



**3RD International Conference on Sustainable
Development Indicators in the Minerals Industry (SDIMI)**

**S&B INDUSTRIAL MINERALS S.A.
MILOS**

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S&B Βιομηχανικά Ορυκτά Α.Ε.



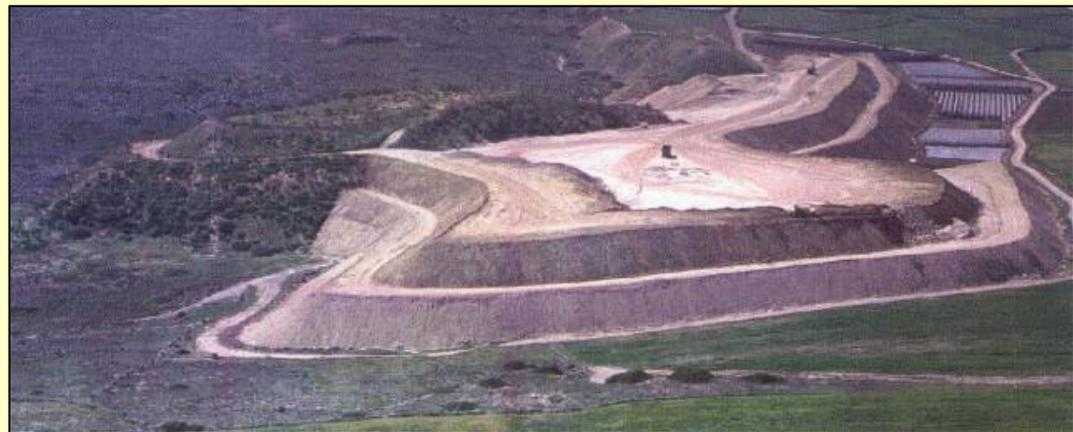
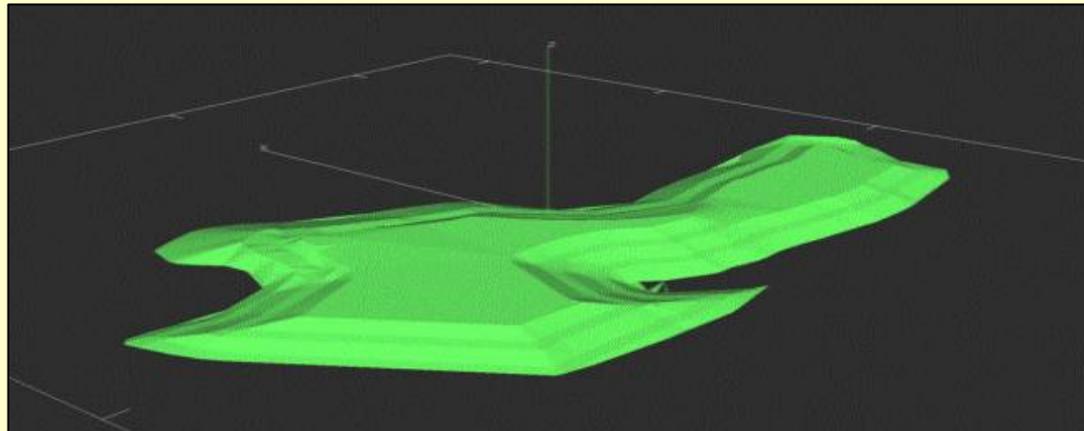
Rehabilitation works of S&B Industrial Minerals S.A. at Milos

- Surface mining activity creates several impacts to the environment which is included in the area of excavation.
- The environmental impact concerns the change of the topography (oral) and the removal of natural vegetation. (mainly bushes)
- For our company, restoration of areas which were mined and the effort for bringing up again a balance of nature is an important priority over the last 3 decades.
- The successful qualitative results of restoration works have delivered to nature over 1.800.000 m² of surface after mining activity.
- Our fundamental method in order to achieve the best results for restoration of mined areas is the use of local plants. (bush or tree type)
- Each year around 500.000 euros are dedicated for the rehabilitation works.
- During the initial stages of restoration activities a great amount of surfaces, adequately shaped, are delivered by the mining department covered with top soil. These surfaces are suitable not only for the local nature community but also for a combination between natural and agricultural environment. The above fact was a great chance to create small horizontal agricultural cultivations as pilots inside the restored areas.



REHABILITATION DESIGNING

- Rehabilitation designing is connected to mining designing.
- Initial designing of rehabilitation offers a great advantage for excellent and quick results.





REHABILITATION STAGES



SHAPING



TOP SOIL COVERAGE



HYDROSEEDING



FENCING



PLANTING



MAINTENANCE

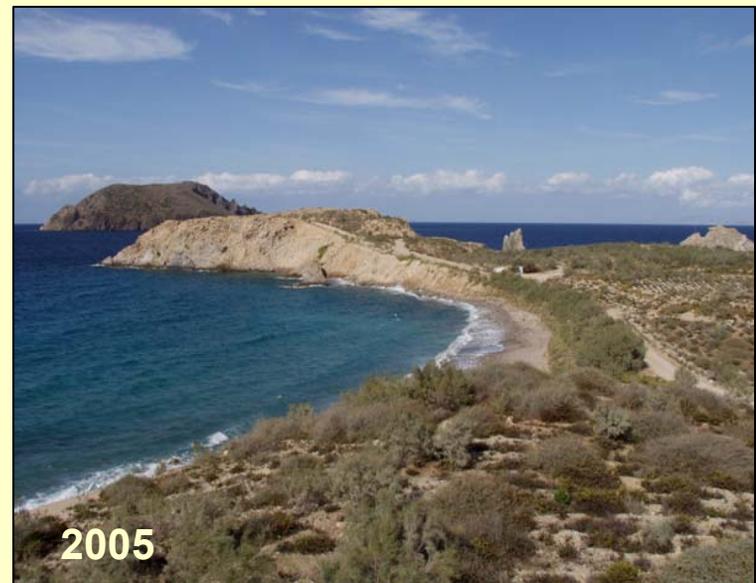
S&B

AN IMAGE EQUALS A THOUSAND OF WORDS!!

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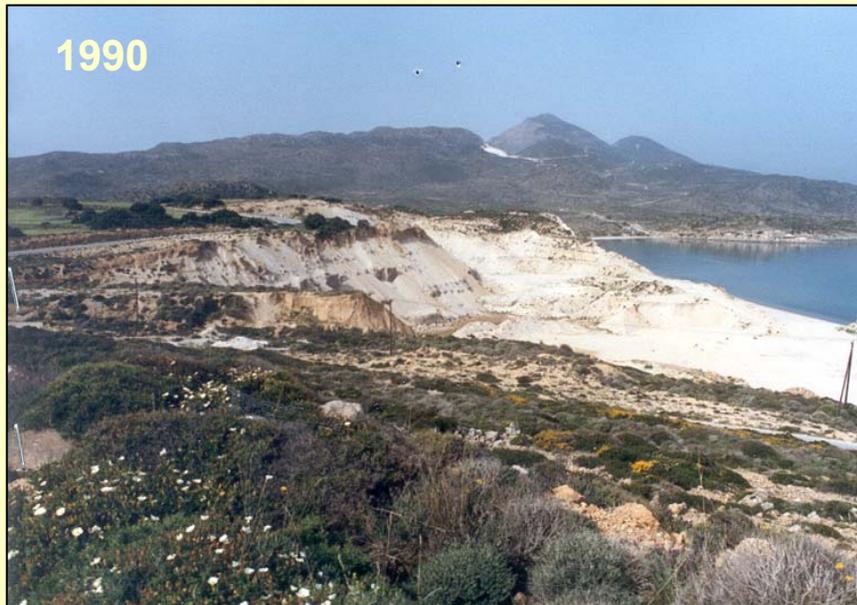
TRACHILAS PERLITE MINE (FULLY REHABILITATED PART OF THE ACTIVE MINE)



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FULLY REHABILITATED PERLITE MINE - CHIVADOLIMNI





KAOLIN MINE - KASTRIANI



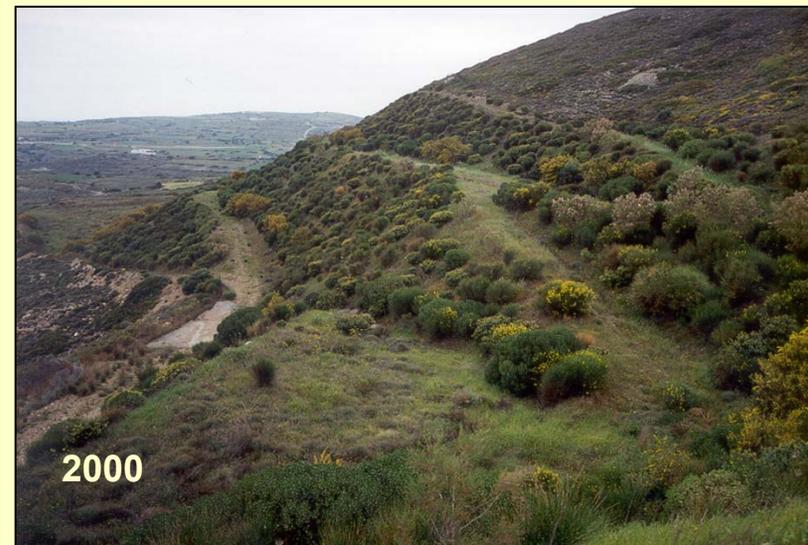


AGGERIA BENTONITE MINE – FULLY REHABILITATED NORTH EXTERNAL WASTE DUMP AREA





FULLY REHABILITATED BENTONITE MINE - GERAKOPETRA





FULLY REHABILITATED BENTONITE MINE - AGRILIES



ALTERNATIVE USE OF REHABILITATED SURFACES

- During the initial stages of restoration activities a great amount of surfaces, adequately shaped, are delivered by the mining department covered with top soil. These surfaces are suitable not only for the local nature community but also for a combination between natural and agricultural environment. The above fact was a great chance to create small horizontal agricultural cultivations as pilots inside the restored areas.
- At the beginning the agricultural items that could potentially be installed in these pilot areas were studied and examined analytically. The following agricultural items were finally qualified to be furthermore researched:
 - 1) *Vineyard* (*Vitis vinifera*)
 - 2) *Prickly pear* (*Opuntia ficus indica*)
 - 3) *Jojoba* (*Simmonsia chinensis*)
 - 4) *Olive tree* (*Olea europea*)

Vitis vinifera (Vineyard)



ADVANTAGES

- Milos is still one of the fewest areas in Greece where a destructive disease for the European vineyard has not yet struck.
- The climate as well as the soil conditions are almost perfect for cultivating the European vineyard.
- It is a long-lasting cultivation that enters production very soon (nearly from the 3rd year).
- There are historical information which indicate that the wine produced in the past, when the cultivation of vineyards on Milos was highly developed, was of very good quality.



CHALLENGES

- Highly productive and competitive part of the agriculture on Milos.
- Benefit of a unique product with origin designation would be established.

Opuntia ficus-indica (Prickly Pear)



ADVANTAGES

- Adequate climate and soil conditions.
- Low demands for water and maintenance.
 - Resistant to fire.
 - Easy to produce.

Opuntia ficus-indica (Prickly Pear)



CHALLENGES

- Fruit production on dry periods.
- Could be exploited as cattle feed for sheep and oxen.
- The import of a variety with no thorns.

Simmondsia chinensis (Jojoba)



ADVANTAGES

- Resistant on dry periods.
 - Resistant to salty environment.
 - Easy development from seeds.
- Suitable for climate and soil conditions of Milos.



CHALLENGES

- The oil extracted from its seeds is widely used in industry of pharmacy and perfume.
- Biodiesel production .

Olea europea (Olive Tree)



ADVANTAGES

- The cultivation of the olive dates back to centuries at Milos.
- Resistant to drought.
 - Resistant to salty environment.

Olea europea (Olive Tree)

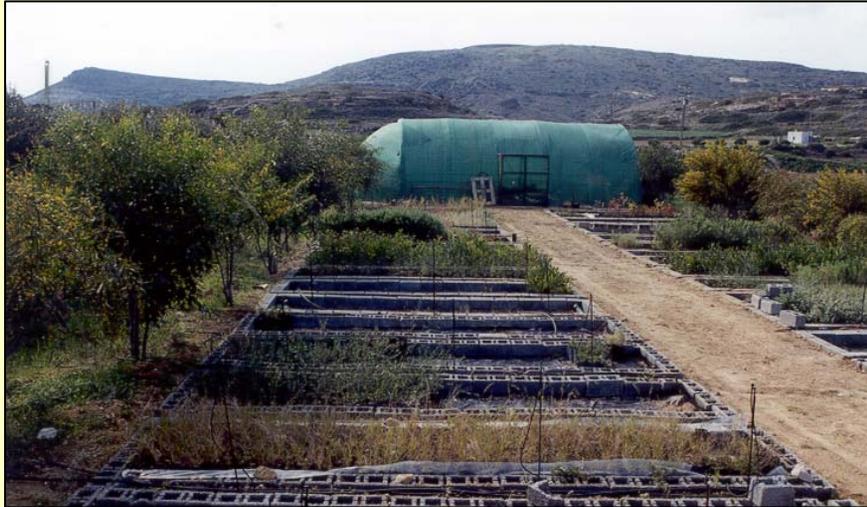


CHALLENGES

- Introduction of new varieties of olive.
- Production of compost from the remains of olive oil industry.



OUR NURSERY FOR DEVELOPING LOCAL PLANTS



The great majority of plants and bushes for rehabilitation works are developed at our own nursery located at Pollonia, Milos.

Each year around 27.000 local plants are developed from seeds collected (1.200 kgr at the year of 2006) all around Milos.



Each year 20.000 kgr of compost is produced for using it as an organic fertilizer at rehabilitated areas.



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**THANK YOU FOR YOUR
ATTENTION !**