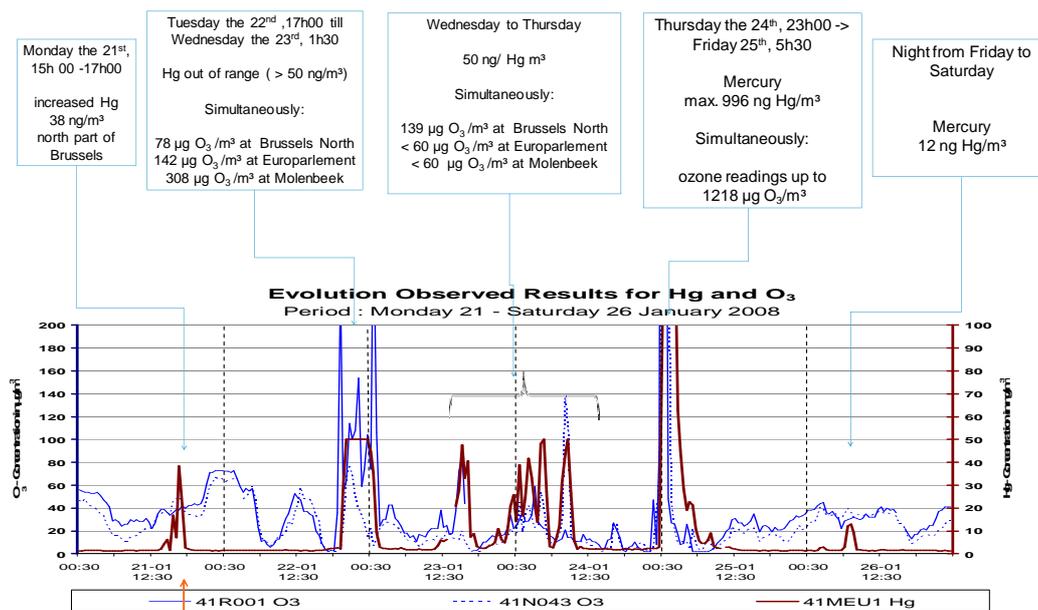


The 2008 Elemental Mercury Vapour Pollution Accident in the Brussels Capital Region: Two Approaches towards Source Identification

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This poster summarizes the most important events during the January 2008 Elemental Mercury Vapour Pollution Accident in the Brussels Capital Region, from problem detection till source identification.



Who is who & where ?

BIME. The Brussels Institute for Management of the Environment for the Brussels Capital Region. Operator of the Brussels air quality monitoring network

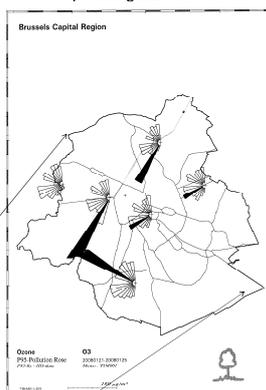
IRCEL. The Belgian Interregional Environment Agency. Co-ordinates air quality information from the three Belgian regions (the Flemish Region, Brussels Capital Region and the Walloon Region) and informs public on air quality issues

VITO. Research organisation of the Flemish government. Has teams on, among others, air quality modelling and environmental analysis (monitoring).



First Approach (BIME)

Analysis of the Hg interfered ozone pollution roses (Figure 2) gave a strong indication that the source area had to be located near the South of the Brussels Capital Region.



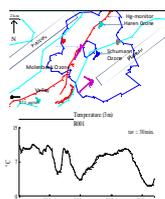
Important human and material means were employed to detect the source. Contacts with the environmental inspection services in Flanders and Wallonia permitted to exclude sources on their territory.

Using their knowledge of the industrial activities in the Brussels Capital Region, BIME mandated a laboratory to perform **emission measurements at potential source locations on January 25th**, among which a battery recycling plant for lead batteries and a sludge incinerator.

Second Approach (IRCEL/VITO)

January 25th: IRCEL contacts air quality modelling group of VITO

09h00: Data transfer of monitor network data
14h00: Very simple conceptual model:



- 1) pollutant roses point towards the valley of the Zenne
- 2) High Hg and (false) ozone only during night
- 3) Sky during entire week mostly covered with clouds, except for some short periods during the nights with high concentrations
- 4) During these moments, temperature at 3m drop quickly

Very simple conceptual model

Mercury plume trapped in the valley of the Zenne during night-time ground inversions.

Measuring strategy to locate source by mobile monitor:

1. Find mobile Hg monitor and/ or mobile UV photometric ozone analyzers sensitive to Hg
2. Enter Zenne valley from the North, drive in zigzag to the South till the plume is found.
3. Next, go further South till no more plume? Next:
4. narrow region where source of plume is present/not present

23h00: Van with monitor drives to Brussels
Saturday, 26th, 04h00: Source located within an 100m x 100 m street block around a battery recycling plant for lead batteries

On Sunday 27th: the plant operator was informed. He voluntarily interrupted the activity until the availability of the emission measurement results.

January 29th. The emission measurements results undoubtedly identified the battery recycling plant, and more specific the melting process, as the origin of the mercury pollution. An investigation started in collaboration with the judicial services. An official report was transferred to the public prosecutor. The judicial investigation is still going on.

No action, Hg monitor located just downwind municipal waste incinerator

January 23th. BIME's Air Laboratory alerts several other services, amongst them :

BIME's Inspection Service, the Interregional Cell for the Environment the Environmental Administrations of the

- Flanders Region in the North
- Walloon Region in the South.

The main objective was to gather relevant information available at different levels, supported by several air pollution experts in order to have as quick as possible a realistic demarcation of the **mercury source area**.

IRCEL informs press agencies and the Environmental Inspection Services in the Flemish and Walloon Region

Breaking news on radio & TV

About Federal Belgium (adjective: Belgian)

Three regions
Brussels Capital Region
Administrative Languages: French and Dutch
Flanders (adj. Flemish)
Language: Dutch
Wallonia (adj. Walloon)
Language: French

Environmental issues, including monitoring and assessment of air quality, belong to the responsibilities of the Regions

