Lynn M. Alley

Atmospheric Scientist
Project Manager

STi | Sonoma Technology

Ms. Alley joined STI's Atmospheric and Emissions Modeling Group in 2015. Her technical expertise includes performing air quality modeling analyses for impact assessments, and interpreting model results to help clients make informed decisions. She also performs meteorological data analysis and research, modeling to support litigation projects, emissions inventory evaluations, and technical report writing.

Ms. Alley conducted near-road air quality analyses using dispersion models to support quantitative PM hot-spot assessments for transportation projects, and assessed the influence of roadside barriers on near-road $PM_{2.5}$ concentrations using the EPA R-LINE research model. Ms. Alley also develops ways to examine and explain model results. She developed a database with customizable queries to produce results from CAMx ozone source apportionment modeling simulations, and analyzed downwind ozone impacts from power plant emissions. She also used AERMOD and GIS to develop and evaluate emission mitigation strategies for industrial facilities, and modeled lead deposition impacts in soils from historical facility process emissions. Ms. Alley is an experienced user of several air dispersion models, including AERMOD, AERSCREEN, and the transportation hot-spot models CAL3QHC and CALINE4.

Education

- BS, Meteorology, University of Oklahoma

Memberships

- Air & Waste Management Association
- American Meteorological Society

For a list of publications, see
sonomatech.com/ResPub/LMApub.pdf.

Ms. Alley is experienced in conducting meteorological data analyses to support various air quality assessments. For example, she has quality assured and processed sodar wind profile and ceilometer mixing height measurements collected by STI to support dispersion modeling and air monitor siting near an oil refinery. In another analysis, she processed gridded meteorological model data to support the evaluation of burn rule regulations for the Mojave Desert Air Quality Management District. The analysis was used to demonstrate whether the current rules provide sufficient information to land managers to make burn decisions, and provide recommendations for developing future forecasting rules. She is also experienced at developing and analyzing air parcel trajectories to support pollutant transport analyses.

For emissions assessments, Ms. Alley developed a technical memorandum reviewing roadway dust emission calculation methods and streamlined the quality assurance process for the California Department of Transportation (Caltrans) CT-EMFAC on-road emissions modeling tool. She also is a skilled user of other emissions inventory models, such as EMFAC, OFFROAD, URBan EMISsions (URBEMIS), California Emissions Estimator Model (CalEEMod), and the EPA NONROAD mobile source model.

Prior to joining STI, Ms. Alley was an air quality analyst at URS Corporation/AECOM, where she was involved with permitting and compliance efforts for several industrial facilities. Her main responsibilities were to manage and perform air quality impact assessments for major source Prevention of Significant Deterioration (PSD) permits pursuant to air quality regulations, and develop modeling analyses to assess spatial and temporal impact contributions to the short-term NO_2, SO_2, and $PM_{2.5}$ statistical National Ambient Air Quality Standards (NAAQS) and Significant Impact Levels (SILs).