

**ENVIRONMENTALLY
BENIGN MINING OF BEACH
SAND IN COASTAL ZONE OF
ORISSA**

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**INTRODUCTION TO
DEPOSIT**

- LENSE SHAPE DEPOSIT
- LOOSE SAND
- 18 km LENGTH, 1.5 km WIDTH
- TOTAL RESERVE 230 million ton.
- FORMED DUE TO WEATHERING ACTION OF REVER, WAVE, WIND
- GRADE 15 TO 20% AVERAGE.
- GRADE DECREASES INCREASE IN DEPTH

**SELECTION OF MINING
METHODS**

- MINING BY EXCAVATORS AND SENDING 'RoM' TO 'MSP' BY DUMPERS
- ...CONSTRAINTS EXCAVATOR HAS TO WORK BELOW WATER TABLE
- ...LOSS OF MINERAL
- ...MAINTENANCE OF HAUL ROAD
- ...NOISE AND DUST POLLUTION

**PRECONCENTRATOR NEAR PIT -
MINING BY EXCAVATORS &
DUMPER COMBINATION**

- CONSTRAINTS
- ...REJECT DISPOSAL
- ...HAUL ROAD MAINTANANCE
- ...LOSS OF MINERAL
- ...NOISE AND DUST POLLUTION

**DREDGING WITH LAND BASED PRE
CONCENTRATOR AND TRANSPORTATION BY
DUMPER OR HYDRAULIC MEANS**

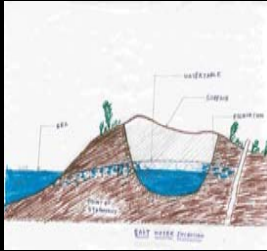
- CONSTRAINTS
- ...NOISE AND DUST POLLUTION
- ...REJECT DISPOSAL
- ...MASSIVE DOZING OF REJECTS
- ...MAINTANANCE OF HAUL ROAD
- ...APPLICABLE FOR SMALL SCALE MINING.

**DREDGING WITH FLOATING
PRECONCENTRATOR AND TRANSPORT
BY HYDRAULIC MEANS**

- ADVANTAGE
- ...APPLICABLE BELOW 'MSL'
- ...DUMPER TRANSPORTATION AVOIDED
- ...SYSTEMATIC REJECT DISPOSAL
- ...MINIMUM DUST NOISE POLLUTION
- ...ENVIRONMENT FRIENDLY
- ...APPLICABLE FOR LARGE SCALE BEACH SAND MINING

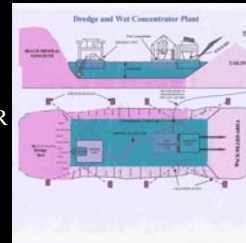
POSSIBLE ENVIRONMENTAL PROBLEMS

- ▶ DUST POLLUTION
- ▶ NOISE POLLUTION
- ▶ SILTATION
- ▶ GROUND WATER POLLUTION



MINING OPERATION BY DREDGING

- ▶ DREDGE
- ▶ CONCENTRATOR
- ▶ HEAD FEED BIN



DREDGE AND WET CONCENTRATOR PLANT

THROUGH PUT CAPACITY = 500 tph
 Concentrate Production = 80-90 tph
 Spiral Concentrators, Hydrocyclone, Trommel Screen
 Centrifugal pumps are used.
 2.0 to 2.5 Hects area mined every month depending upon the surface topography of the deposit and Annual area of cutting comes to 16 to 20 Hects.



POND BASED
 FLOATING
 CONCENTRATOR

LAND BASED
 CONCENTRATOR



RECLAMATION



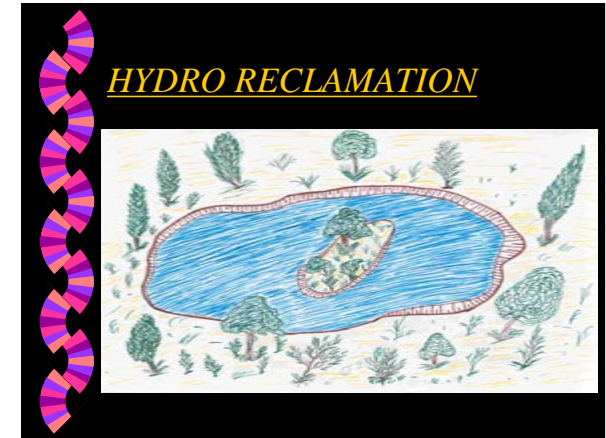
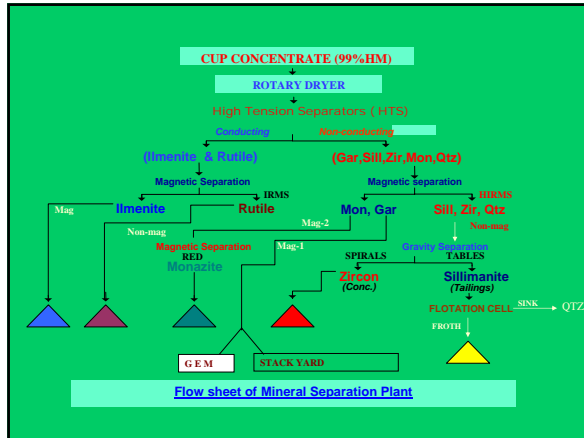
A View of Tree Plantation in progress

- ▶ PLANTATION BY CASURINA

DREDGING IN
 PROGRESS

SIMULTANEOUS
 BACKFILLING ACTIVITY





- MY OPINION FOR IMPROVING ENVIRONMENT**
- ▶ THE POND CAN BE CONVERTED TO PICNIC SPOT
 - ▶ WATER SPORTS
 - ▶ FISHERY
 - ▶ WATER CAN BE USED FOR DRINKING AND IRRIGATION PURPOSE AFTER TREATING

- CONCLUSION**
- ▶ THERE IS NO DRILLING AND BLASTING
 - ▶ MINIMUM NOISE AND VIBRATION
 - ▶ NO DUST
 - ▶ LESS POSSIBILITY OF WATER POLLUTION
 - ▶ FOUNA LIVING VERY COMFORTABLY.

- CONCLUSION (cont.,)**
- ▶ HENCE THE MINING ACTIVITY FOR BEACH SAND IN COASTAL ZONE OF ORISSA IS FREE FROM ALL SORTS OF POLLUTION RATHER IT CONTRIBUTES A GOOD ENVIRONMENT. HENCE IT IS CONSIDERED THAT THE BEACH SAND MINING IN ORISSA COAST IS A ENVIRONMENTALLY BENIGN.

