Neighbourhoods session

Sludge management

“Should wastewater sludge treatment be centralized?”

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3rd International CD Workshop: Sludge management

Szczecin, 7 June 2017
Fate of sludge

FERTILIZER
- N, P, K, Mg, ..
- Organic fertilizer
- Cheap

WASTE
- Organics
- Pathogens
- Heavy metals
- Drugs, hormones
What is centralisation of sludge management?

**Introduction to session**

Centralization topics in previous workshops

- Grevesmühlen WWTP
  - Achieving positive energy balance
- Zdroje and Pomorzany WWTP in Szczecin
  - Single incineration unit used for both plants

**SEWAGE SLUDGE HANDLING**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concentration (mg/kg DS)</th>
<th>Concentration (mg/kg P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cd</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Cu</td>
<td>900</td>
<td>21 400</td>
</tr>
<tr>
<td>Ni</td>
<td>50</td>
<td>1 400</td>
</tr>
<tr>
<td>Pb</td>
<td>100</td>
<td>1 600</td>
</tr>
<tr>
<td>Zn</td>
<td>2 500</td>
<td>800</td>
</tr>
<tr>
<td>Hg</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Cr</td>
<td>300</td>
<td>2 100</td>
</tr>
<tr>
<td>Ag</td>
<td>5</td>
<td>180</td>
</tr>
<tr>
<td>As</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Ti</td>
<td>1.5</td>
<td>-</td>
</tr>
<tr>
<td>U</td>
<td>50 mg Uran/kg P2O5</td>
<td>-</td>
</tr>
<tr>
<td>B[a]P (Benzo(a)pyren)</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>PCB (Polychlorinated Biphenyls)</td>
<td>0.1</td>
<td>2</td>
</tr>
</tbody>
</table>
Discussion

Should sludge treatment be centralised?

• EXISTING situation:
  • Estonia - increasing, however complicated when different companies are operating the plants;
  • Germany – it is a common practice for associations;
  • Latvia - no good examples;
  • Poland – for small plants, no real co-operation between cities;
  • Sweden - all sludge used for agriculture, voluntary sludge certification system is established, centralisation only within the same operator.
• Conclusion: generally, centralisation is established in different extent and for different size of plant, however, sludge treatment strategies, goals and usage are very different.
Discussion

Statements during the discussion:

• Centralisation of sewage sludge treatment is beneficial and should be carried out at least for the small-scale plants.
• Regulations are missing or are currently being made – there is no clear perspective on which direction to go.
• Clear rules should be established in order to increase centralisation.
• Decision makers have to make clear rules on national (governments) and international (EU, HELCOM) levels.
• A good master plan (on national or regional level) is essential for establishment of centralisation.
Discussion

Questions discussed, but no clear statement was formulated:

- By which party should it be regulated between the sludge donor and recipient?
- Should it be regulated only on economic basis?
- Should centralisation be supported (tax benefits etc)?
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Thank you!