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## Mapping former industrial and service activities to anticipate contamination issues for urban planning and redevelopment

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Anticipating soil contamination problems is a key issue for urban redevelopment and planning. Indeed, it is important to avoid unexpected delays and costs as well as bad image in case of unexpected pollution problem. It is also useful in order to optimize soil functions and services. In this frame, we show the interest of mapping historical (potential) sources of contamination, based on the example of (former) industrial and service activities (eg. gas station) that are a main source of contamination in the urban environment of (former) industrial countries. In particular, we present a detailed geographical information system developed in France and its several possible options.

The methodology uses the public existing inventories on (potentially) contaminated sites (basic site knowledge and point localization), completed by deeper archives searches. In this frame, we gather administrative details such as the nature of activities, their date of beginning and duration, the nature of the chemical products/materials used/created by the activities, their address and maps that are collected with great care. We then use a GIS to contour the geographical area of each site after maps adjustment and fill in the associated database. We then adapt the interpretation and visualization options according to the needs of the operating partner (urban developer, planners, city...) and the size of the studied territory. One option for instance consists in digitalizing all the known potentially contaminated sources within each site. Another option proposes an interpretation of the potentially contaminated surfaces in terms of potential contaminants.

The results consists in interactive maps synthetizing information spread in various archives since the 1800s about industrial and service activities. The territorial historic synthesis allows a gain of knowledge compared to the site-to-site approaches usually applied. We will show how this information, easily available thanks to GIS application, is already applied to set up in situ investigations programs preliminary to large redevelopment projects (eg. at district scale) or to anticipate contamination issues during street work (eg. buried infrastructure) and how it begins to be also applied for management of excavated soils.

Although it is impossible to map 100% of the former sites, the knowledge is very useful to limit contamination problems in the way it helps localizing precisely potential point-source contamination sources linked to (former) industrial and service activities. It is complementary to other knowledge on source contamination such as anthropogenic deposits that are another main

source of urban soil contamination.