

REMEDIATION OF INVERT DRILLING WASTE ©



The Problem

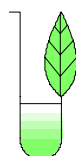
Invert drilling waste that results from the use of hydrocarbons based invert drilling fluids is a hazardous waste. It contains considerable amount of hydrocarbons and chemical additives. Current On-site remediation technologies such as thermal desorption and bioremediation are either expensive or accompanied with a long-term liability.

The Solution

Our innovative solution converts the hazardous drilling waste to an environmentally friendly solid fuel. The fuel can be used for example at coal power plants or cement factories. The picture above shows a bench scale of the treatment process. Following tables show some physical and chemical properties of drilling waste and fuel samples.

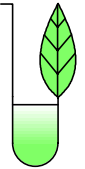
Sample	Colour	Smell	Consistency	Density [g/ml]
Waste	Black	Strong odour of solvent, paint, Hydrocarbons	Sloppy, sticky and stony mass with leaching behaviour	1.7– 1.9
Fuel	Black/ Brownish	No odour, it smells lightly like hydrocarbons	Crumbling, no leaching potential. Safe for storage, transportation and combustion.	1.6– 1.8

Sample	BTU [Lb]	Sulphur [%]	Chloride [%]	Ash [%]	Water [%]	Hydrocarbons [%]
Waste	3210	1.62	0.10	66.10	15.10	17.15
Fuel	3350	1.17	0.13	65.80	14.60	18.30



Malhis Engineering

Environmental and Chemical Technologies



The Pictures below show waste samples on the left and on the right a fuel sample before and during burning.



Stage I and II

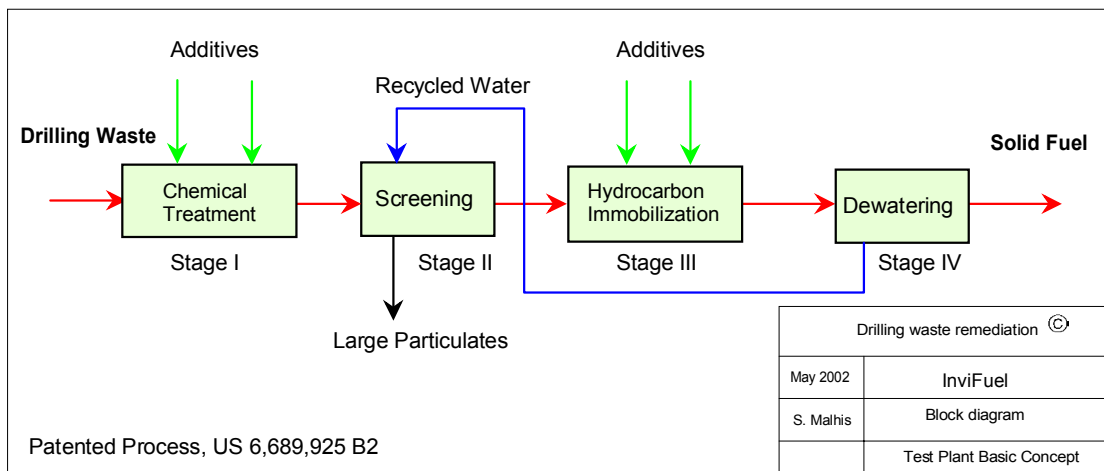
Chemical Treatment and Screening

In the first treatment stage additives are added to the waste and agitated. In the second stage the resulting aqueous slurry is screened to separate large particulates, which will be rinsed with recycled water and left clean on site.

Stage III and IV

Hydrocarbons Immobilization and Dewatering

In the third treatment stage The aqueous slurry is than treated with additional additives for immobilization of hydrocarbons on small particulates. The last treatment stage is dewatering using a centrifuge.



Advantages of this Process:

- Immediate waste treatment
- Waste converted to valuable products
- Solution integrates economy and ecology

Furthermore We Provide Services for:

- Wastewater remediation
- Recovery of recyclables
- Purification of spent air/gas and odor control



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