High Resolution Air Mapping Tool for the Oil Sands Region in Alberta
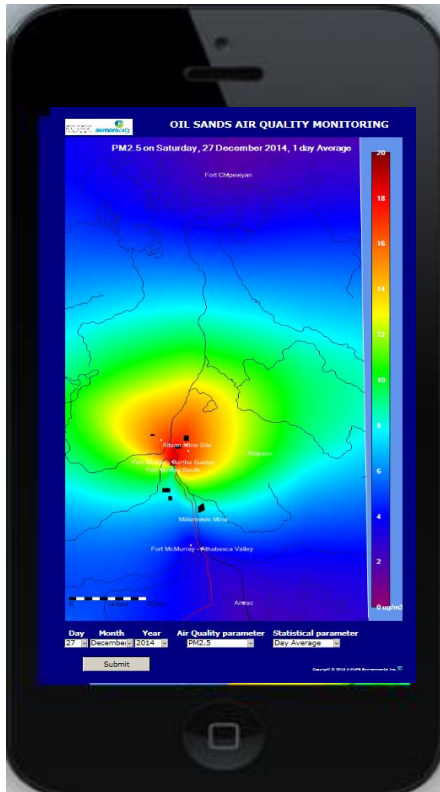
Thompson Nunifu, Long Fu, AEMERA
Daniel Spitzer, A-MAPS Environmental

aemera.org

A - MAPS Environmental Inc.

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Smart-phone App

http://amapsenv.com/AlbertaAQ.aspx

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

WHY?

Impacts of air pollution can be assessed only if the information

- **includes the pollutants distribution in mapping formats (GIS) that can be processed and compared with maps of population density and land use (location of schools, sport facilities, senior housing, hospitals etc.),**

- **is timely,**

- **is validated.**

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

- **Not enough ground base monitoring stations to cover the entire user needs,**

- **Publicly available good coverage data sources such as satellite imagery can be used to fill in data gaps and connect dots,**

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta
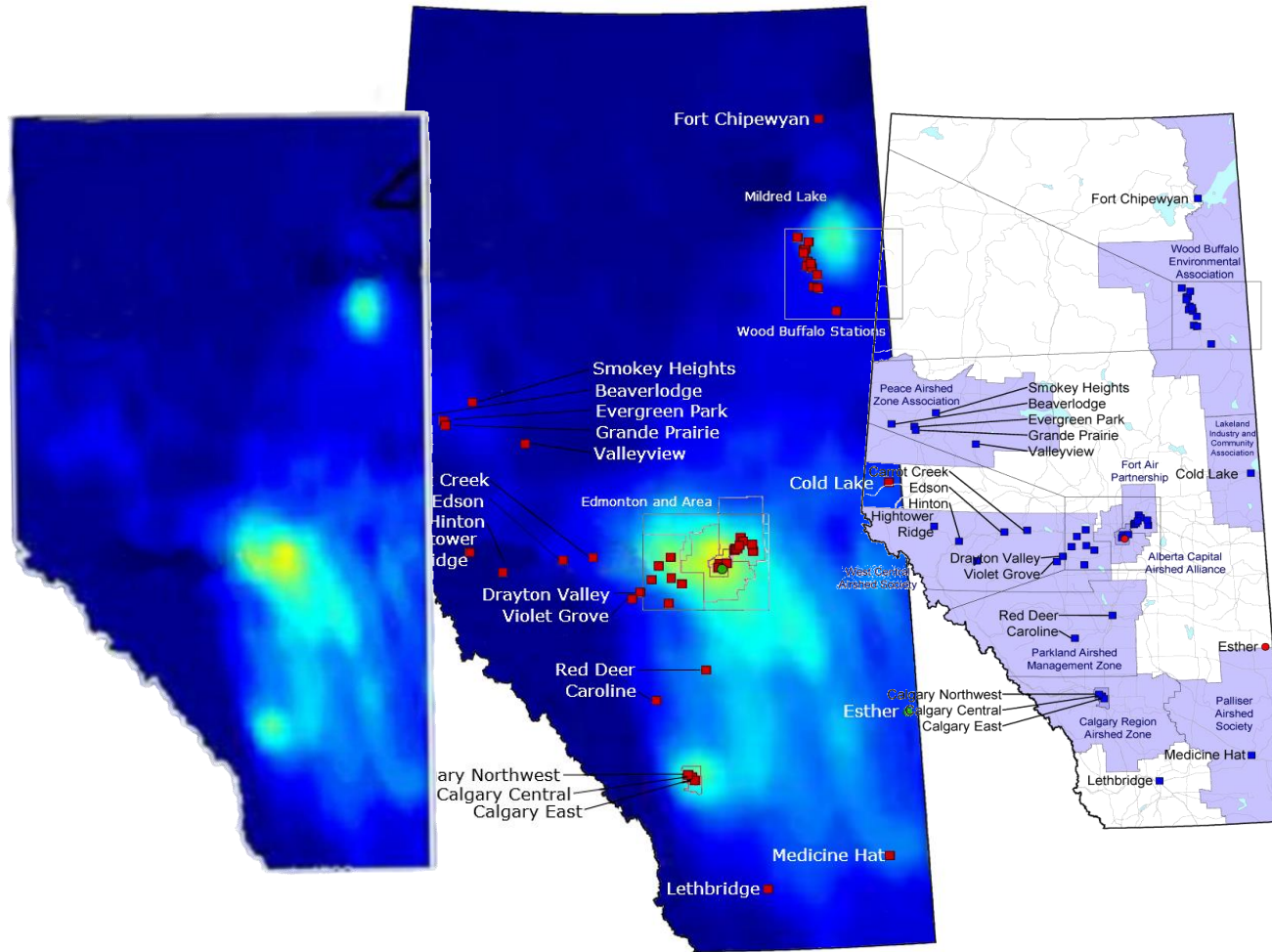
Richer information (data) provided by combining satellite data with ground based data

HOW?

INPUTS

Information sources. Data fusion and modeling

- **Earth Observation satellites (OMI, AIRS, MODIS, TROPOMI)**
- **Monitoring networks**
- **Weather information**
- **Dispersion models**
- **Geospatial interpolation models**
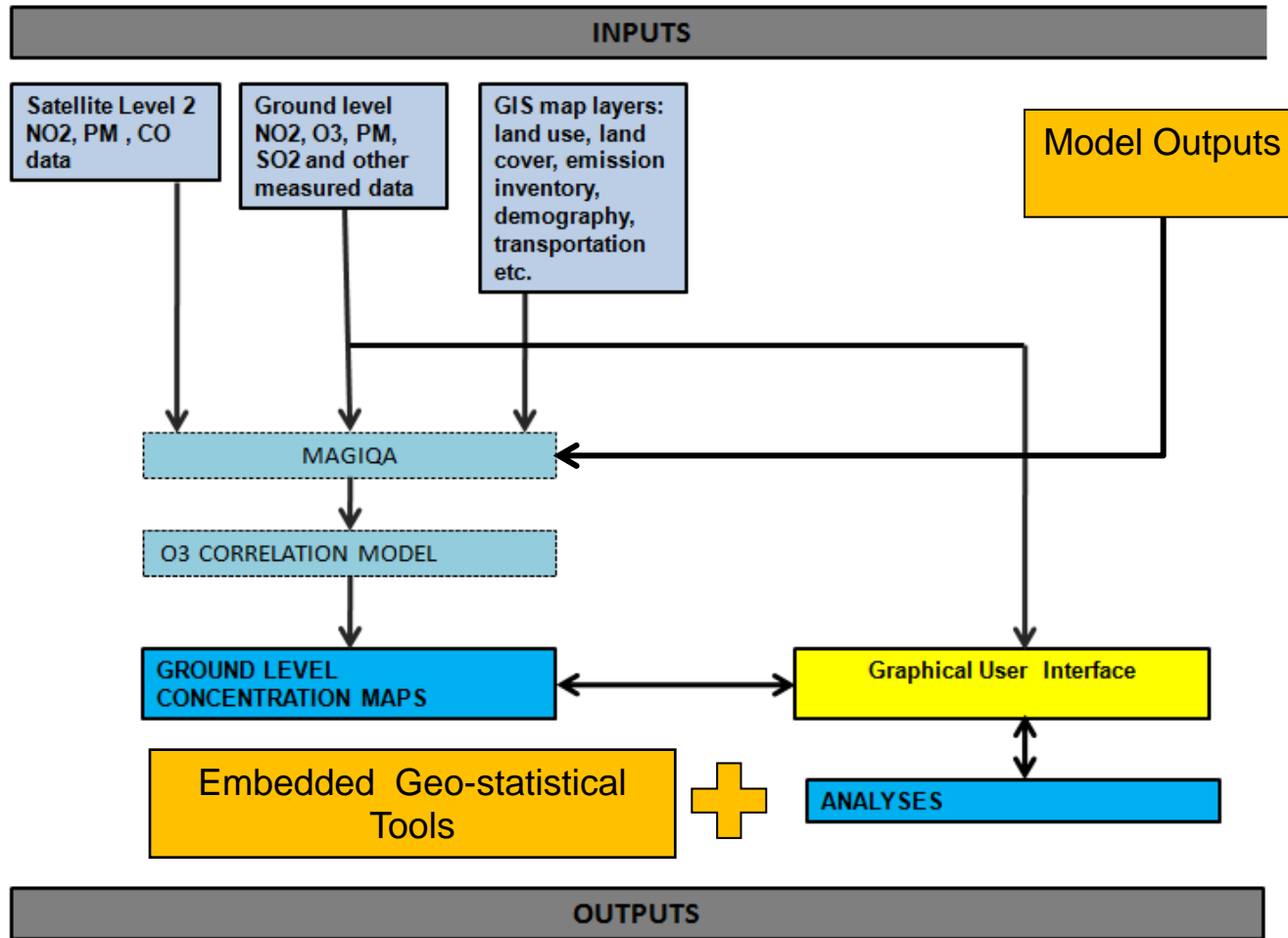- **Forecasting models**

HOW?

Atmospheric Satellite Earth Observations

- **Nitrogen Dioxide (NO_2)**
- **Aerosol (PM)**
- **Ozone (O_3)**
- **Carbon Oxide (CO)**
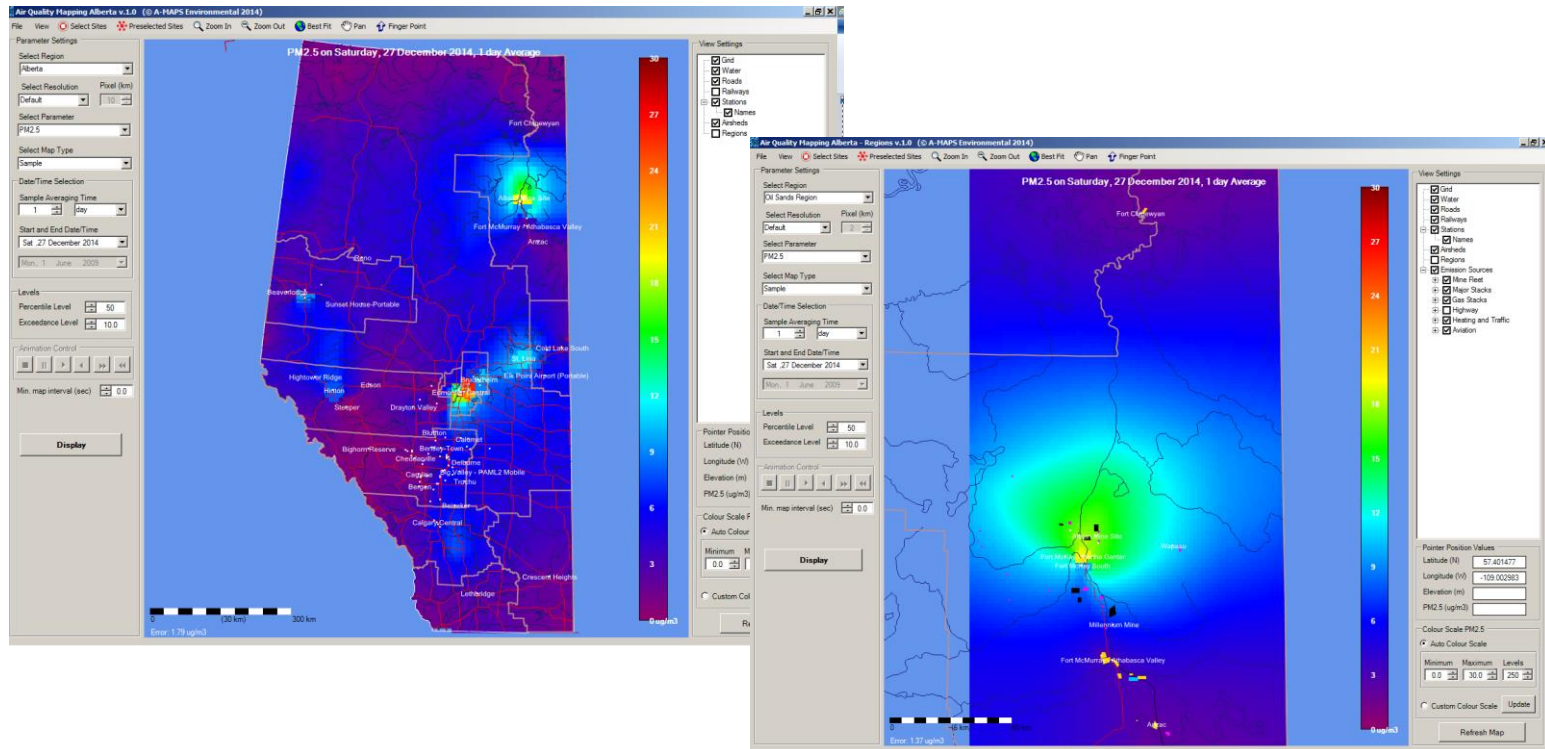- **Sulphur Dioxide (SO_2)**
- **Methane (CH_4)**
- **Carbon Dioxide (CO_2)**

Design and Inputs

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta
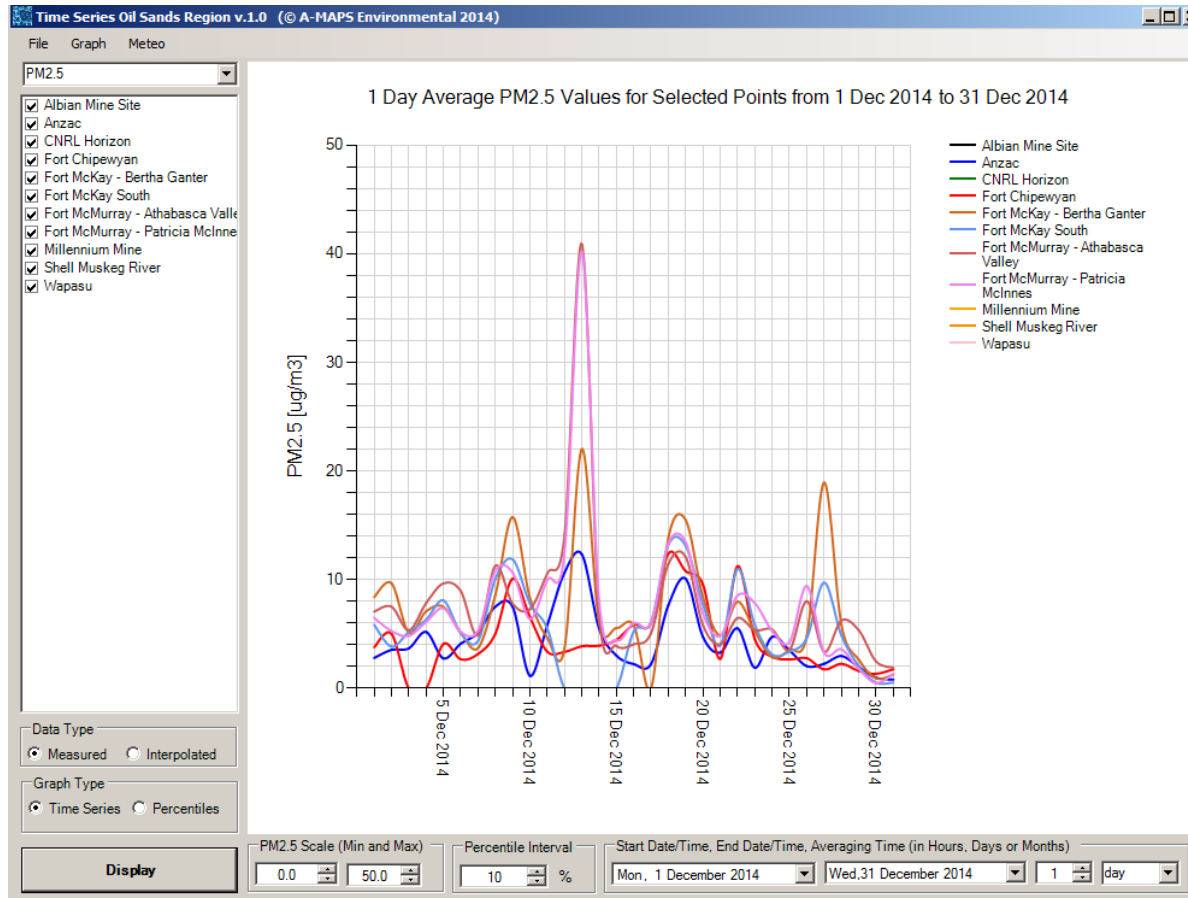
RESULTS

A Suite of Software Applications

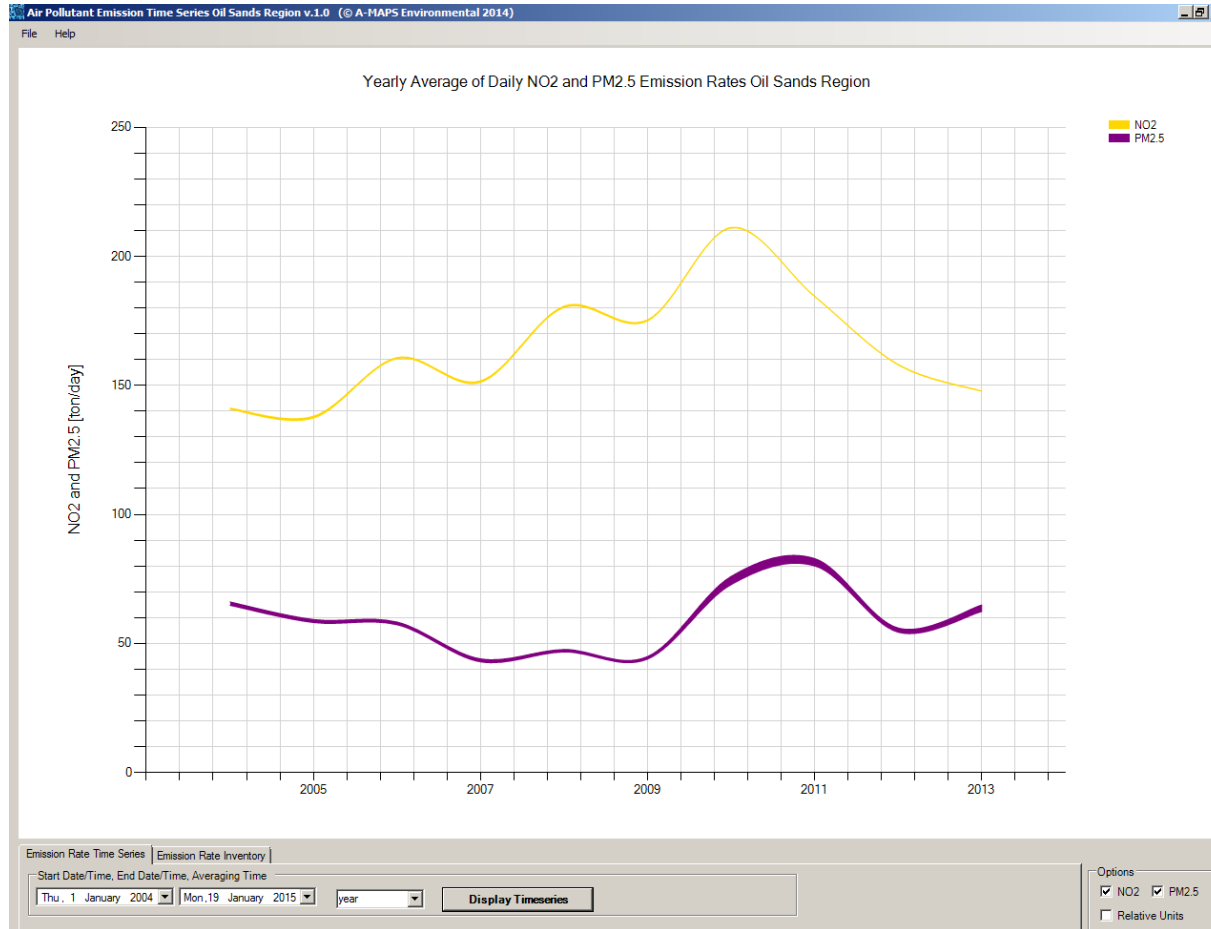# High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Mapping and Analysis of AQ Data: Oil Sands
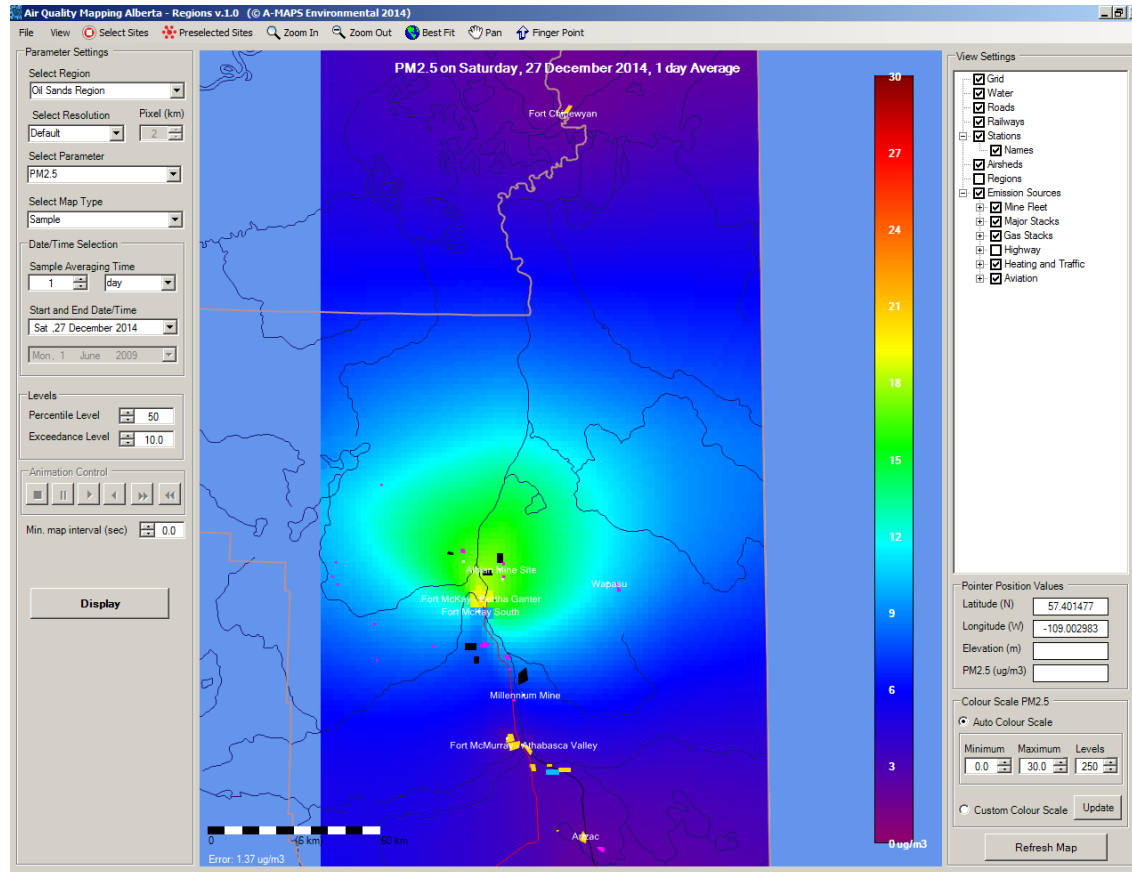
High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Time Series

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Emission Rates

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Data Download, Inspection and QC

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Real Time AQ

Forecasting AQ

High Resolution Air Mapping Tool for the Oil Sands Region in Alberta

Thank You!

Questions?

aemera.org

A - MAPS Environmental Inc.