

# Dynamics of emerging organic pollutants from a municipal landfill

Cécile Le Guern, Béatrice Bechet, Alexandra Lepinay, Pierre Conil

► **To cite this version:**

Cécile Le Guern, Béatrice Bechet, Alexandra Lepinay, Pierre Conil. Dynamics of emerging organic pollutants from a municipal landfill. EGU General Assembly 2017, Apr 2017, Vienne, Austria. <hal-01484826>

**HAL Id: hal-01484826**

**<https://hal-brgm.archives-ouvertes.fr/hal-01484826>**

Submitted on 7 Mar 2017

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## *Dynamics of emerging organic pollutants from a municipal landfill*

**Cécile LE GUERN<sup>1,4</sup>, Béatrice BECHET<sup>2,4</sup>, Alexandra LEPINAY<sup>3</sup>, Pierre CONIL<sup>1,4</sup>**

<sup>1</sup> BRGM, Direction Régionale des Pays de la Loire - 1 rue des Saumonières, 44000 Nantes – [c.leguern@brgm.fr](mailto:c.leguern@brgm.fr)

<sup>2</sup> IFSTTAR Nantes, LEE/GERS - Route de Bouaye, CS4, 44344 Bouguenais – [beatrice.bechet@ifsttar.fr](mailto:beatrice.bechet@ifsttar.fr)

<sup>3</sup> LPG-Nantes - Faculté des Sciences et des Techniques, 2 rue de la Houssinière, BP 92208 44322 Nantes Cedex 3 France

<sup>4</sup> IRSTV, FR CNRS 2488 -- Ecole Centrale de Nantes, 1 rue de la Noë, BP 92101, 44321 Nantes

In large cities, municipal landfills may have received waste coming from hospitals, but also green waste. The corresponding anthroposol might thus be a source of organic emerging substances such as pharmaceutical or phytosanitary substances. The occurrence and fate of organic emerging substances from such a former landfill in urban areas has been studied as part of a research program dealing with the observation and the monitoring of the environment. Of the 261 substances sought (30 pharmaceutical molecules, 223 phytosanitary products and 8 other emerging substances), 11 pharmaceutical molecules in particular have been quantified in the leachates, 2 endocrine disruptors (bisphenol A and triclosan) and 10 phytosanitary substances. Most of these substances are found also in groundwater immediately downstream of the site (including carbamazepine) at concentrations ranging between 0.1 µg/l and 10 µg/l. The number of detected substances appears much smaller a few hundred meters far from the landfill (bisphenol A and diclofenac in particular, with concentrations ranging from 0.1 to 1 µg/l and about 0.1 µg/l respectively). Natural attenuation occurs during transfer in the plume, as observed for PAHs or metals. Several mechanisms may explain the natural attenuation of the substances.