GEOCHEMICAL BACKGROUND OVER THE PARISIAN BASIN: FROM THE SETTING UP TO THE PRACTICAL USE FOR CIRCULAR REUSE OF EXCAVATED SOILS

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ABSTRACT

With Europe setting recycling targets for construction waste at 70% by 2020, and a significant demand in raw materials, the construction sector represents a major stake for the circular economy. Reuse of excavated soil is one of the components likely to be developed in the Île-de-France and Normandie regions (France). The Great Urban Development project deals with large amounts of excavated soils, which management is likely to be optimised through an offsite reuse for other construction projects. It is now crucial that the quality of the soil at the receiving site is maintained once the excavated material is added.

However, stakeholders of this industry are facing a regulatory gap and a lack of references in terms of offsite reuse and soil exchange between construction sites. A good knowledge of the composition of the soil – for different kinds of areas (residential, industrial…) – will facilitate the study of potential offsite reuse. This geographical understanding of the average concentrations in soil is very useful for a wide range of applications, such as facilitating diagnosis interpretation by experts investigating potentially contaminated sites.

The GEOBAPA project has been supported by the ADEME, by the Île-de-France and Normandie regions and by the French Ministry in charge of Environmental Affairs in order to build a geochemical background baseline for the regions of Île-de-France and Normandie. The GEOBAPA project has been led by SOLTRACING, BG Ingénieurs Conseils, GEOVARIANCES, the BRGM and Althea Ingénierie.

The geochemical background baseline of the Parisian basin is the first multi-regional reference frame providing natural and anthropic compounds' concentrations in soils - including urban zones. The work combines soil quality data from past scientific and urban development projects with data produced as part of this research program, leading to the statistical analysis of more than 3000 pieces of data.

In 2018, the pilot phase has been led to produce the first results of geochemical background over three zones of the Parisian Basin. The presentation will describe methodological choices made to set up the geochemical background and how results can be transferred for practical use. These values have then been tested on real case studies to collect the feedback of using geochemical background values as referential for offsite recovery of excavated soils. These concrete operations allow us to conclude on the operational perspectives for these new referentials, becoming more and more developed: how are they perceived by public owners? How do they modify the understanding of clean soils and their quality over the years? How to communicate results to be used for circular management of excavated soils? How can they influence the amount of potentially reusable excavated soils?