Fire at Chemie-Pack

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Introduction

- Chemie-Pack, Moerdijk
- Fire
- Environmental damage
- Remedial measures
- Costs
- ELD
- Lessons learnt
- Follow up
Chemie-Pack, Moerdijk

- 50 employees
- Activities: storage, blending, filling and packaging of chemicals: powders and fluids
- ELD, Annex III, category 7a
- Seveso establishment
Moerdijk
Chemie-Pack, Moerdijk
Intermediate Bulk Containers (IBCs)
5th January 2011
Pollution of local waters
Remediation in phases

1. Cleaning up Chemie-Pack (above the ground)
2. Groundwater protection system and construction of water purification installation
3, 4 and 5. Remediation of land damage at neighbouring companies and public area
6. Remediation of land damage at Chemie-Pack
7. Remediation of groundwater pollution
Cleaning up
Groundwater situation

Verspreidingspatroon verontreiniging indien geen actieve maatregelen worden getroffen

- Neerslag
- Voormalig gebouw Chemie-Pack
- Groenstrook
- Spoorlijn en Vlasweg
- Sloop
- Industrieterrein
- Riolering
- Damwand
- Bedrijfspand MVO
- Depot
- Zand (0 - 3 m-mv)
- Kleilaag (3 - 4,5 m-mv)
- 1e watervoerende pakket (4,5 - 8 m-mv)
- Klei/veenlaag (6 - 9 m-mv)
- 1e watervoerende pakket (vanaf 9 m-mv)

- Grondverontreiniging
- Grondwaterverontreiniging
- Contour bluswater en -schuim met cocktail aan chemische stoffen

- Verspreiding in grond
- Biologische, chemische en fysische processen in grond
- Verspreiding in grondwater
- Biologische, chemische en fysische processen in grondwater
- Verontreinigingscontour als geen actieve maatregelen worden getroffen

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Groundwater protection
## Costs environmental remediation measures

- Total costs of environmental remediation are estimated **€ 65,4** million (direct costs of processing water for fire extinction, cleaning up above the ground, soil remediation (x million):

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>land damage</td>
<td><strong>€ 38,2</strong></td>
</tr>
<tr>
<td>waterbed pollution of ditches</td>
<td><strong>€ 13,5</strong></td>
</tr>
<tr>
<td>cleaning up above the ground</td>
<td><strong>€ 9,6</strong></td>
</tr>
<tr>
<td>management of fire extinction water</td>
<td><strong>€ 2,5</strong></td>
</tr>
<tr>
<td>waterbed pollution port</td>
<td><strong>€ 1,6</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>€ 65,4</strong></td>
</tr>
</tbody>
</table>
ELD implementation in the Netherlands

- ELD has been implemented in the Environmental Management Act
- Guidance document on measures in case of environmental damage or imminent threat
- Helpdesk, website, web application
Chemie-Pack and ELD

- ELD: Threshold forms a complicating factor, especially for land damage
- Other, pre-existing environmental legislation has a parallel effect, e.g. Water Act, Soil Protection Act
- All the obligations that follow from the ELD have been respected (prevention, remediation, cost recovery) by the competent authorities
- Cost recovery will be very difficult due to bankruptcy; mandatory financial security would not have helped much
Lessons learnt

- Use of open fire (explicitly prohibited in permit)
- Large quantity of inflammable substances
- Starting fire could not be extinguished by Chemie-Pack

- Process of permit issuance: too much accommodating attitude
- Compliance and enforcement: pattern of insufficient safety management by Chemie-Pack
- Unannounced on site inspection visits
- Integrated (safety) inspection for Seveso companies
Follow-up

- No regret measures for Seveso companies: legal basis for:
  - quality criteria for inspectors and for inspection agencies
  - national enforcement strategy: uniformity and enforcement guarantee
- Seveso inspection database will also include compliance and enforcement information
- Development of Regional environmental agencies > specialization for Seveso establishments