

### **Centrifugal Separating in Mining**





### The various needs for centrifuge technology

- <u>Centrifugal Separation today is used for</u>
- ENVIRONMENTAL PURPOSE To Dewater the Mud
- GET READ of the Waste and to Re-Generate Benfit with the valuable Materials
- Enable Energy Recources out of the Crudes and Wastes
- Improve Separation Techonolgy to Continuous and Automatic Standards

The various Fields of Application see in next Graph



#### **APPLICATIONS**

#### Mud Separation





### Reference Products for Centrifugal Use in Mining

- Aluminium Hydroxide
- Barium Sulfate
- Calcium carbonate
- Charcoal
- Chromium
- Coal
- Cobalt ore
- Copper ore

- Ferro chloride
- Manganese and Magnitite
- Molybdenum ore
- Nickel ore
- Platinum
- Sinter sludge
- Titanium Di-xyde
- Tungsten Carbide



### **Reference Products for Centrifugal Use in Mining**

- Kaolin
- Potassium carbonate
- Titan Di-Oxyde
- White Vitriol
- Uranium Oxyde

- •Lead ore (galena)
- •Zinc
- •Tin





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### **Different Aims to Use Centrifugal Separation**

- > DEWATERING of Solids Fines
- IMPROVE the Solids Recovery
- > WASHING of SOLIDS to eliminate Impurities
- CLASSIFY to earn with the Ore particles

The various Fields of Application see in next Graph

**OUR CENTRISYS Centrifuge Techology** will help to reach your Benefits

#### The Standard Process Steps we do are

- Dewatering Solids to minimum moisture
- **Clarification of Liquid Phase**

### Our Special duties to optimize your Benfits

- Classification by particle size
- Classification by solids density
- Back-Wash to eleminate Mother Liquor or Change pH
- **Regeneration of Ore and Tailing Lagoons**

Extraction - To mix a liquid containing a mineral or extract with a liquid agent, and then separate out the agent, which after mixing contains the extract or mineral, from the original liquid

Clarification - Separate suspended

particles from a liquid

Purification - Separate immiscible liquids (even with solids present)

Dewatering - Concentrate a slurry

Classification - To split a suspension into two streams with different particle size distributions

Washing - Counter-current washing or

dissolving of impurities in suspended, crystallized or amorphous solids









Mud Separation





### Function of a Centrifuge Principle of the 'G'-Forces







### Sedimentation















# Decanter Centrifuge in Operation





### CENTRISYS Decanter for 1 – 200 m<sup>3</sup>/h





# **44-inch Screen Bowl Centrifuge**







**CENTRISYS SCS 44-3T Screen Bowl Centrifuge** for Product washing and Dewatering sized Minerals





#### **Mobile BMS-Decanter Plant for Plug-And-Run Installation**

*Full Mobilization with all Items and Utilization to run a fiull-scale Separation Process located in 40-feet Container or Skid-mounted-Rigg* 



# **Product Classification by particle size**





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### Plant Concept: - Basic flow sheet for port sludge handling







Schematische Darstellung einer Fluorit- Aufbereitungs- und Anreicherungsanlage (Flotationsprozess)

Adaptiert / Quelle: SOGEREM; 1989; L'exploitation de Montroc: Mine et usine d'enrichissement du minerai de fluorite; CR 11 / 89 )



### **Flotation as pre-thickening stage**

- prior to separation technology -

- Lead ore
- Zinc ore
- Copper ore





## Coal Processing with Centrifugal Separation

- Tailing Separation for process of coal washing
- Reduction of Sulphuric acids
- Sodium reduction for coal power plants





• Iron Ore

→Optimization to improve fine ore quality
→Thickening and dewatering of ore fines



# **Special Process Duties**

- Dewatering
- Washing → Counter current decantation Fresh water





### **BMS Mud Separation**

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