

EXECUTIVE SUMMARY

In response to a March 10, 2006 Order of the Texas Commission on Environmental Quality (the TCEQ), ASARCO LLC (ASARCO) has conducted a comprehensive air quality analysis ("Analysis") to demonstrate the potential effects of its El Paso Plant ("Plant") on the air quality in nearby regions of Texas, New Mexico and Mexico. This report documents the work ASARCO has performed in response to the Order.

The results of the Analysis, presented in this report, confirm the conclusions reached by the staff of the TCEQ and its predecessor agencies during their reviews of all the air quality permit applications, registrations, and notifications submitted by ASARCO since 1992: emissions from the ASARCO El Paso Plant will not cause or contribute to a condition of air pollution.

In this study, ASARCO performed atmospheric dispersion modeling of the emissions from the approximately 100 sources at the Plant. The model calculated ambient concentrations for over 12,000 off-site receptors, including approximately 1,000 schools and air monitoring sites -- an area extending 50 kilometers in all directions of the Plant and encompassing over 3,000 square miles of Texas, New Mexico, and Mexico. In addition, ASARCO evaluated the Plant's potential impacts in light of current measured air quality levels in the El Paso/Juarez region. The sources modeled at the El Paso Plant are depicted on Figure 1, which is an overlay of the locations of ASARCO's sources and structures on an aerial photograph. The modeled receptors, including schools and monitors, are depicted on Figures 2, 3, and 4.

ASARCO's Analysis adhered to a protocol provided by the TCEQ on May 9, 2006 and followed other established dispersion modeling guidance of the TCEQ and the Environmental Protection Agency (EPA). As such, the modeling approaches ASARCO followed reflect the modeling requirements for applicants for Prevention of Significant Deterioration (PSD) permits. In particular, the modeling was performed using EPA's current regulatory "Guideline" atmospheric dispersion model, AERMOD, and used meteorological data based on wind speed and direction data collected at the Plant site. Following EPA and TCEQ guidance, the influences of on-site structures and regional terrain on the dispersion of emissions were comprehensively evaluated.

Atmospheric dispersion modeling results were analyzed in three ways. First, ASARCO identified maximum modeled concentrations anywhere off property, regardless of the location. For those air contaminants for which recent ambient air quality data exist, ASARCO identified background concentrations representative of contributions from natural and manmade sources and evaluated the maximum modeled concentrations from the Plant's emissions in combination with these background levels.

Second, ASARCO examined the modeling to identify maximum concentrations due to the Plant's emissions at the locations of public elementary, junior high, and high schools in Texas, New Mexico, and Mexico.

**AIR QUALITY ANALYSIS
ASARCO EL PASO PLANT**

Finally, ASARCO examined the modeled impacts at the locations of air quality monitors in Texas, New Mexico, and Mexico, even though the model calculated very small impacts at these locations.

The results of the analysis of air contaminants subject to National Ambient Air Quality Standards¹ (NAAQS) and net ground-level property line standards² are summarized below. As these results show, modeled contributions from ASARCO, even when added to representative background levels, as appropriate, do not exceed the air quality standards at any receptor, including the locations of monitoring sites and schools in Texas, New Mexico, and Mexico.

Results for NAAQS and Property Line Standard Air Contaminants (concentrations in micrograms per cubic meter except as noted)						
Air Contaminant	Averaging Period	Standard	Background Level ^a	Modeled Concentration Due to Plant ^b		
				Maximum Anywhere	Maximum at Any School	Maximum at Any Monitor
Sulfur Dioxide	1-hour	0.5 ppmv	NA	0.5 ppmv	<0.1 ppmv	<0.1 ppmv
	3-hour	1,300	664	357	90.2	114
	24-hour	365	185	84.4	33.9	65.0
	Annual	80	27	10.3	4.2	10.1
Nitrogen Dioxide	Annual	100	38	9.9	0.7	0.1
PM ₁₀	24-hour	150	93	33.8	10.7	1.5
	Annual	50	41	5.6	0.6	0.2
PM _{2.5}	24-hour	65	21	19.9	9.4	1.3
	Annual	15	8.5	4.0	0.6	0.2
Carbon Monoxide	1-hour	40,000	NA ^e	55.6	17.0	6.0
	8-hour	10,000	NA ^e	25.1	5.6	1.5
Lead ^c	3-month	1.5	0.07	0.2	0.04	0.004
Sulfuric Acid	1-hour	50	NA	6.4	0.8	NA ^d
	24-hour	15	NA	0.3	0.1	NA ^d

a. Monitored concentrations representative of highest existing levels in areas of maximum impacts modeled for Plant
b. Highest 2nd high modeled concentrations reported for short-term averaging periods, except for property-line standard evaluations, where highest 1st high concentration reported (sulfuric acid and 1-hour sulfur dioxide)
c. Maximum modeled lead concentrations are monthly averages, providing for conservative comparisons to the quarterly standard
d. No sulfuric acid ambient air quality monitoring data are known to have been collected in the El Paso/Juarez areas
e. Not presented since maximum modeled impacts for Plant are less than EPA and TCEQ significant impact levels

¹ The NAAQS were established by EPA to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly and to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

² The net ground-level concentration standards were established by the TCEQ to limit the net off-property concentration resulting from emissions from a single property on contiguous properties. In this Analysis, the "property" is the ASARCO El Paso Plant site.

**AIR QUALITY ANALYSIS
ASARCO EL PASO PLANT**

Additional details of the analyses for the NAAQS and property line standard air contaminants are contained in the main body of this report.

The remaining air contaminants potentially emitted by ASARCO are not subject to air quality standards but are evaluated in Texas air quality permitting through comparison of modeled results to effects screening levels³ or ESLs. In particular, the materials smelted by ASARCO consist of a number of trace materials for which ESLs exist, including cadmium and arsenic. The modeling results for these and other substances show that the Plant's emissions will result in acceptable concentrations with respect to the ESLs even when measured concentrations are considered. Details of the results of the ESL analysis are also contained in the in the main body of this report.

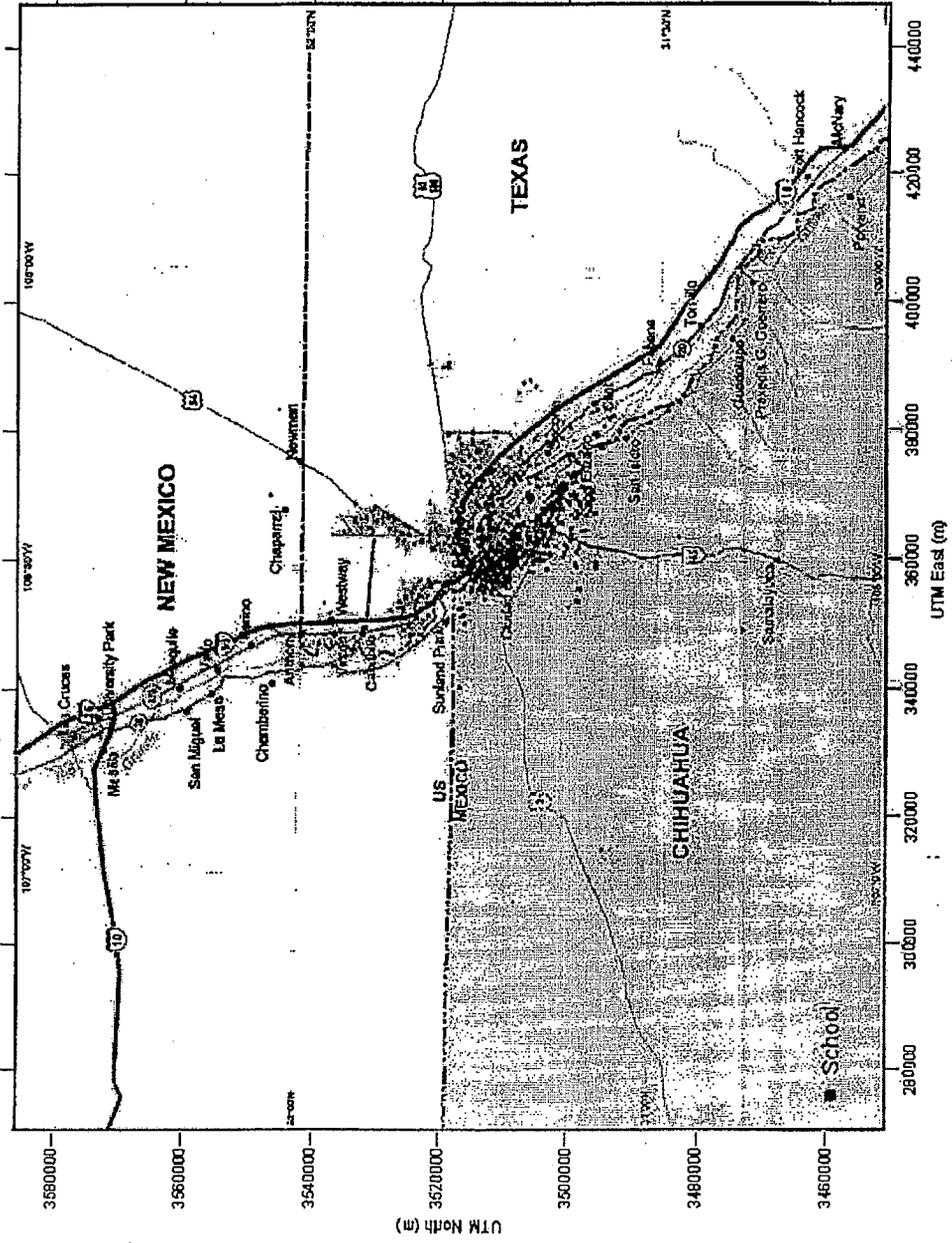
³ Effects Screening Levels are screening levels established by the TCEQ to evaluate the potential for effects to occur as a result of exposure to concentrations of constituents in the air. They are not ambient air standards. If predicted or measured airborne levels of a constituent do not exceed the screening level, adverse health or welfare effects are not expected. If ambient levels of constituents in air exceed the screening levels, it does not necessarily indicate a problem but may require a more in-depth analysis.

Figure 1 Locations of ASARCO Sources and Structures



AIR QUALITY ANALYSIS
ASARCO EL PASO PLANT

Figure 3 Locations of Schools Within 50 km of ASARCO



AIR QUALITY ANALYSIS
ASARCO EL PASO PLANT

Figure 4 Locations of Air Quality Monitors Within 50 km of ASARCO

