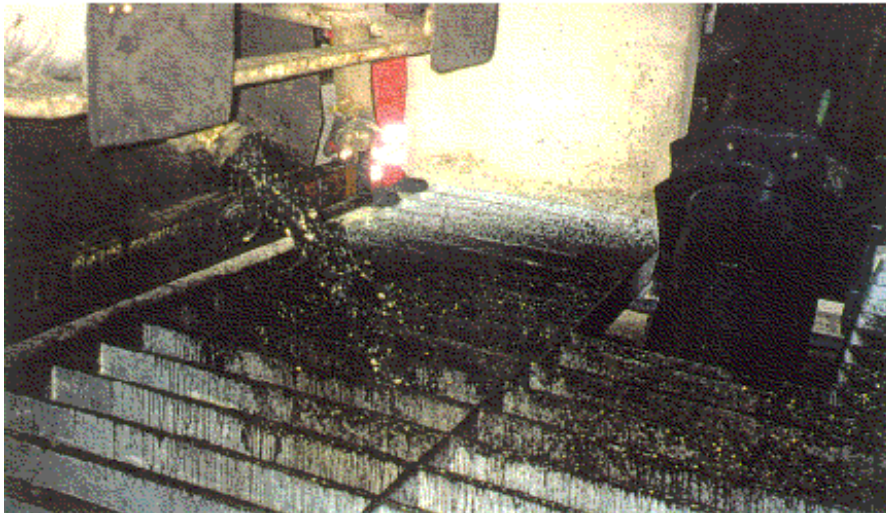


REMEDIATION OF INDUSTRIAL HAZARDOUS WASTE



The Problem

Industrial wastes that contain mixture of contaminated soil, free oil, emulsified oil, dissolved heavy metals are classified as hazardous special waste. Companies with such as this waste are faced with the difficult problem to economically treat this kind of waste. Separation of free oil, purifying of the water phase and remediation of soil are for economical and ecological reasons required.

The Solution

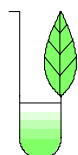
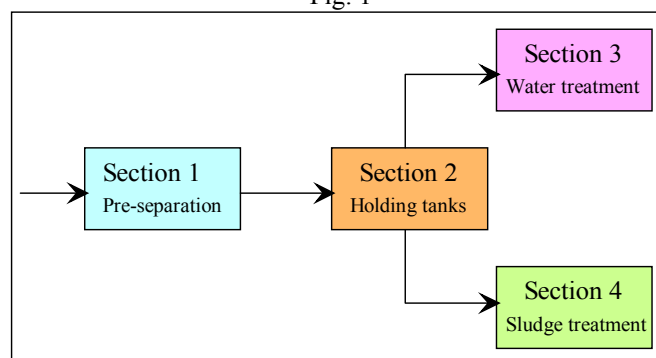
Our intensive research and development activities resulted in the development of an superior multi-stage remediation process that meets these requirements.

Over the last fifteen years, our proven track record documents that this innovative process is not only extremely economical but also efficient and reliable. It represents a new stat of the art.

The Process

The process consists of four treatment sections. See Fig. 1). In section 1 the hazardous waste is separated in a soil and a liquid phase. In section 2 the oil is skimmed off. The emulsion/water phase is purified in section 3 using emulsion breaking and heavy metal precipitation. The purified water can be used for soil washing. Remaining sludge is treated in section 4. (See Fig. 2).

Fig. 1



Malhis Engineering

Environmental and Chemical Technologies

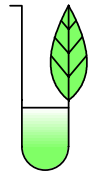
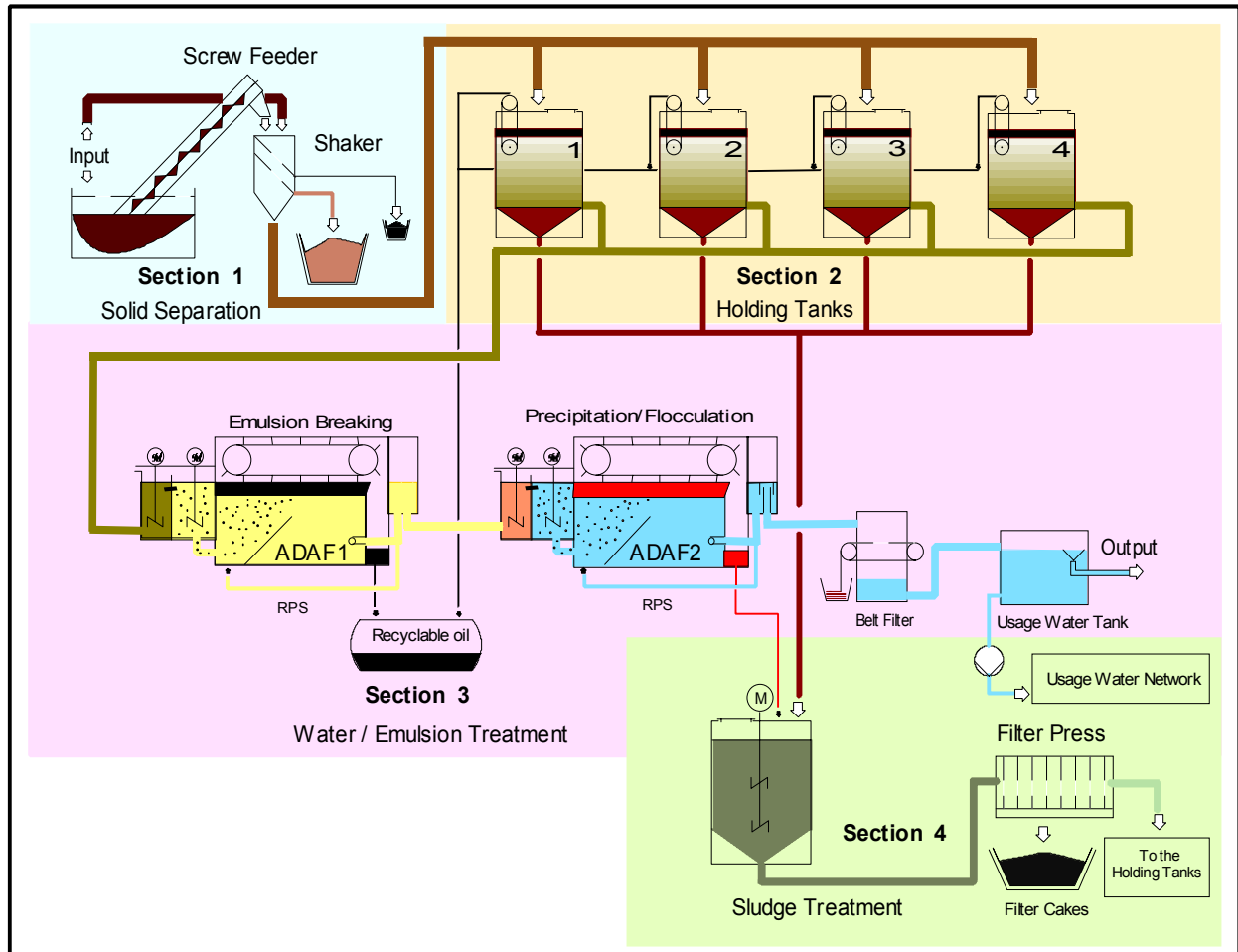


Fig. 2

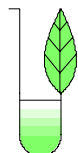


Advantages of this Process:

- Separation of solid for remediation
- Separation of hydrocarbons for recovery
- Purification of water for reuse
- Very economical and cost effective
- High purification performance
- Flexibility due to modular construction

Furthermore We Provide Consulting, Engineering & Construction for:

- Waste remediation
- Wastewater remediation
- Recovery of recyclable
- Recycling of wastewater
- Purification of spent air/gas and odor control



Malhis Engineering

Environmental and Chemical Technologies

Feldstrasse 38, 24105 Kiel, Germany. Phone +49- (0)431- 2 59 69 46. Fax +49- (0)431- 2 59 69 47

Email: info@malhis-engineering.com, www.malhis-engineering.com

Copyright © 1996