Tour de table

Belgium: state of the art of soil remediation

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NATO/CCMS Pilot study
Prevention and Remediation in Selected Industrial Sectors: Sediments
Ljubljana, Slovenia, June 17 – 22, 2007
Legislative framework for soil & groundwater remediation: a complex problem

• Jurisdiction for historical pollution
  – Who is responsible?
  – Who must pay?

• Technical
  – Site investigation & risk assessment
  – Remediation technology at acceptable costs

• General
  – In agreement with policy and legislation on air, water, waste, land use
Why a legislative framework for soil & groundwater remediation?

• Socio-economic rehabilitation of old industrial sites
• Improvement and preservation of environmental quality and human live
• Reduction of effects of land ‘consumption’
As a result, we need

• Legislative framework in the different regions
• At the moment many efforts for homogenisation of efforts on risk assessment and remediation at European level
  – EU groundwater directive, ETAP
  – Platforms: NICOLE, Common Forum
  – Harmonisation of risk assessment methods
Gallia est omnia divisa en partes tres, quarum unam incolunt Belgae

- Flemish Region: 13,522 km² (44%) 5,940,000 inhab.
- Walloon Region: 16,844 km² (55%) 3,250,000 inhab.
- Capital Brussels: 161 km² (0,5%) 964,000 inhab.
Flemish region

- 22 February 1995: Flemish soil remediation decree
- 5 March 1996: Execution of the VLAREBO
- 2006: Adapted decree
Flanders: identification of contaminated sites

1. List of high risk activities
2. Registration of contaminated sites
3. Community inventory of sites and activities with high risk

> 100,000 potential contaminated sites
Flanders: new and old pollution

- **New pollution (after 1995)**
  - Immediate need for remediation in case of trespassing the Soil Remediation Criteria
  - SRC are based on:
    - Nature
    - Agriculture
    - Residential
    - Recreation
    - Industry

- **Old pollution (before 1995)**
  - Need for remediation in case of
    - Risks
      - Ecological
      - Human exposure
      - Risk of spreading
    - Designation of the site by the Flemish government to OVAM
      - Brownfields
Flemish region: remediation study

- Identification of contaminated site
- Preliminary investigation
- Descriptive examination
- Soil Remediation plan
- Financial guarantee
- Remediation activities and monitoring
- Final evaluation
New decree and rules

- Phasing of remediation process
- Prioritisation
- Flexible procedures (Preliminary and Descriptive Investigation)
- Soil protection (funding-prevention)
- Sediment issues
- Damage claims regulation
- Risk-based remediation
- Sector funding (BOFAS, VLABOTEX)
- Limited Soil Remediation Project
- Financially acceptable/restrictions in use
- BATNEEC-based
Soil remediation techniques

**Ex-situ:** 2059

**In-situ:** 914

**Isolation:** 95

- Civil technical
- Off-site
- On-site
- Landfilling

- Soil vapour extraction
- Air injection
- PRB
- Bioremediation
- Immobilisation/neutralisation
- Chemical oxidation
- Steam injection
- Biological surfactants
- Groundwater recirculation
- Co-solvent flushing

(excl. P&T: 1901 projects of which 33 with re-infiltration)
Capital of Brussels

• 13 May 2004: Ordonnance on contaminated sites based on:
  – Need for (construction) sites
  – Combination of very old contaminations and new contaminations
  – High degree of economic rotation
• 9 December 2004: execution
• 2007: New ordonnance on contaminated sites
Capital of Brussels

• 9 December 2004:
  – List of risk activities
  – Standards at which a risk evaluation study must be started
  – Method for risk evaluation
  – Criteria for assimilation of old soil investigations
  – Changes concerning decree on gasoline stations (BOFAS)

• 20 January 2005:
  – Circular concerning transactions of polluted or presumed polluted soil
  – Vademecum concerning content of projects and reports
Capital of Brussels

1. Based on removal of risks for
   – Human health
   – Environment
   – Dispersion

2. Difference between historical and new pollution

3. Inventory of high risk activities (> 7000 sites)

4. At stopping of activity or any change of activity or by selling.
Capital of Brussels

- 1022 Preliminary soil investigations
- 497 Risk evaluations
- 233 remediation plans
- 17 000 soil attestations
Walloon region

• Objectives
  – Accelerate the redevelopment of large contaminated sites
    • Needs for space
    • Green image
    • Needs for soil investigation and screening
    • Needs for treatment procedures
    • Needs for prioritisation
  – Improvement of environmental quality
  – Deliver garancy to new land owners
Industries
Vapor Machine
Cockerill
at the national exhibition,
(1875)
The Brownfield situation in Wallonia: density distribution per municipality

Total: 1,801 sites needing « rehabilitation »
(5,952 ha)
Walloon region

+ project of enforcement decree on Soil Screening Values and soil remediation experts

To date : the law of 01/04/2004 is not in force yet

Brownfield site Carcoke in Tertre
Walloon region

30/08/2005: « Marshall Plan »: a political programme for the economical revival of the Walloon Region

« Measure 2.6. : brownfield reclamation »

Budget: 343 Million Euros

- Reclamation of 100 derelict sites presumed as « unpolluted » or « weakly polluted »: budget 100 Million Euros
- Reclamation of 24 polluted brownfields (SPAQuE): Budget: 243 Million Euros
Walloon region

✓ 30/08/2005: « Marshall Plan »: a political programme for the economical revival of the Walloon Region

✓ 23/02/2006: « Programme-Law » for economical revival and administrative simplification

That « simplifies » the administrative procedures for brownfields (modification of the law of 01/04/2004)

Sites that have priority according to the government views (SRPE): no permits needed
Walloon region

✓ Various:

• **Registration of contaminated sites**: inventory still limited to brownfields and uncontrolled waste deposits
• **List of risk activities**: proposal
• **Technical guidance**: various guides are ready and submitted for consultation; others are still in progress
• **Remediation techniques**: a method is under development aiming at furnishing a methodological framework for the selection of the best appropriate techniques
Walloon region

✓ Various:

• **Partnership programme 2004-2006** between Walloon Region, Brussels Region and Quebec for the « sustainable remediation of contaminated sites »: various key-elements for improving the current practices (global strategies, decision tools, remediation techniques) have been identified.
A second phase of the project (2007-2009) should be initiated soon.
(See: [www.assainissementsoutenablespaque.be](http://www.assainissementsoutenablespaque.be))
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