

# Polluted sites and soil



*Changes in regulatory constraints concerning polluted sites and soil require that passive environmental risks have to be incorporated into the management of company assets. It also stresses significantly important modifications to criteria leading to the valuation of both public and private real estate assets.*

The association within GINGER Environnement & Infrastructures of experts in soil chemistry and pollution, hydro-geologists, ecologists and specialists in health risks and classified installations permits the proposal of high-quality technical services to answer each client's specific needs.

All these services are based on efficient mathematical modelling able to quantify transfers in saturated or non-saturated areas.

analyses, etc. The level of the diagnostic is adapted and targeted in a way that takes the intrinsic characteristics of the site and the potential problems into consideration.

## OUR MISSIONS

Our missions cover three media : soil, water and air.

They meet requirements of the national policy framing the management of polluted sites and soil (dated 8 February 2007) issued by the Ministry of Ecology and Sustainable Development and fall within the requirements of the NF X231-620 standard (services concerning polluted sites and soil).

### • Interpretation of the environmental situation

The aim is to insure that the condition of the environments being tackled (soil, water, etc.) is compatible with existing uses (drinking water, industrial use water, recreational use water, etc.).

It uses the elements acquired during the diagnosis to define whether or not a



## KNOW-HOW

The know-how of GINGER Environnement & Infrastructures, combined with the major investigative means available within the group (over 70 exploratory workshops, geophysics teams, laboratory analysis, among others) enables pinpoint or comprehensive assignments to be carried out. Initial diagnosis phases may be followed by other more complete services carried out by soil scientists or hydro-geologists, without changing the client contact, and can finally result in full project management assignments.

### • Conceptual layout

The conceptual layout takes the form of a detailed assessment of the environment and/or the concerned site and is intended to provide an understanding of the potential pollution transfer mechanisms and the way that exposure to substances may take place given the known activities and uses.

The conceptual layout is prepared on the basis of elements acquired during the various stages:

- Visit to the location (site and surrounding environment),
- Historical study,
- Study of the environment's vulnerability,
- Diagnosis: investigations, tests, sampling,



pollution source is under control and has no impact on the environment or, on the contrary, presents a risk for human health.

- **Quantitative Evaluation of Health Hazards (QEHH) and analysis of residual risks**

Using a toxicological approach completed by “modelling”, the QEHH allows the risks generated by the presence of substances detected in the environment to be qualified and quantified.

Within the scope of absolute risk reduction, it should validate that residual exposures to substances in the environment are acceptable.

- **Management plan**

The aim of the management plan is to define the relevant rehabilitation means to be introduced on a given site. This is accompanied by a cost/advantages assessment of the proposed rehabilitation options.

GINGER Environnement & Infrastructures designs and sizes optimal technical and economic pollution removal / rehabilitation

solutions in accordance with the nature of the discovered pollutions, their impacts, and the risks associated with the site’s future projects. This takes place in full compliance with French regulation.

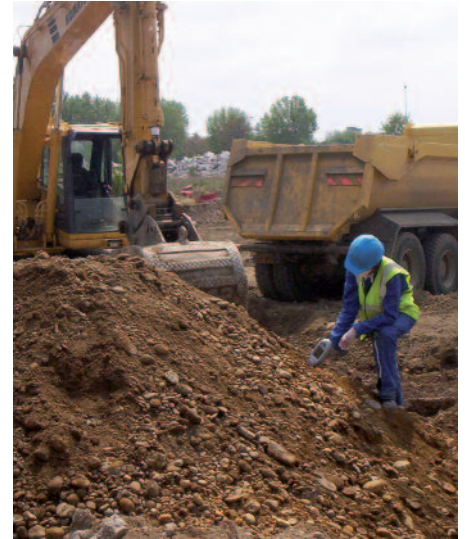
- **Project management for site rehabilitation works**

- **Client consultancy and assistance**

- **The definition, introduction and maintenance of monitoring systems for pollution and/or the effects of environmental rehabilitation**

- **GINGER Environnement & Infrastructures also:**

- Carries out environmental audits within the scope of site transfer / acquisition operations,



- Assists industrial companies in preparing their business discontinuance dossiers and monitors and checks the potential incidence of their sites on the environment (metrology),
- Assesses the pollution of littoral sediments,
- Designs and prepares innovative protocols and frameworks.

## REFERENCES

### Studies - Diagnostics - Risk evaluation

**Soil pollution diagnosis:** several dozen metropolitan sites, FONCIERE LOGEMENT - Vitry-sur-Seine site, SANOFI - Pouget site, CIRMAD Grand Sud.

**In-depth soil pollution diagnosis:** the “Terrasses du Port” site in Marseille, FORUMINVEST.

**In-depth report:** GIAT site in Saint Chamond, EPOA.

**In-depth diagnosis and detailed risk evaluation:** Vauxrot site, Cuffié commune, SAINT-GOBAIN FACTORY.

**Health risk evaluation:** former metal recycling site in Bordeaux - IMMALDI.

**Diagnostic and management plan:** Roanne site, AOS STUDLEY.

**Diagnostic and rehabilitation feasibility study:** Mariolan site - Test de Buch commune, Arcachon local authority.

### Project management - Client assistance

**Rehabilitation project management:** SMTC site in Toulouse, future operation and maintenance centre for the town of Toulouse, TISSEO SMTC - Former Verstraete sawmill in Eu, Haute-Normandie region - Mauvendièrre site in Limoges, OGIC AMENAGEMENT.

**Client assistance for soil pollution cleanup:** former fuel depot in Eysine, CAP ARCHITECTURE.

**Diagnostics, risk assessment and client assistance for rehabilitation:** sensitive site in Fourvière, CITY OF LYON.

**Client assistance within the scope of site transfers/acquisitions:** several sites in France, SEVERINI PIERRES ET LOISIRS.

### Others

**Environmental audits:** 20 sites in France, WOLSELEY GROUP.

**Defining and dating hydrocarbon soil pollution:** Chassieux site, LOUEUR DE FRANCE.



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