

Area oriented approach to groundwater contaminations in light of WFD/GWD

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Tauw



Content

- Which problems do occur according Dutch law when remediating a large scale groundwater pollution?
- Can an area oriented approach improve this situation?
- How is an area oriented approach related to WFD/GWD?
- Conclusions
- Points of concern



What do I mean by an area oriented approach?

Remediation of polluted groundwater in a designated area based on:

A. Contamination situation

B. Spatial planning and other spatial developments

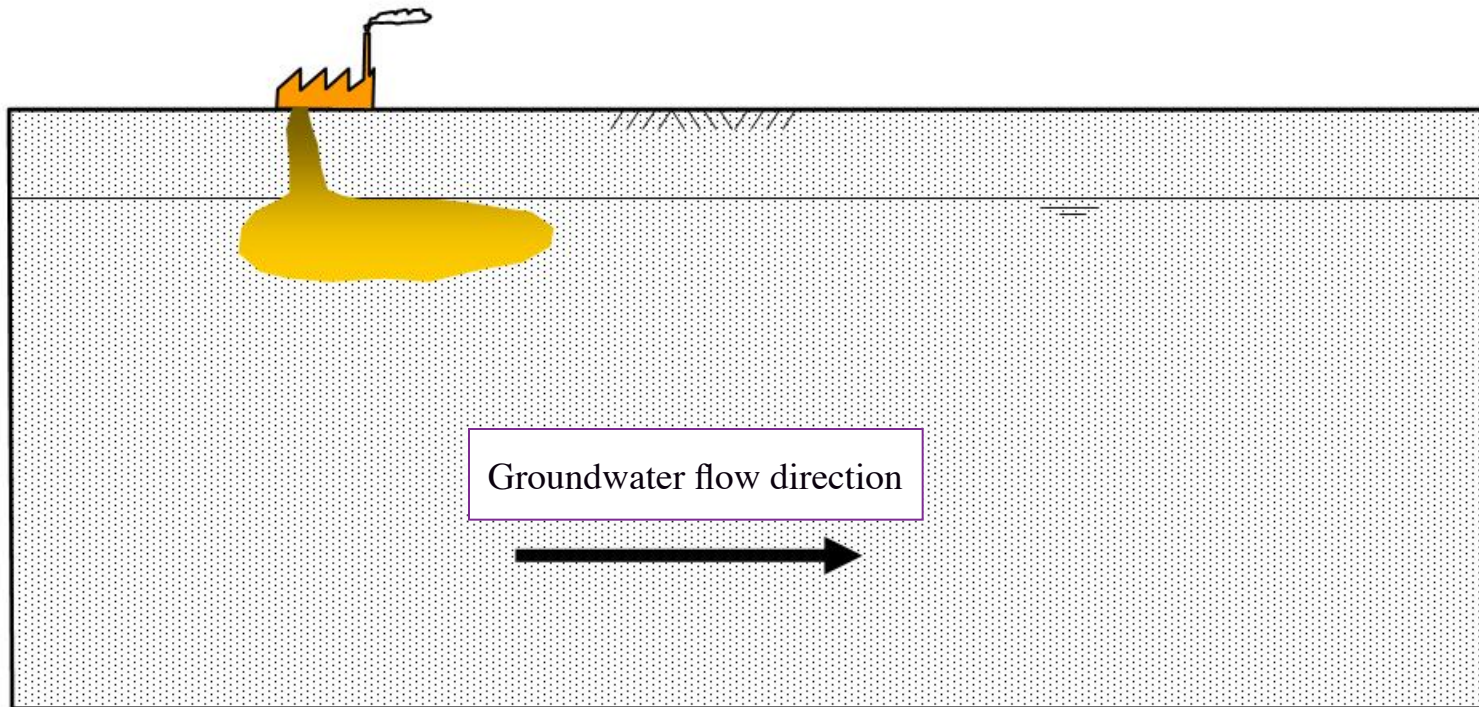


Case criterion

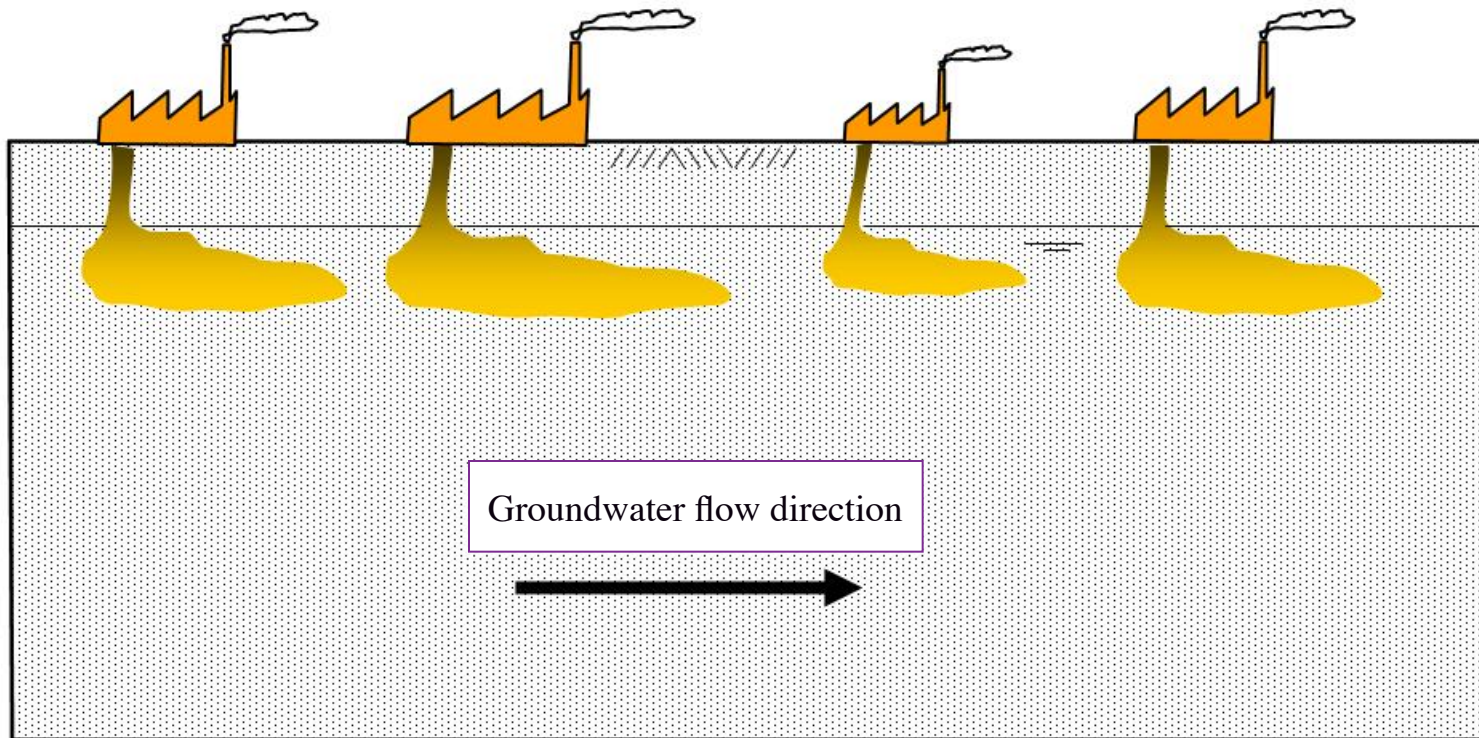
‘A case of soil contamination or a risk of soil contamination covering areas, which due to the contamination, the cause or the outcomes of the contamination get associated with each other in a technical, organizational and spatial sense.’



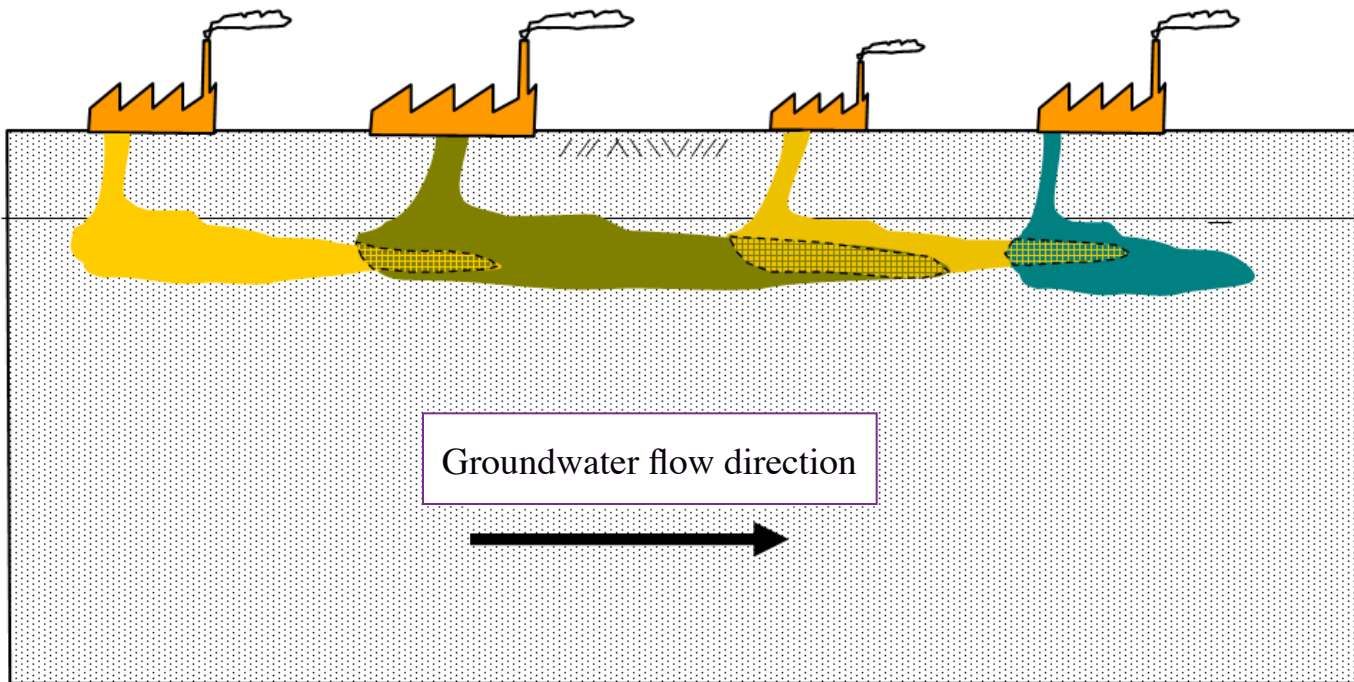
Standard case



Interaction version



Mix version



Some difficulties

- Comprehensive and detailed investigation
- Counter-measures (high costs)
- Identifying the polluter (cost recovery)



Area oriented approach par. 3b Chapter IV Soil Protection Act (2012)

- An approach which is oriented to the remediation of several contaminations of the deeper groundwater in a designated area (risk management zone)
- Area designation by the authorities (large freedom of assessment)
- Execution by the authorities with a goal of:
 - Preventing the risks of the contamination spreading outside of the designated area
 - Protecting the existing and intended usage functions within the area
- Participation on a voluntary basis



Some advantages

- Decreasing the dominant role of the case criterion
- Less investigation
- Less costs
- More room for balancing interests in the decision making process
- Acceleration spatial developments
- Indemnification under Public Law



Some disadvantages

- Voluntary participation
- Execution and enforcement (free-riders)
- Linkage between source-pathway-receptor
- Liability under private law is unchanged



Area oriented approach to contamination in relation to European Law

- Water Framework Directive (2000/60/EG)
- Groundwater Directive (2006/118/EG)



Environmental objectives for groundwater (Article 4 WFD)

- Prevent or limit the input of pollutants into groundwater
- Achieving good groundwater status
- Reversing a significant and sustained upward trend in the concentration of any pollutant



Requirements

- Good chemical status of groundwater
 - European groundwater quality standards: nitrates, pesticides
 - National threshold values (Netherlands): nickel, cadmium, lead, arsenic, chloride and phosphate
- Prevent or limit
 - Hazardous substances
 - Other substances



Good chemical status of groundwater

- Environmental quality standards and threshold values
- Groundwater body
- Exemptions e.g. (art. 4 WFD):
 - Deadlines may be extended
 - Less stringent environmental objectives
 - Temporary deterioration



Prevent or limit

- Input of pollutants into groundwater: direct or indirect introduction of pollutants into groundwater as a result of human activity
- Spreading of existing contamination before reaching a stable end-point
- Exemptions (article 6 (3) GWD)



Conclusions

- An area oriented approach can be an effective instrument for addressing a large scale groundwater pollution
- WFD and GWD offer enough room for implementing an area oriented approach combined with natural attenuation under the exemptions in article 6(3) GWD



Some points of concern

- Source zone
- Risk of spreading of the plume (outside of the area)
- Financing (cost allocation)
- Decision making process (several stakeholders)
- Providing information (confidentiality)
- Voluntary participation (free-riders)

