

REAL-TIME DISPERSION MODELING



Mitigating risk by generating plume-path predictions in real time

When a potentially harmful substance is released into the air – whether the release is planned or accidental, large or small – knowing how the emission will behave helps to mitigate and manage associated risks.



Why Plume-RT?

Plume-RT is a unique software solution from RWDI that helps decision-makers, field operators and regulators respond effectively to planned and accidental release events, from sour gas flaring to smoke from controlled forest fires or crop burns. Plume-RT combines multiple data sources and models to generate realistic predictions of how a plume will travel. It's the only tool of its kind informed by on-site meteorology, air quality data and site-specific weather forecasts as well as advanced dispersion models. The result is exceptionally accurate plume-path predictions, presented in a format that supports timely, informed decisions – including during emergencies.

Diverse Applications

Sour gas flaring.

Plume-RT has been used in multiple Canadian jurisdictions to help operators manage sour gas flaring activities to increase safety and efficiency.

Benefits

- Effective in both flat and complex terrain
- Provides more favourable flaring windows by reducing shut-in periods
- Reduces fuel gas usage
- Lets operators select representative locations for both permanent and mobile SO₂ monitor placement
- Helps manage odour complaints
- Enables evaluation of cumulative effects from multiple SO₂ sources
- Supports prediction of ground-level SO₂ concentrations from pipeline blowdowns
- Allows modeling of additional scenarios (i.e., if release rates and H₂S concentrations are varied)
- Illustrates transient nature of SO₂ dispersion (varied locations, not persistent)

RWDI is a valuable partner to clients seeking to...

Explore Innovations

- Evaluate alternate emissions scenarios and cumulative effects of operations
- Use and direct mobile air quality monitoring equipment

Create Opportunities

- Optimize production while managing emissions
- Free up staff time with more efficient regulatory reporting

Meet Challenges

- Respond to concerns with sound, easy-to-present evidence
- Identify the combinations of emissions and atmospheric conditions that lead to complaints
- Generate timely, high-quality data to support strong emergency response

Fulfill Expectations

- Be ready with excellent incident preparedness protocols
- Make decisions with increased precision and confidence

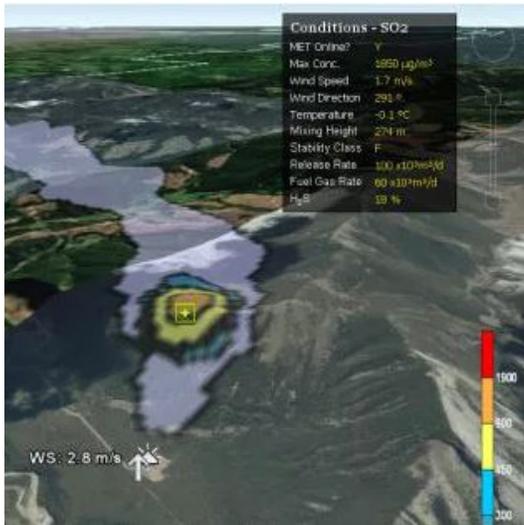
Facility emissions.

Offering a diverse suite of air quality tools, Plume-RT has become the top choice of facility operators seeking emissions management and optimization solutions. The tool interfaces with advanced dispersion modeling techniques, emission scenarios, historical meteorological data sets, weather forecasts, and up-to-date air quality data.

Benefits

- supports emissions management and production optimization programs
- enables odour tracking and management
- supports better incident planning and readiness exercises
- enhances regulatory reporting
- allows evaluation of cumulative effects from multiple sources
- supports evaluation of plant upsets and emergencies
- delivers air quality predictions during facility startup
- produces easy-to-generate air quality graphs





Emergency response.

Any release of hydrogen sulphide (H₂S) into the atmosphere is an emergency. Operators can use Plume-RT to deploy emergency resources efficiently and protect the safety of employees, emergency responders and the surrounding community with high levels of confidence.

Benefits

- automatic plume predictions (H₂S, SO₂) for multiple release rates, weather conditions and ignition times
- option to overlay plume prediction displays against emergency response maps and frameworks (e.g. the Alberta Energy Regulator's ERCB Directive 71 Planning Zones)
- modeling results available every 15 minutes, forecasts up to 48-hours in advance
- support for on-demand, customizable scenario modeling
- interface with regulatory-approved CALMET/CALPUFF and SLAB dispersion models
- fast, remote modeling results to assist emergency responders
- site-specific weather forecasts
- integrated communications with numerous air quality monitoring providers
- ability to direct mobile air quality monitoring equipment
- ability to simulate and test Emergency Response Plans (i.e. tabletop exercises)



Visibility from fires.

Predict impacts from large, controlled burns. Whether the emissions are from a controlled forest fire or a crop burn, Plume-RT can provide smoke and visibility forecasts to support informed decision-making prior to the start of a burn.

Benefits

- smoke/visibility prediction and tracking
- easy-to-generate air quality graphs
- facilitates go/no-go decisions