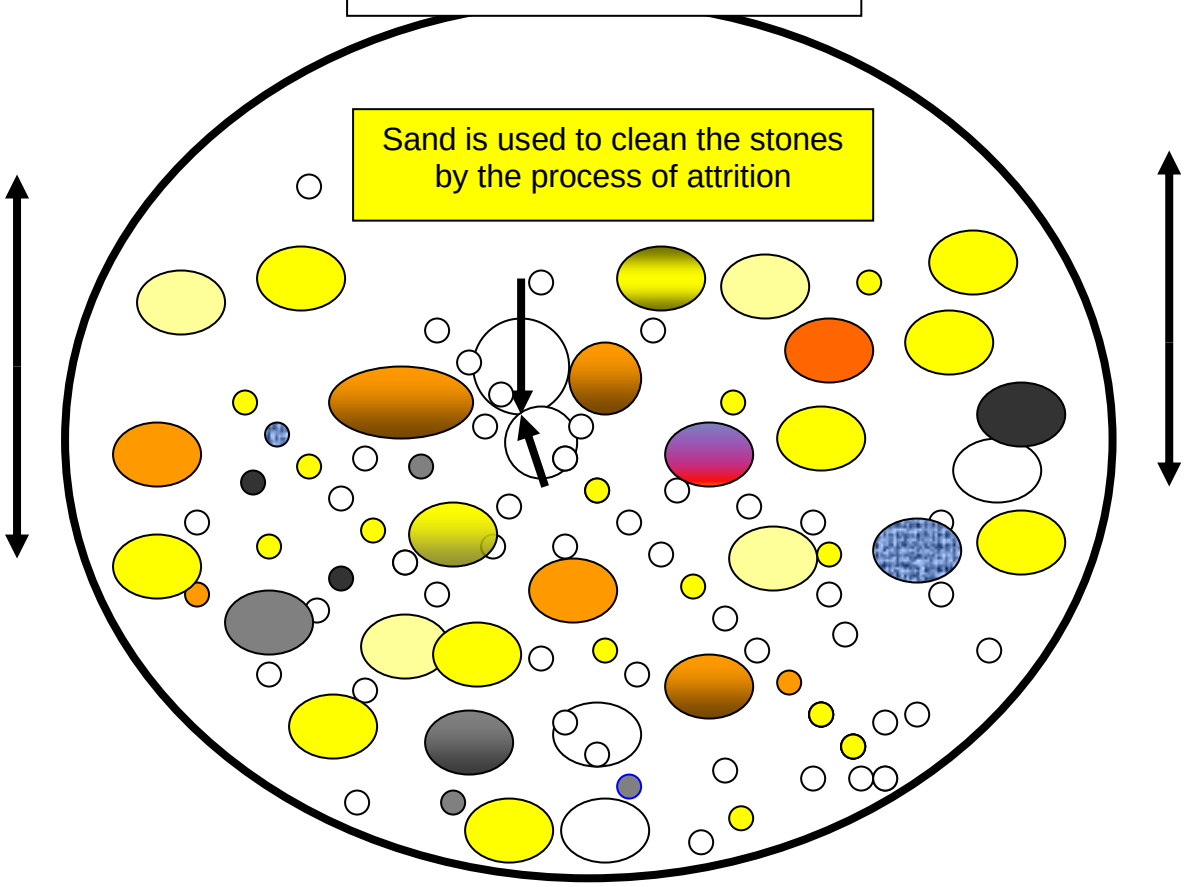
Energy + Wear Saving Washing of Sand and Gravel with the vertical jig

- **REDUCED CAPITAL COSTS**
- **REDUCED AMOUNT OF WASH WATER**
- **WASH WATER CAN BE RECYCLED**
- **NO PRESCREENING REQUIRED**
- **LOW ENERGY CONSUMPTION**

There are stringent requirements to reduce the amount of clay, organics and others fines when sand and gravel are used as a construction material. Therefore I have developed an easy process which uses the material itself as a cleaning tool. Vibration is used to abrade the particles against each other - otherwise known as attrition scrubbing.

Sand is used to polish and clean the stones and the stones help to clean the sand, so there is a saving on the high costs for metal wear parts. Also screening at 2 mm before washing is not required. The energy consumption is reduced drastically.

Profile Hosewasher



Longitudinal Cut mbb – Hosewasher

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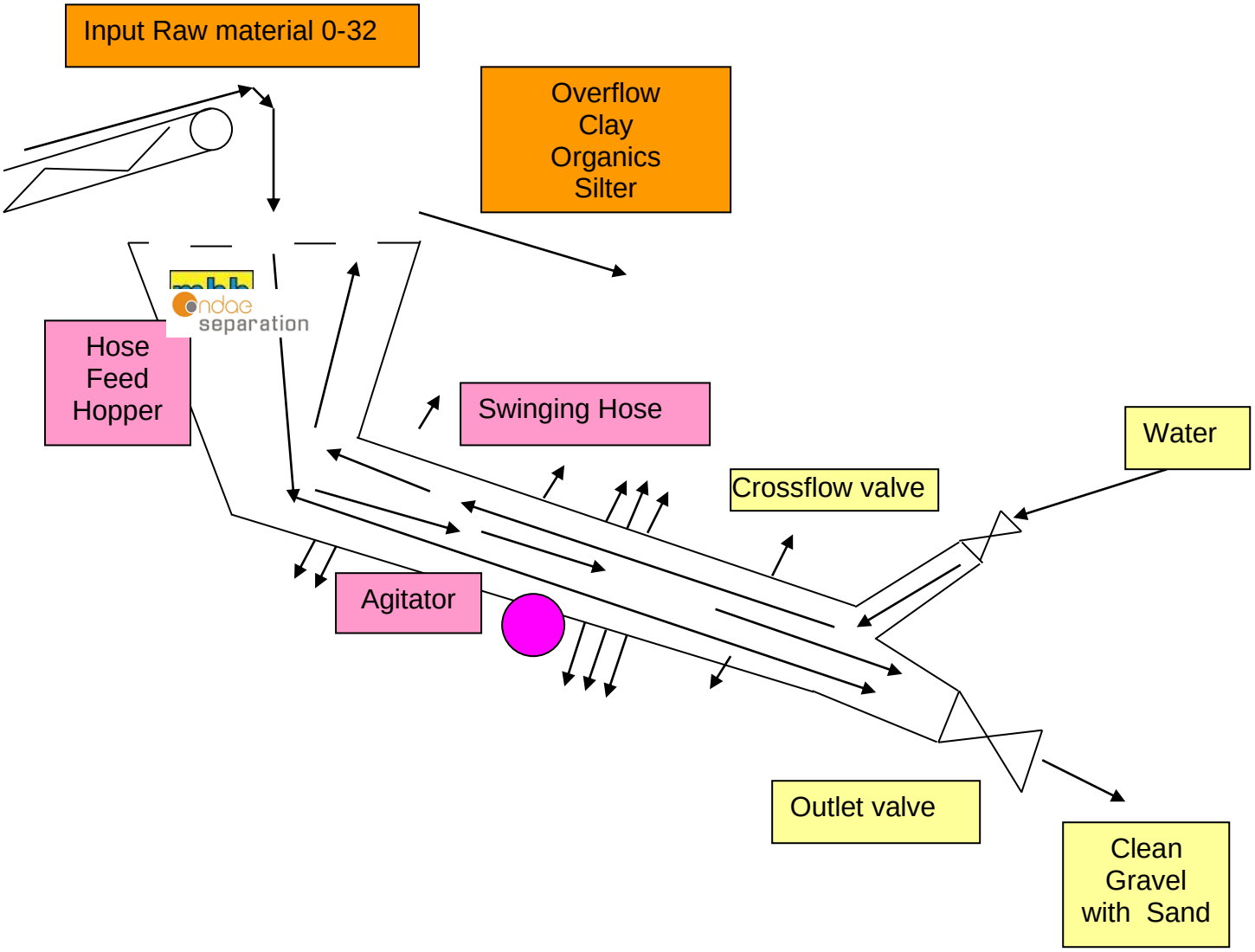
The amount of wash water is also reduced and in some cases it is possible to recycle the wash water. The amount of water can be adjusted in relation to the percentage of clay and organics.

Raw input material is driven through a length of 6 m in a rubber lined swinging hose which is agitated by a rotating unbalance vibrator with a g-force between 2,5 and 4.5 so that stones and sand are forced to push and abrade each other. Wash water flows counter current from the lower to the upper part, cleaning the particles of all impurities from the surface, even iron oxide. This process works well with a content of min 40 % sand < 2 mm. By decoaling during the same process it is the possible to use even raw material with more than 10 % waste for construction purposes.



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Energy and wear costs are drastically reduced. The lifetime of the first swinging hose before it had to be replaced, in mbb 3, was 5 years. During that period the throughput was ca. 500 000 t grains 0-8 mm. Wear costs for this machine are ca. 4 – 5 ct per t production. Specific energy per t production is 0,04 kwh for the agitator and 1,6 kwh/t including the water pump, conveyor belts, dewatering bucket wheel and compressor.

mbb hosewashers have been in operation since 2003. The lab test confirmed that within one week the mbb3 had achieved the quality required for construction material in spite of this pit having a lot of impurities. The mbb 12 machine which has been installed at the soil washing plant TerraCon GmbH in Hamburg since 2008, has proved that the sewage sand from the canalisation of the city of Hamburg can be washed in order to produce recyclable minerals .

Weblink: www.terracon-hamburg.de

mbb 3 operating since 2003 at Adolf Behrends in Leer – throughput 50-70 t/hr

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mbb 10 operating since 2006 at Hunecke in Leer – throughput 50-60 t/hr

Total View with Dewatering Screw

Input from Suction Dredger to Round Thickener

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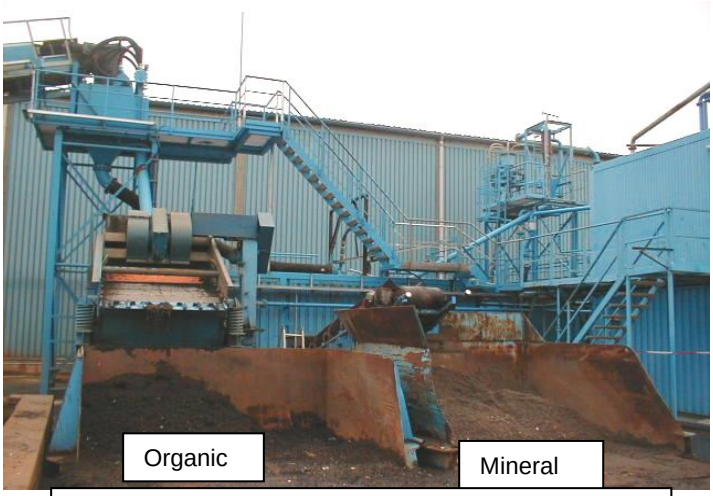
mbb 12 operating since 2008 at TerraCon GmbH in Hamburg

Swinging Hose with Agitator



Hose Washer is the heart of the Soil Washing Plant

We offer also Hydrocyclone technology for cost effective and easy handling of fine sand:

- Recovery of fine sand, washing off fines, desliming
- Grain size curve correction
- Rollattrition (polishing sand to remove Iron Oxide)
- Crossflowcleaner (to reduce fines – can be regulated whilst operating)

Fine sand is sent automatically to a stockpile, saving shovel loader working hours in the shed.

Crossflowcleaner

Last actualisation 3.9.2018

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Realized Projects:

1	2	3	8	10	12
Lab Test Unit	Full - Size Test Unit	Specialmix 0-8 mm	Metalrecovery	Concretesand 0-4 mm	






Soilwashing

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