

## Toxicology and Risk Assessment

Perceived and real human health and environmental risks can have a large impact on the amount of money spent on remediation, expansion, or compliance projects. Regulatory programs that are risk-based tend towards protecting public and environmental health by opting for approaches that do not underestimate risk in the face of uncertainty and variability, an approach that often results in overly restrictive regulatory standards and guidelines.

### PROTECTING HEALTH AND YOUR BOTTOM LINE AND REPUTATION

We use an advantageous mix of experienced and qualified staff to protect public health and the environment while helping you protect your bottom line and company reputation. Our staff consists of two senior risk assessors, including a board-certified toxicologist, ecologists, biologists, environmental scientists and engineers, as well as in-house experts in supporting disciplines such as fate and transport analysis, air dispersion and deposition modeling, database management, and litigation support. In addition to our broad U.S. experience, Zephyr staff have also conducted risk assessments and risk-based corrective action (RBCA) in developing countries without prescribed risk assessment guidance or requirements.



### HEALTH EFFECTS AND TOXICOLOGY EVALUATIONS

Having conducted hundreds of assessments for chemicals used in industrial processes and compounds released as unwanted by-products of manufacturing, combustion of fossil and waste-derived fuels, generation of electricity, and petroleum refining, Zephyr has extensive experience in the areas of:

- Soil and Water Exposure and Risk Assessment
- Air Quality Health Impact Evaluation
- Toxicity Criteria Development
- Risk Communication

Zephyr has conducted exposure and risk assessments and/or RBCA evaluations in support of RCRA closures and has substantial experience performing risk evaluations under the Texas Risk Reduction Rule and the Texas Risk Reduction Program (TRRP). We have performed numerous air quality evaluations in which potential risks associated with emissions of sulfur dioxide (SO<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10/2.5</sub>), ozone (O<sub>3</sub>), volatile and semi-volatile organic compounds (VOCs/SVOCs), and metals were evaluated as part of permitting efforts and litigation. However, we do not limit our strategies to the implementation of prescribed guidance, but instead use all available technical and policy options to perform risk assessments and develop toxicity criteria that are both strategic and defensible.

### STRATEGIC APPROACH

While default risk-based screening levels may be adequate for determining whether levels of contamination found at a site warrant no further action or selection of chemicals of potential concern, they are not generally intended for use as cleanup goals or as benchmarks for determining whether health effects are likely to have occurred as a result of a release. Therefore, we do not limit our strategies to the implementation of prescribed guidance, but instead use all available technical and policy options to perform risk assessments and develop toxicity criteria that are both strategic and defensible. To this aim, we closely track the evolution of published toxicity factors so that we are always abreast of new toxicity information and are ready to advise clients accordingly.

*Assisting clients worldwide with their EHS consulting, training, and data systems needs.*

