

Byers Emissions Analysis

ATMOSPHERIC MODELING & FACILITY EMISSIONS ASSESSMENT



TESTING CAPABILITIES

Our state-of-the-art field and lab equipment, including a portable GC-MS, enable a suite of multimodal analytic capabilities including on-site trace gas analysis as well as highly sensitive detection of more than 200 plant volatiles including terpenoids and organic sulfur, oxygen and nitrogen compounds. Following EPA protocols, identification and quantification are based on comparison with NIST authentic standards for more than 100 compounds and can be extended to additional compounds on request.

Additional details of our in-house testing capabilities can be found at byers-scientific.com

SERVICES OFFERED

- Leaf enclosure studies to determine the exact types and quantities of site-specific terpenes and all other compounds emitted from the plant
- Measurement of site-specific Biogenic Volatile Organic Compounds (BVOCs)
- Development of gas-phase emission rates for all strain/site-specific terpenes
- Predict gas-phase concentrations using EPA-approved air quality models
- Analysis of site-specific BVOC contributions to indoor and outdoor air quality
- Custom modeling of site-specific atmospheric emissions to determine contribution (or lack thereof) to air quality concerns or deposition onto nearby agricultural crops (terpene drift)
- Calculated optimal number of air exchanges using Mass Balance Calculator and recommended number of odor control units
- Continuously expanding database of strain-specific terpene profiles
- Expert witness consulting and testimony



DR. WILLIAM VIZUETE, PH.D.

Chief Scientific Officer

Dr. William Vizquete, our Chief Scientific Officer (CSO), has over 20 years of experience in atmospheric chemistry, air-quality modeling and research for various industries. For the past six years, Dr. Vizquete has led a team of cannabis industry experts focused on site-specific research to increase overall knowledge of cannabis emissions, educate local communities and improve the tools and methods that stakeholders use to evaluate the environmental impacts of cultivation and processing. Dr. Vizquete is a sought-after expert witness and frequent speaker on topics of interest to cannabis cultivators, regulators, the scientific community and concerned citizens.



DR. ALEX GUENTHER, PH.D.

Senior Scientist

Dr. Alex Guenther, our Senior Scientist, is an international leader with over 35 years of experience in atmospheric plant volatiles integrated research who has published more than 300 peer-reviewed scientific articles in leading international journals. Dr. Guenther's air quality and emissions models, such as his Model of Emissions of Gases and Aerosols from Nature (MEGAN), are widely utilized by industry, academia, and regulatory agencies such as the EPA. Dr. Guenther's decades of experience and insight help cultivators and policymakers better understand the environmental impacts of cannabis cultivation and processing.