

PAPER 9



INTEGRATED ENVIRONMENT SOLUTIONS

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Integrated Environment Solutions

What is Integrated Environment Solution

Integrated environmental management (IEM) is a philosophy that is concerned with finding the right balance between development and the environment.

IEM considers the environmental elements in a 'cradle to grave' concept (i.e. from the inception of the idea right through to the decommissioning or the end of the project).

IEM is used in looking at, for example, the environmental impact of converting grazing land to the growing of wheat (project) It also looks at the environmental impact of increasing the wheat price (policy), which may encourage more marginal land to be put under wheat. In addition, it considers the impact of assistance programmes, such as the implications of encouraging new wheat farms (programmes).

What is Integrated Environment Solution



THE LEADER IN INTEGRATED ENVIRONMENTAL SOLUTIONS

Kualiti Alam or formerly known as **Cenviro**

Kualiti Alam owns and operates the only integrated hazardous waste management centre in Malaysia, Kualiti Alam Waste Management Centre (WMC) in Negeri Sembilan. The WMC hold the license to handle 76 categories of 77 scheduled wastes listed under Environmental Quality (Scheduled Wastes) Regulations 2005

Method of disposal for scheduled waste (Incineration)

Incineration Plant for scheduled waste is built to cater for all organic waste that requires thermal treatment to achieve maximum destruction efficiency

Primary combustion chamber with a temperature of up to 1000°C and secondary combustion chamber operating at above 1000°C to ensure the highest possible destruction efficiency

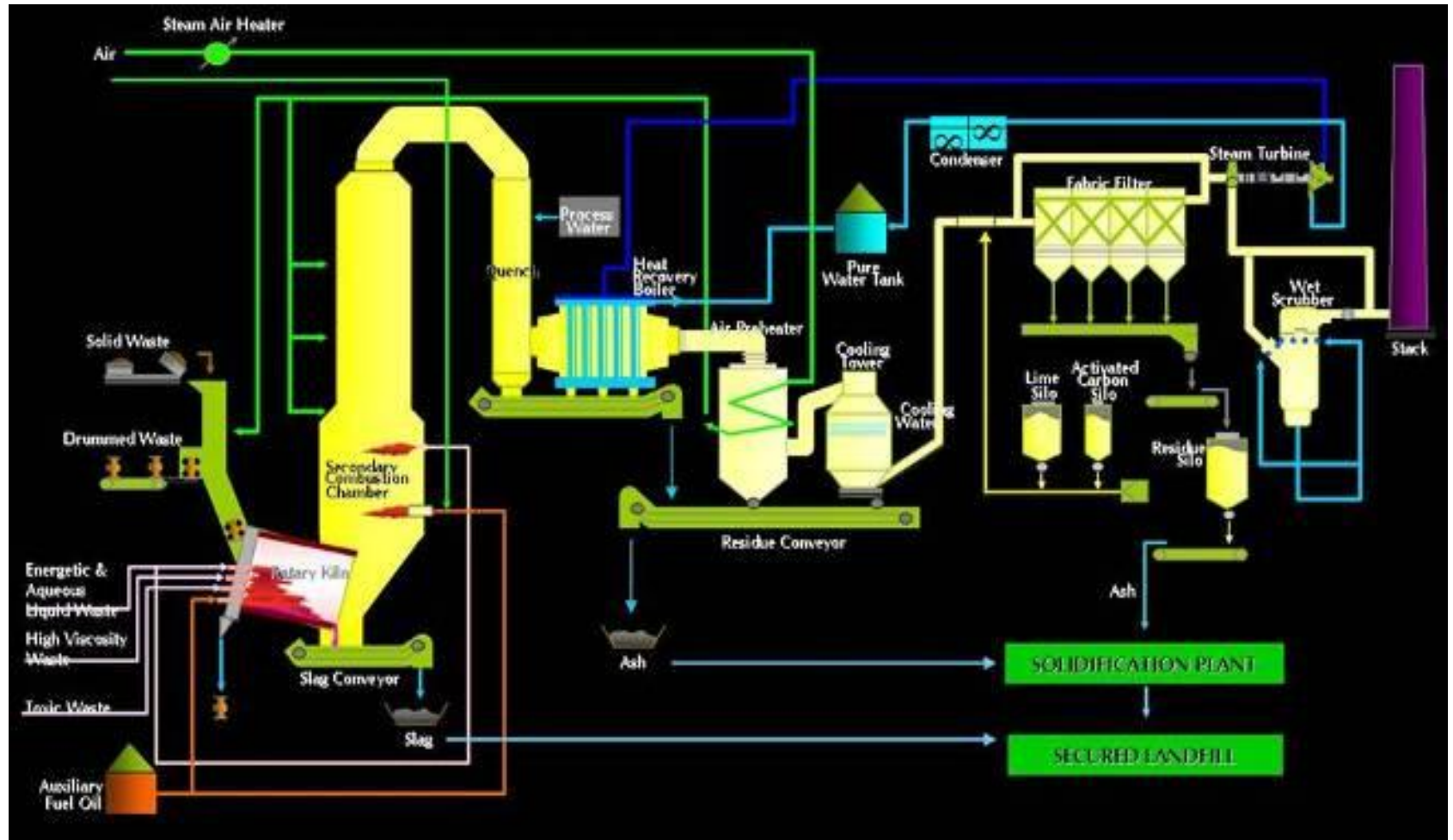
Designed with multiple feed streams, dual combustion chambers, rapid cooling, dry and wet scrubbing systems

Monitored by Continuous Emissions Systems (CEMS) in order to ensure the compliance of the emission discharge from the chimney.

Incineration

Waste Types:

- ◆ Solvents, waste oils, grease and wax wastes
- ◆ Plastics, rubber and latex wastes
- ◆ Refinery wastes
- ◆ PCBs, CFCs, halons
- ◆ Other organic wastes, including aqueous mixtures
- ◆ Medical and infectious wastes
- ◆ Soils contaminated with organic wastes



Method of disposal for scheduled waste (solidification)

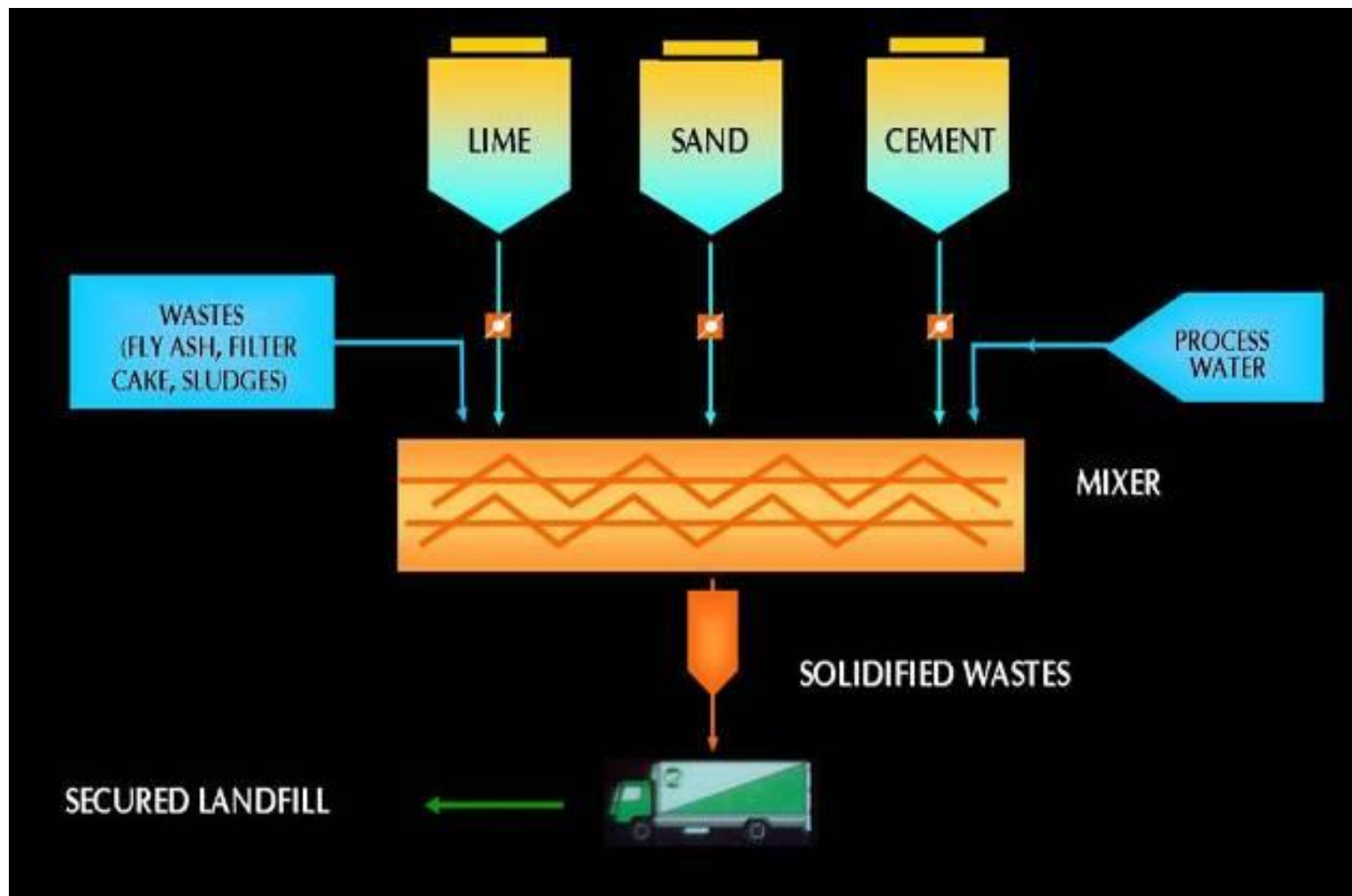
Stabilization and solidification aim to immobilize the toxic constituents of hazardous wastes to prevent them leaching from the wastes once disposed

Solidification technologies are often used to treat the residues from other treatment processes such as fly ash from incineration or sludges from heavy metal precipitation

Cement, lime and sand are also used in the solidification process. Solidification technologies are effective in treating a variety of difficult to manage inorganic wastes

Inorganic waste which do not fulfil the Direct Landfill Waste Acceptance Criteria for direct disposal into Secured Landfill are treated

Solidification Treatment Plant

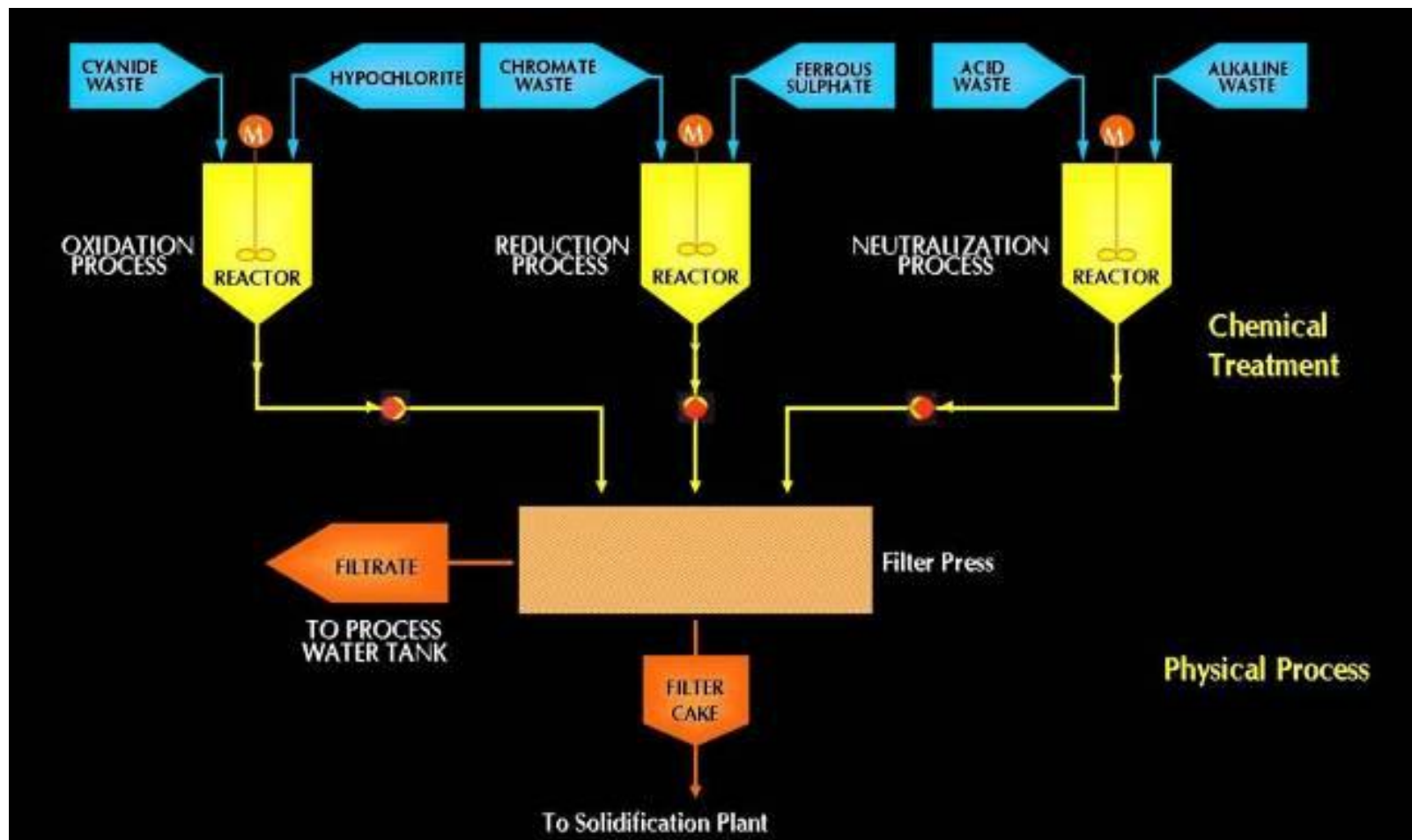


Method of disposal for scheduled waste (physical chemical)

Physical & Chemical Treatment Plant (PCT) is capable of handling all types of inorganic liquid waste such as acid, alkaline, oxidizer, chromate, cyanide and others. The PCT is also able to handle wastes with high total dissolved solid content through the use of a proprietary treatment process. These wastes are treated through various chemical processes including neutralisation, oxidation and reduction.

The PCT is operated with an intelligent monitoring control system to minimise the potential hazards. This facility allows the treatment of contaminated acids and alkalines, various waste waters and spent plating solutions. The slurry and filtered press sludges are tested periodically to ensure all wastes are treated in a safe and cost effective manner.

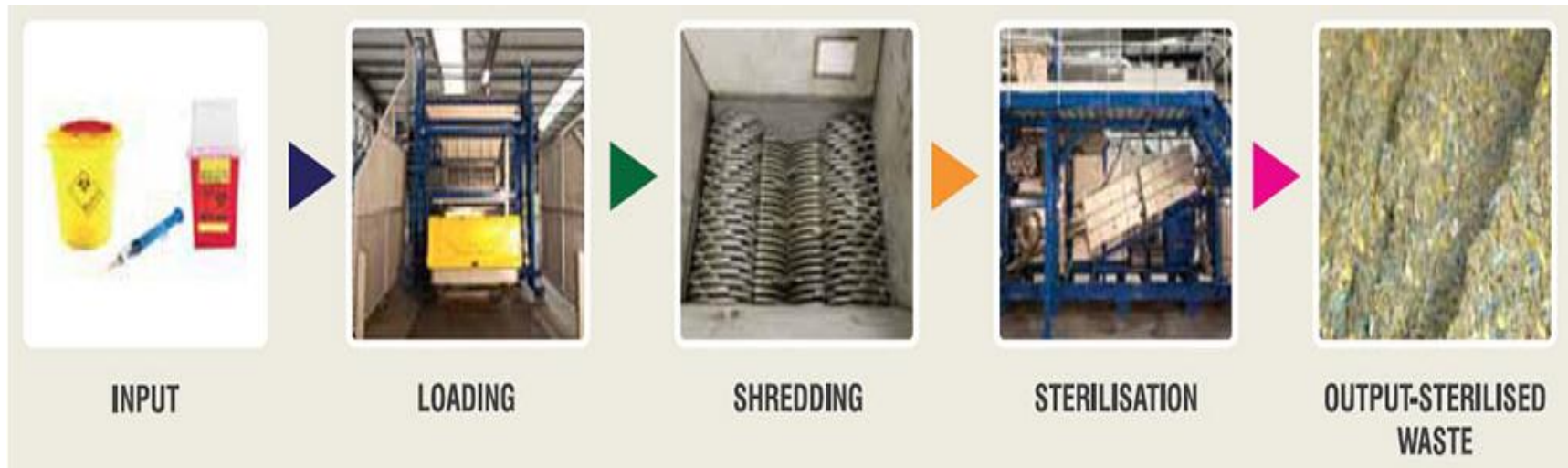
Physical & Chemical Treatment Plant



Eco-friendly microwave sterilization system for clinical waste

It is a zero emission technology, no harmful effects, no water, no steam, no odour, no burning or smoke, and is capable to process up to 300 kilogramme per hour. The residue from the process is inert and landfill ready.

The Microwave Ecosteryl is manufactured by AMB-Ecosteryl, a specialist in the commercial treatment of medical waste without combustion.



Eco-friendly microwave sterilization system for clinical waste



What is vertical secured landfill

Major problem of finding adequate space for incoming waste

Vertical Secured Landfill Project was born and construction commenced in March 2015

Over the next four years, a 24m high geogrid wall will be built along the 1.7km parameter of our existing secured landfill. This first phase (Phase 1) will provide additional capacity of 1.5 million MT and increase the lifespan initial by 15 years without using new land.

What is Geogrid Wall?



A green wall works as soil reinforcement



Flexible, fast and easy to construct



Structure designed for durability



Better resistance to dynamic characteristics



Using **existing space** no new land



30 years of landfill on the same land

What is vertical secured landfill



A schematic cross-section Landfill

SECURED LANDFILL for final disposal of residues and other solid hazardous waste which meets the landfill acceptance criteria, total cell capacity, at least 1.5 million tones over an area of approximately 45 acres





QUESTION & ANSWER

Thank You

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