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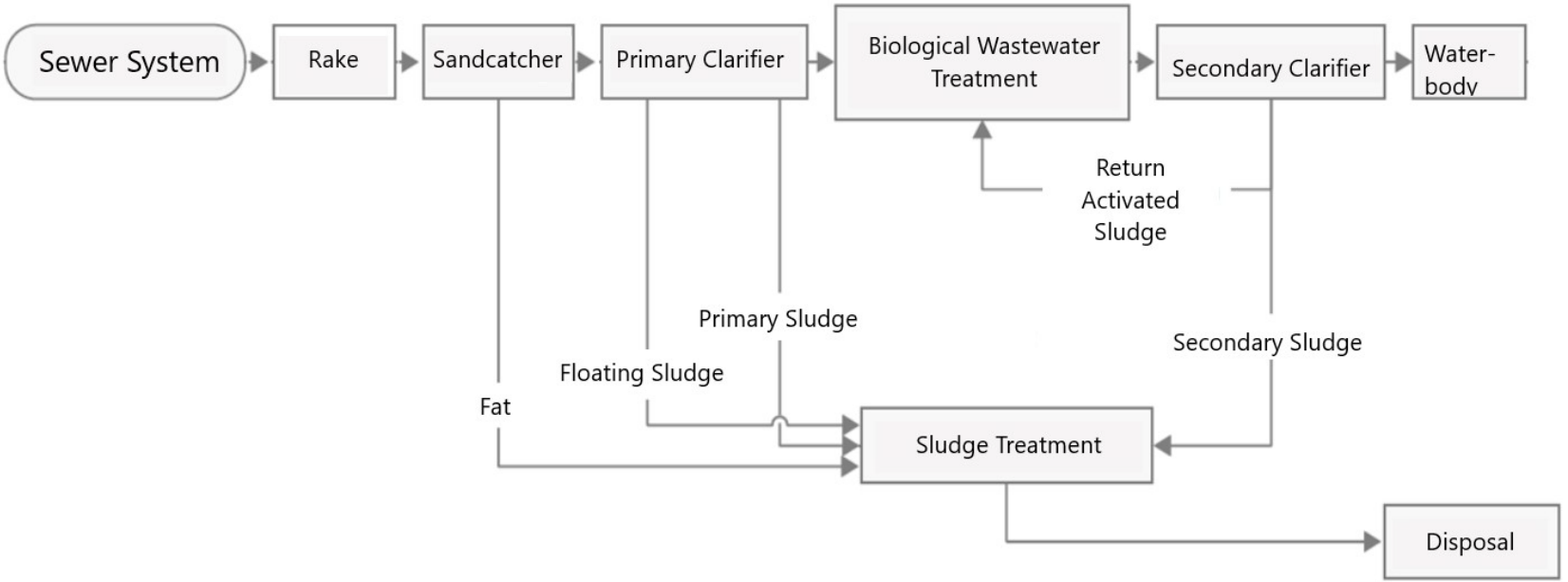
SLUDGE TREATMENT

Partnership activities of Stadtentwässerung Dresden and Apă Canal Chişinău

Willy Lenk and Paul Engelstätter

WHERE DOES SLUDGE FORM?



Stadtentwässerung Dresden
WIR KLÄREN DAS FÜR SIE

WHY DO WE TREAT SEWAGE SLUDGE?

- Reduction of the organic dry matter
- Reduction of the total dry mass of the sewage sludge
- Avoidance of the formation of odorous substances (organic acids, amines, mercaptans and other organosulphides, H2S)
- Improvement of the dewaterability of the sewage sludge
- Improvement of the hygienic properties of the sewage sludge
- If necessary: production of foul gas and energy (anaerobic digestion)

GENERAL DATA OF APĂ CANAL CHIŞINĂU AND STADTENTWÄSSERUNG DRESDEN

	Apă Canal Chişinău	Stadtentwässerung Dresden
Service for people	800.000	740.000
Sewer network in km	3.000	1.800
Daily inflow in Tm^3	140 - 150	135
Daily sludge load in m^3	110	210

PICTURES FROM CHISINAU WWTP

APĂ CANAL CHIŞINĂU - INITIAL SITUATION

The existing WWTP dates back from the 70s and was built in several stages although it is very likely that it has never worked at full capacity. Only about 50 % of the works are currently being used.

The wastewater treatment process implemented at Chisinau WWTP is a medium load contact-stabilization activated sludge featuring the following steps:

- Mixing chambers
- Fine screening
- Intermediate pumping
- Sand catcher
- Primary clarification
- Biological treatment
- Secondary clarification
- Discharge into the Bîc River

Sludge dewatering

The sludge resulted from primary clarifiers is dewatered after by means of two centrifuges.

Sludge disposal

The dehydrated sludge is currently disposed of in a few dumping sites nearby the plant.

REHABILITATION WORKS OF WWTP

Started in 2018 with the main objectives:

- **Construction of new pretreatement facilities**
- **Construction of a new sludge treatment line**
- **Construction of an odour treatment plant**
- **Introduction of the anaerobic fermentation technological process and sludge dewatering**
- **Updating the electrical and pumping equipment, air blowers etc.**

On the completion of works, the sludge should be stabilized, solving the odour issues encountered today.

PICTURES FROM CHISINAU WWTP

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Primary Sludge Pumping Station

Primary Clarifier

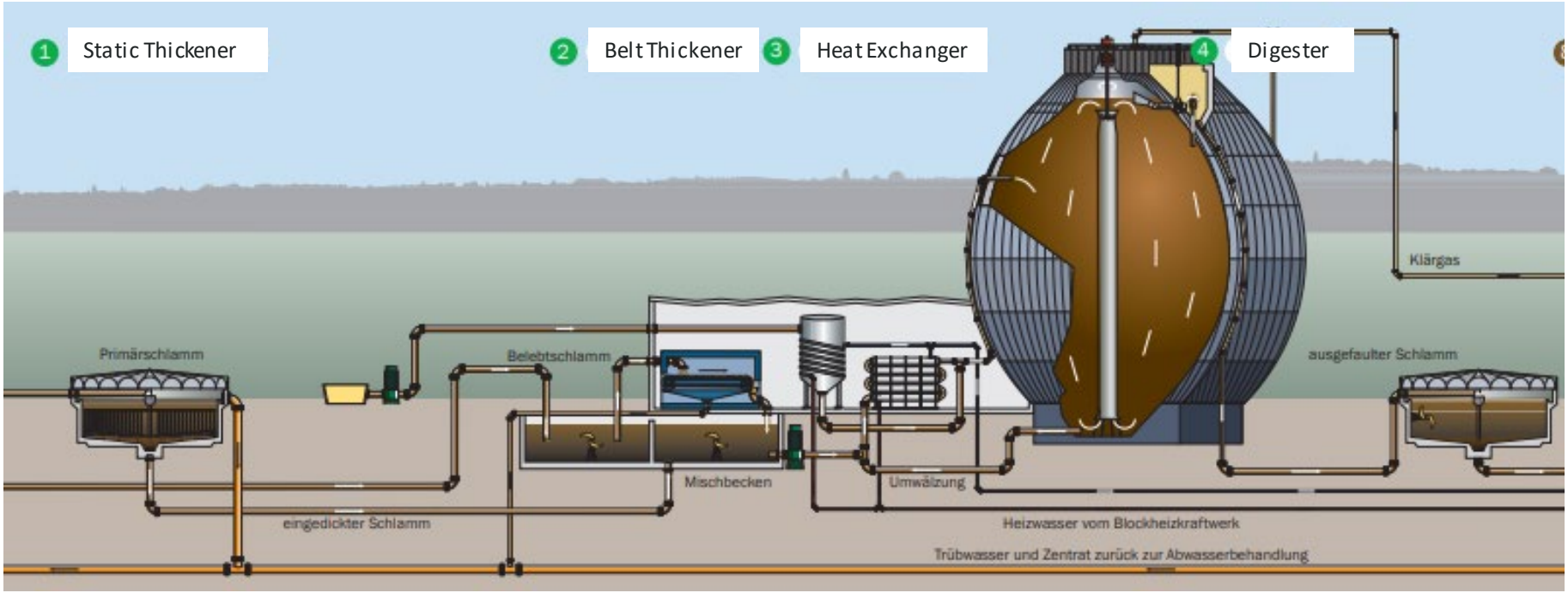
Return Activated Sludge Pumping Station

Centrifuge Sludge Dehydration Station

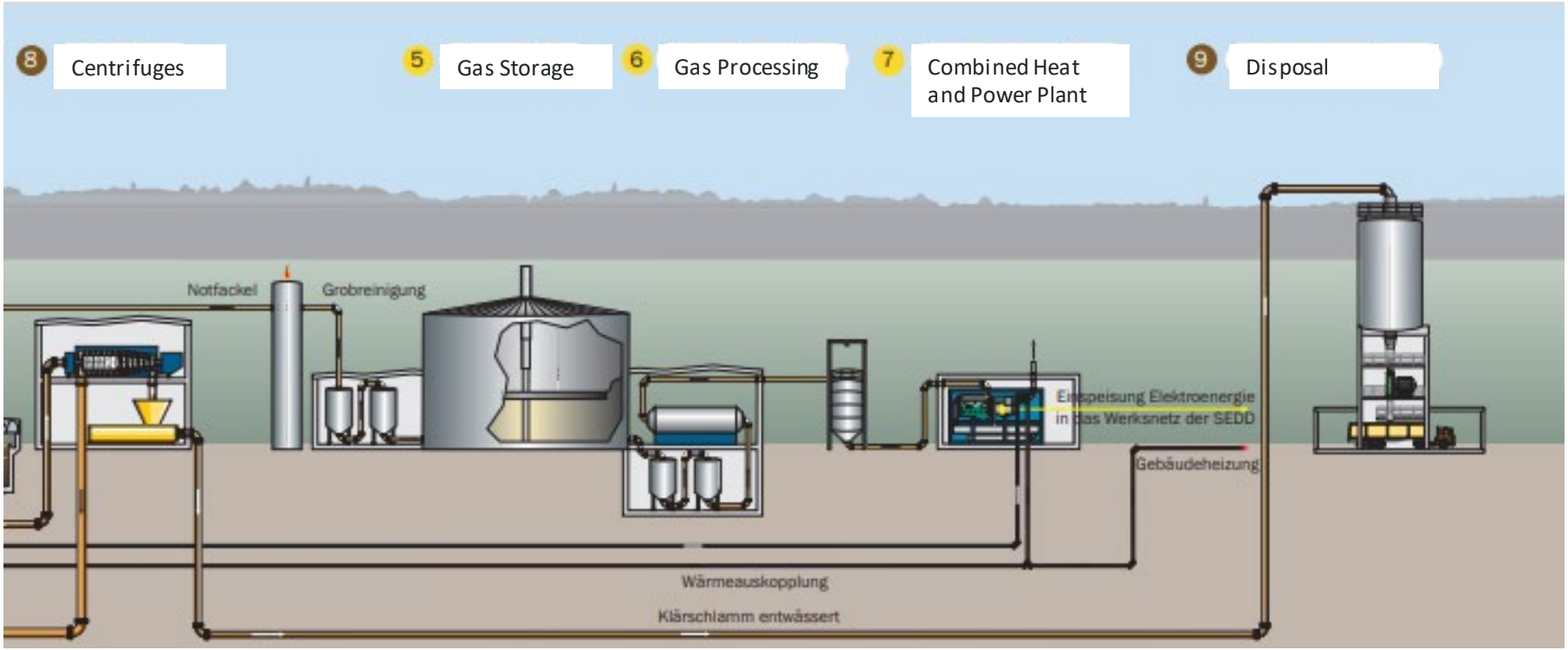
THE MAIN ISSUES FOR THE SLUDGE MANAGEMENT

Even after the successful completion of the WWTP rehabilitation works, the operator will remain with the issue of sludge disposal and its recovery. The existing sludge dumping sites ensure the storage for a limited period. Therefore, we aim for the implementation of a sustainable solution for the recovery and disposal of the sludge.

STADTENTWÄSSERUNG DRESDEN – HOW WE DO IT



STADTENTWÄSSERUNG DRESDEN – HOW WE DO IT



STADTENTWÄSSERUNG DRESDEN

HOW WE CAN WORK TOGETHER

What we already done	Where we can still help (Examples)
Crash Course about Sludge treatment: • Pre-Thickening • Anaerobic Sludge Stabilization • Production of foul gas • Sludge Dewatering • Sludge Disposal	• Staff training • Account of charges • Courses about: – WWTP Operation – Sludge Treatment Operation – Sludge disposal (EU compliant) – Mechanical equipment – Heat utilisation – Troubleshooting and fault elimination – Power generation – Precipitants and where to use them

Thank you for your attention!

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