

A Real-time and Forecast Puff Dispersion Modelling System that Models Accidental Atmospheric Release Events from Rail Cars

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RWDI developed a real-time and forecast puff dispersion modelling system for Alberta Environment called the Emergency Air Monitoring and Assessment System (EAMAS). The intent of the system is to model atmospheric release events in real-time in order to provide emergency response personnel with a visual indication of the magnitude and extent of current and forecasted ground level impacts, and how they will likely evolve. The system is a state-of-the-art, web-based GIS system that integrates: an air quality monitoring network (15 stations); numerical weather prediction using WRF; a release model (HGSYSTEM), and an atmospheric dispersion model (CALPUFF), all coupled together in a user friendly interface. Example release types include: chlorine releases, aqueous ammonia spills, oil/bitumen tank fires and molten sulphur fires. This talk will provide an overview of the system and discuss how it is being used by AESRD. The presentation will focus on the applicability of the technology to assess accidental releases from rail tank cars during loading and unloading activities as well as during a catastrophic derailment scenario.