene emissions in the area of consideration clearly shows that the focal point of styrene emissions is centered on the Lynchburg Ferry site. K-Solv commented that the APWL boundary should be redrawn to reflect the focal point of styrene emissions, following the Houston Ship Channel to the Lynchburg Ferry and taking a northerly turn at the San Jacinto River in order to exclude facilities north of the Houston Ship Channel, east of Sheldon Road to the Old River, and south of Interstate Highway 10 (IH-10). K-Solv further commented that these facilities should be excluded because they are not engaged in the manufacture of styrene, that very few facilities in this area handle, store, or process styrene, and that the facilities that do handle, store, transport, or process styrene only do so in minute quantities. K-Solv supported its comment by stating that relevant data clearly shows that none of the facilities in the area north of the Houston Ship Channel, east of Sheldon Road to the Old River, and south of IH-10 contribute to the styrene issue and that styrene levels are well below those that would present any kind of health or odor issues. K-Solv commented that employees working in the area do not observe styrene odors whatsoever. K-Solv further commented that it agrees that the companies in the area south of the Houston Ship Channel and around the Lynchburg Ferry be listed

on the APWL because it is a problem and you can sometimes smell the styrene if you drive there.

Response 1: The monitoring and emissions data that the TCEQ relied on during discussions relating to the reevaluation of the Lynchburg Ferry APWL boundary demonstrates that there are several other processes that have been shown to increase ambient styrene concentrations, thereby also demonstrating that styrene emissions are not solely the result of the manufacture of styrene. The TCEQ determined that the facilities in the area identified by K-Solv have the potential to affect ambient styrene concentrations and will remain in the APWL area. Furthermore, individuals may observe a styrene smell when concentrations exceed the odor-based Air Monitoring Comparison Value (AMCV). The TCEQ agrees that many of the concentrations that were measured as exceedances of the odor-based AMCV by the Lynchburg Ferry monitor originated from emission sources that are located to the north to northeast and relatively close to the monitor. The styrene concentrations and wind directional data recorded at the Lynchburg Ferry monitoring site, however, show that concentrations have also exceeded the odor-based AMCV when winds arrive from directions other than the north to northeast. Therefore, the TCEQ is finalizing the Lynchburg Ferry boundary to identify the same companies that were proposed for inclusion on the October 31, 2011, draft boundary, without identifying the companies as Tier I, Tier II, or Tier III. The final map encompasses several styrene sources in the area that have the potential to contribute to elevated concentrations. The final map contains fewer companies than the map developed in 2003 and will help the TCEQ better focus its resources in the area. The TCEQ is not excluding additional companies from the Lynchburg Ferry APWL boundary in response to this comment.

Comment 2: K-Solv commented that data from the Jacinto Port and Channelview monitoring stations do not show any styrene exceedances in the area during 2010 and that the highest readings reported show styrene levels at less than ten percent of the published odor-based styrene effects screening level (ESL). Specifically, K-Solv commented that data from the Jacinto Port and Channelview monitors for 2010 and 2011 shows that the maximum concentration is 2 parts per billion, which is within ten percent of the 25 parts per billion odor limit for styrene.

Response 2: Identifying the type of monitor is one of the key factors in conducting a complete evaluation of monitoring data. The Channelview and Lynchburg Ferry monitoring sites contain an automated gas chromatograph monitor (auto GC); the Jacinto Port monitoring site contains a canister sampler. A canister sampler takes a 24-hour sample every six days and provides data differently than an auto GC, which provides hourly concentrations. A canister sampler, such as the one located at the Jacinto Port monitoring site, cannot be used to show if hourly concentrations exceed a short-term, health-based or odor-based AMCV. The auto GC located at the Channelview monitoring site did not record any exceedances of the short-term, odor-based AMCV in 2010 or 2011, as noted by the commenter; however, the highest hourly reading recorded at the Channelview monitor during 2010 and 2011 was 20.51 parts per billion, which is 82 percent of the 25 part per billion odor-based AMCV.

Comment 3: K-Solv commented that data in the APWL document shows that the main source of styrene emissions affecting this area is the Vopak Terminal in Deer Park, that impacts of these emissions are clearly shown on the wind rose charts in the APWL document and that these charts show and are supported by data that the Jacinto Port and Channelview areas are not significantly impacted by these emissions.

Response 3: Vopak Terminal Deer Park is the company that has reported the largest amount of styrene emissions in the Lynchburg Ferry APWL area; however, the wind rose charts indicate that most of the exceedances of the styrene odor-based AMCV occurred when winds arrived at the monitor from the opposite direction of the terminal. The amount of emissions calculated and reported by entities was not the only information the TCEQ used to draw the boundary. The TCEQ also used other data, such as monitoring and wind directional information, to conduct its evaluation and determined that additional companies must be included in the APWL boundary.

Comment 4: K-Solv indicated that it does handle styrene, but only in small quantities, and that one other company in the area handles barges that may have styrene. Specifically, K-Solv commented that it operates a barge stripping and degassing facility in which chemical barges operating along the Houston Ship Channel can have heel¹ removed and the vapor space vented to a very efficient vapor combustion system. K-Solv noted that its vapor combustion unit has a 99.5 percent destruction efficiency, as demonstrated by testing conducted two months prior to the Lynchburg Ferry public meeting held in December 2011. K-Solv also commented that it handles 250 gallon totes and 55 gallon drums and that it operates one 5,000 gallon storage tank that is dedicated to styrene storage, which has emissions that are controlled by carbon absorption systems. K-Solv commented that it is restricted from handling and cleaning styrene barges due to the current APWL boundary not allowing for any new emission sources of styrene. K-Solv commented that if a company were to empty a styrene barge, they would have nowhere to get rid of the styrene vapor. Providing services to actually clean up the barges will reduce emissions in the area along the Houston Ship Channel. K-Solv commented that, if the boundary is changed to eliminate the area north of the Houston Ship Channel, east of Sheldon Road to the Old River, and south of IH-10 from the APWL, it would allow K-Solv to amend its permit to allow for the processing of styrene barges. K-Solv commented that allowing K-Solv to process styrene barges would result in actual removal of those potential emissions from the area, the result of which would be an overall decrease in styrene emissions from barges operating in the area.

Response 4: The TCEQ is adopting the Lynchburg Ferry styrene APWL boundary to include all of the companies identified on the map proposed on October 31, 2011, and makes no change to the boundary in response to this comment. As noted in Response 1, the monitoring and emissions data relied on by the TCEQ indicates that the Lynchburg Ferry APWL boundary as reevaluated will allow the Agency to focus its resources on those sources within the area that have the potential to contribute to an exceedance of

¹ Heel is a term used to describe the liquid in the bottom of a vessel, below its outlet, that remains after the vessel's product has been emptied.

an air toxic, in this case, styrene. The TCEQ properly evaluated all sources of styrene in the area.

The location of a company in an APWL area alone does not restrict the company from performing operations that emit the contaminant of concern. The New Source Review (NSR) permit of the individual company specifies what operations are authorized. A company has the ability to request an amendment to its existing permit to authorize additional operations. The TCEQ must, however, scrutinize a request to authorize additional emissions of the contaminant of concern in an APWL area. Such applications could result in additional permit requirements, additional restrictions on emissions of the contaminant of concern, or could require a more in-depth health effects evaluation.

Comment 5: K-Solv commented that, although the control of air pollutants through the APWL can be an effective way to improve the overall air quality, it is equally important not to restrict facilities that do not contribute to the air quality issues. K-Solv commented that the TCEQ has delisted the Lynchburg Ferry APWL area for benzene within the last year due to a lot of reductions.

Response 5: The TCEQ appreciates the efforts of the companies that have contributed to the improvements in air quality in the Lynchburg Ferry area. The TCEQ determined that Lynchburg Ferry no longer needs to be listed on the APWL as a means to address ambient benzene concentrations, but Lynchburg Ferry remains listed for styrene. The TCEQ is adopting the Lynchburg Ferry map for styrene because it better identifies the companies that have the potential to contribute to elevated ambient styrene concentrations. A company's listing on the APWL map does not automatically impose a restriction on the contaminant of concern. The TCEQ will evaluate any request to increase styrene emissions on a case-by-case basis.

Comment 6: K-Solv commented that it used the U.S. Environmental Protection Agency's SCREEN3 dispersion model to conduct basic air dispersion modeling for styrene emissions from its vapor combustion unit. K-Solv noted that the modeling was based on the degassing of 100 20,000 barrel styrene barges per year and that the results of the modeling exercise showed styrene emissions from the stack produced ground level concentrations significantly below the published ESL for styrene.

Response 6: Air dispersion modeling is commonly used by the TCEQ during the evaluation of an application for a new or modified NSR permit. The TCEQ conducts its own review of any air dispersion modeling submitted during the evaluation of initial issuance for or modification of an NSR permit. Furthermore, the results of an air dispersion modeling analysis are considered to be estimates of predicted concentrations based on worst-case scenario estimations of emissions of air contaminants from the equipment at the site. The APWL relies on actual ambient concentrations of air toxics measured by monitors in each APWL area. Because modeling is an estimation of air concentrations, it is inappropriate to consider modeling results during the reevaluation of an APWL area that is based on actual monitored air concentrations. Such information is beyond the scope of the Lynchburg Ferry boundary evaluation. The TCEQ makes no changes to the Lynchburg Ferry boundary in response to this comment.

Comment 7: Occidental Chemical Corporation commented that it supports the proposed boundary reevaluation and the new Lynchburg Ferry APWL area.

Response 7: The TCEQ appreciates Occidental Chemical Corporation's interest in environmental issues and its support for the proposed boundary and reevaluation in the Lynchburg Ferry APWL area.