



Soil remediation of (former) dry cleaners in Flanders: VLABOTEX npo

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Overview

- Soil remediation of dry cleaners – Problem
- Aims of VLABOTEX
- Financing of VLABOTEX
- Soil remediation by VLABOTEX
- Examples of integrated approach
- Bottlenecks



Soil remediation of dry cleaners – Problem (1)

- Dry cleaners use solvents in cleaning process
 - past (before 1950): naphtha, white spirit
 - now: > 90 % tetrachloroethene (PER or PCE)
- Contamination (mostly in the past):
 - spills with PCE and PCE containing waste (sludge)
 - overfilling of the dry cleaning system
 - leakage of the sewer system (contact water)



Soil remediation of dry cleaners – Problem (2)

- Soil- and groundwater contamination with PCE and its degradation products:
 - Trichloroethene (TCE)
 - Dichloroethene (DCE)
 - Vinylchloride (VC)
- Dry cleaners:
 - small companies in urban area
 - presence of building, habitation



Soil remediation of dry cleaners – Problem (3)

- Chlorinated solvents: specific properties
 - denser than water, volatile, DNAPL, toxic
- Cost of the soil remediation often exceeds
 - financial strenght
 - value of the property

⇒ soil remediation difficult and expensive
abandoned sites (black- or brownfields)



Soil remediation of dry Cleaners – Problem (4)

- After years of negotiations between OVAM and the professional federation (FBT) with the following starting points:
 - limited financial strength of the sector / individual applicant
 - ‘the polluter pays’ principle

Solution: soil remediation organization



⇒ September 14, 2007: VLABOTEX npo
recognized by the Flemish Government



Aims of VLABOTEX

- Carry out soil remediation of contamination caused by (former) dry cleaners
- Stimulate research on innovative soil remediation techniques
- Advise dry cleaning sector in order to prevent soil contamination and to remediate existing soil contamination
- Make up the sectoral contamination prevention and -management plan (sectoral BPBP) for the affiliated dry cleaners



Financing of VLABOTEX (1)

- Financial contribution of the applicant
 - contamination with solvents caused before october 1995 ('historical' contamination) **FIXED CONTRIBUTION**
 - active professional in textile care:
 - average yearly contribution: 4.488 EUR
 - average total contribution: 134.651 EUR
 - former dry cleaning site:
 - average yearly contribution: 7.038 EUR
 - average total contribution: 211.166 EUR



Financing of VLABOTEX (2)

- Contamination with solvents caused after october 1995 ('new contamination) **AND** contamination with other pollutants
 - o fully paid by the applicant
- Yearly subsidies of the Flemish Government
 - equals the sum of the contributions for the historical contamination with solvents



Soil Remediation by VLABOTEX (1)

- Guideline for investigation and remediation of chlorinated solvents caused by (former) dry cleaners
- Lessons learned from the past
 - distinction between core zone – plume zone
 - bulk of contamination (pollutant mass) in core zone
 - in the past: too much focus on groundwater concentrations
 - conceptual site model (CSM): not self-evident
 - need of a cost-efficient approach (limited financial resources)
 - best available techniques (BATNEEC evaluation)



Soil Remediation by VLABOTEX (2)

- Yearly VLABOTEX has to submit a remediation program for approval:
 - estimated financial resources
 - Priority Index (PIP):
 - human-toxicological aspects
 - acute risks (human health, groundwater,...)
 - potential risks
 - environmental aspects



Soil Remediation by VLABOTEX (3)

- economical aspects
 - site redevelopment / demolition (to facilitate remediation)
 - creation / maintaining employment
 - other economic advantages
- social aspects



When economical or social aspects are relevant:
PIP-acceleration is possible



Soil Remediation by VLABOTEX (4)

- Descriptive soil investigation (BBO)
 - Already completed or ongoing 43
 - Planned 2013 5
- Soil remediation project (BSP)
 - Already completed or ongoing 19
 - Planned 2013 19
- Soil remediation works (BSW)
 - Already completed or ongoing 6
 - Planned 2013 10



Soil Remediation by VLABOTEX (5)

- After affiliation: a transfer of land (e.g. a sale) is possible
 - procedure determined by Ministerial Order (article 164 Soil Decree)
 - in combination with a PIP-acceleration:

⇒ sale, remediation and redevelopment can be integrated
(aligned)

Example (1) - Bruges



Example (2) - Aalst



Example (3) - Tremelo





Bottlenecks

- Former dry cleaning sites:
 - difficult to contact, convince and persuade the owner(s)
- Still a significant total contribution to be paid by applicant:
 - active professional in textile care: approx. 135.000 EUR
 - former dry cleaning site: approx. 211.000 EUR
- Total contribution > value property
 - ⇒ VLABOTEX no answer (blackfield)

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