



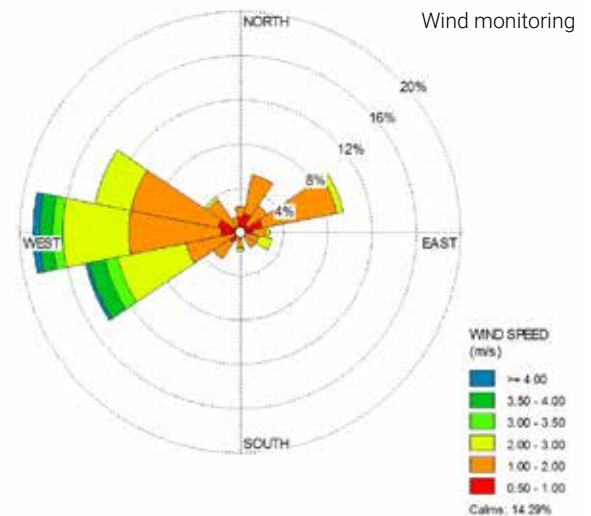
# Atmospheric Sciences

## Air Quality Services

Heightened public awareness and the demands of increasingly complex regulatory requirements have placed air quality compliance issues at the forefront of many businesses' environmental concerns. We have experts across North America and the World to help you navigate the complex and ever-changing air quality regulations and requirements. Our ability to offer a full spectrum of air quality services means that you'll be able to resolve your air quality issues more efficiently and in a more consistent manner.

### Permitting and Compliance

Obtaining and meeting the conditions of a regulatory permit or approval can involve air quality modelling, source testing, and ambient monitoring. Our air quality specialists work closely with other members of our environmental services team to help clients build successful relationships with local regulators. We develop applications, prepare emission inventories and assessment documentation, and produce compliance reports.



### Air Quality Modelling

We use the right model to meet your regulatory needs; a model that is cost-effective and provides the right level of detail. We use AERMOD, CALPUFF, SLAB, and other well-known dispersion modelling systems that are accepted by provincial and state regulators. We also use advanced techniques such as computational fluid dynamics (CFD) to account for complexities associated with transient releases, complex geometries near the release points, and multi-phase physics of the release. We use CFD methods to model sources where conventional models are too conservative or otherwise not applicable. Our high-performance computing cluster drastically reduces run-times for complex air dispersion modelling.

### Emissions Inventories

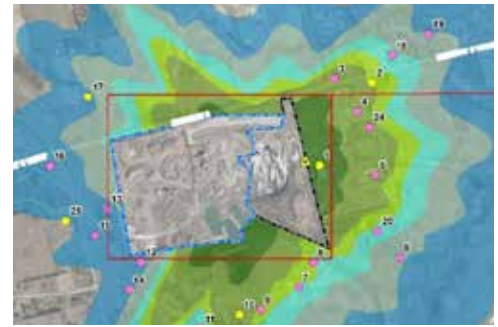
Emission inventories are an accounting of air contaminants that may be released to the atmosphere from specified sources and activities over a period of time. These inventories help our clients better understand the effects that their operations could have on air quality including smog, particulate matter, and toxic air contaminants. This, in turn, helps identify achievable emissions reductions and targets to be in compliance with regulatory requirements. Inventories can be developed for both existing facilities and proposed projects.

### Source Testing

For existing operations, our mobile stack testing teams can be deployed to measure emission rates and concentrations of air contaminants in the exhaust gases released to the environment through stacks, vents or other source types. Our teams measure criteria air contaminants (e.g., nitrogen oxides, sulphur dioxide, particulate matter) and more demanding compounds (e.g., polyaromatic hydrocarbons, dioxins, furans). We also conduct Relative Accuracy Test Audits (RATAs) and Predictive Emission Monitoring (PEM) performance testing with near real time output. Our testing procedures meet the applicable provincial, national and US EPA protocols.

### Ambient Monitoring

Ambient air quality monitoring is often required before construction of a Project to determine baseline conditions; and it may be required during operation to determine your project's contribution to local air quality. We design programs and deploy monitoring equipment that range from simple, smaller projects in remote locations to the more complex with continuous real-time data acquisition for particulate matter, criteria gases, and meteorological elements. Our summary reports identify trends and help interpret the results in the context of your regulatory needs.



Connect with us



**David Boyd, P.E.**  
Technical Leader of Air Permitting, USA  
(262) 643-9155  
[david.boyd@stantec.com](mailto:david.boyd@stantec.com)

**Reid Person, P. Eng.**  
Atmospheric Sciences, Technical Lead, Canada  
(403) 781-4159  
[reid.person@stantec.com](mailto:reid.person@stantec.com)

**Kevin Madry, P.E.**  
Atmospheric Sciences, Technical Lead, USA  
(303) 285-4515  
[kevin.madry@stantec.com](mailto:kevin.madry@stantec.com)