



DHI SOLUTION

MANAGEMENT AND REGULATION OF INDUSTRIAL POLLUTION SOURCES

Mapping • Critical pollution sources • Monitoring • Control systems

Prevention and reduction of discharges of hazardous substances are crucial in a number of ways, such as protecting processes in urban wastewater treatment plants. It can also help ensure high enough sludge quality for agricultural application as well as protect the occupational health of sewer workers and the health and environmental conditions in receiving waters. Our knowledge and practical experience can help you identify the possibilities for reuse through Best Available Techniques (BATs), lab, pilot, and full scale experiments, pollution control systems and other related measures.

MAPPING OF WATER FLOWS

Reducing consumption of water and discharge of polluted wastewater requires mapping of the system and a thorough understanding of the various industrial production processes – from inflow to outflow. It also requires careful monitoring of the processes, sampling, analyses and on-line monitoring (including sensors which can detect instant changes in conditions). The on-line monitoring and analytical data from water sampling provide the data necessary to identify the water streams which can be most easily treated and reused in another phase of the production process.



Anaerobic sludge digestion tanks at Lynetten Wastewater Treatment Plant.

SUMMARY

CLIENT

- Industries
- Environmental authorities
- Wastewater utilities
- Consultants and contractors

CHALLENGE

- Exceeding requirements related to public sewer systems, wastewater treatment plants (WWTP) and environmental regulations
- Inadequate treatment of wastewater
- Losses of valuable raw material and additives

SOLUTION

- Mapping of water and wastewater flows
- Identifying and classifying the most hazardous substances
- Use of Best Available Techniques (BATs) to ensure reuse and recirculation of water and substances
- Tailor-made test set-up on the lab, pilot, and full scale
- Monitoring and control systems
- Providing recommendations on discharge requirements

VALUE

- Fulfilment of environmental requirements
- Enabling the reuse of water, raw materials and additives
- Reduction in operational costs

With our expertise, we can help you identify the most potential water flows to treat and how to handle these in an appropriate way. This will reduce discharge of hazardous substances, reduce costs for water consumption, and ensure that environmental requirements are fulfilled.



Activated sludge tank.

BEST AVAILABLE TECHNIQUE (BAT)

High efficiency and operational stability at the lowest possible investment and operational cost are always the top priority for an industry. When attempting to achieve this goal, industry must comply with associated environmental requirements. Optimisation of eco-efficiency is continuous process in manufacturing industries.

Using our experiences from a large number of trade and industrial sectors, we can outline monitoring data and international guidance on BAT proposals concerning potential treatment techniques. The next step is often laboratory and pilot plant experiments which provide data for the design of treatment facilities and estimates of construction and operation costs.

LAB, PILOT, AND FULL SCALE TESTING

Test and demonstration of new and known treatment technologies in new applications is the best way to:

- obtain a solid understanding of the involved mechanisms
- optimise and improve treatment efficiency

Tests very often start at the lab scale and in a DHI laboratory, special design set-ups are used for the first assessment of process efficiency and performance. Studies may be taken further from laboratory scale to pilot scale test. Sensors and IT-systems for monitoring improve possibilities for documentation and development of treatment processes. We can also provide full scale tests and pollution management in large industrial complexes and industrial estates.

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TEST FACILITIES

We have experience with designing and building test facilities in our laboratories. Test set-ups and procedures are discussed with the client in detail and adjusted in order to document the involved mechanisms and their efficiency.

REGULATION OF DISCHARGES

We provide assistance in identifying and classifying pollutants and regulate the wastewater discharged to sewer systems as well as central and de-

centralised wastewater treatment plants. Furthermore, we deliver integrated knowledge based on local and international legislations as well as environmental management systems.



Activated carbon tested in our laboratory for how well it reduces pollutants in urban runoff.



Lynetten Wastewater Treatment Plant treats wastewater from Copenhagen, Denmark.