ANTEA CEMENT Sh. A PRESENTATION

Prepared by:
Eng. Dritan Dervishaj
Quarry Manager
dervishajd@anteacement.com

ANTEA Cement Sh.A.

ANTEA "BOKA E KUQE" LIMESTONE QUARRY MANAGEMENT PLAN (5 year plan)

- As per our Shareholders requests (IFC & EBRD) and in line with Titan's commitments, CSR (Corporate social responsibility), ANTEA Cement Sh.A, prior to start it's operation has prepared an Environmental and Social Impact Assessment Study

- A Plan under the frame of the necessary master-planning and a 5-year mine-planning has been prepared for Limestone Quarry of "Boka e Kuqe", in compliance with the Quarry Management Plan (QMP) already developed.

- QMP has been approved and delivered to the State Authorities'

- Has been implemented strictly according to its' specifications

- Has been published at the Anteas' Official site (www.anteacement.al)

- Antea as part of an international group and a responsible Company, aims to lead as the best operating facility in the country and further!

Safety–in-design for operations

H&S Management System (**Quarries Safety Regulation ,** require from the Quarry Contractor the production of **Method Statements and Risk Assessments** for all quarry activities)

safe access and transportation road for all mining

depletion of benches from top to bottom

safe overall pit slope for the operating and depleted quarry

Safety distance from the quarry limits: 10m

distance of safety from the high-voltage electrical pylons (150 m)

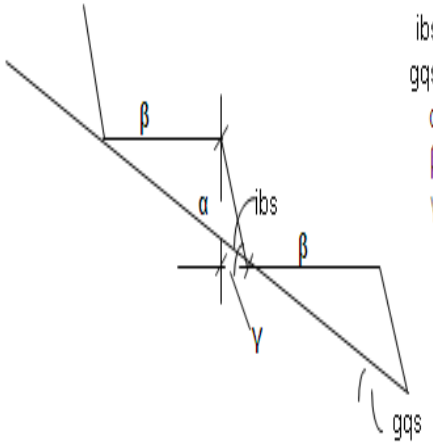
monitoring on a yearly basis the blast-induced vibrations in the area of the pylons (and possibly to the closest house so as to prevent any complaints), and measurement and record dust and noise levels,

installation of suitable fencing around the quarry area and on the exact limits

zero accidents or incidents since beginning

Limestone Quarry - Bench design charecteristics

Bench design characteristics						
height (m)	width (m)	individual bench		distance from foot of bench (m)	general quarry slope	
α	β	slope (deg)	tan(ibs)	γ	tan(gqs)	slope (deg)
12	8	70	2,747	4,368	0,970	44



ibs = individual bench slope (angle)
gqs = general (overall) quarry slope (angle)
α = bench height (final, reclaimed)
β = bench width (final, reclaimed)
γ = distance from foot of bench

Limestone quarry

Quarry exploitation (based on 5-year mine planning)

rational and "sustainable" development (quick depletion and the parallel progressive rehabilitation of the benches)

Scheduling of mining operations (at ~1,3 million tons annual needs)

proper monitoring and "mapping" of the raw materials quality (from the blastholes and quarry benches)

The maximum value for MgO in the limestone is 1,30%

The exploitation method employed is that of an open pit quarry based on mining from top to bottom by drilling and blasting

The technical specifications for the design work of the Boka e Kuqe limestone quarry (according the Albanian mining law)

1. Safety distance from the quarry limits: 10m
2. Height of final benches: 12m.
3. Width of final benches: minimum 8m
4. Final overall pit slope angle: ~45deg
5. individual bench slope 70deg
6. Quarry access and transportation roads from the main existing road to each operating bench:
   - Width: 10-12 m
   - Maximum average slope: ~9-10%

Quarry rehabilitation

The rehabilitation plan for the first 5 years follows the corresponding 5-year mine plan

- Rehabilitation plan as per ESIA study (Environmental and Social Impact assessment),conducted in 2008 by the ATKINS international consulting company.
- Further to the ESIA that covered the entire project, focused Environmental Impact Assessment Studies and Quarry Management Plans were developed for the two associated quarries.
- There have been chosen three types of plants as per ESIA specifications, for the first rehabilitation and an extent of three more types was implemented for the coming rehabilitations
- Types of plants:
  - *Quercus ilcus*
  - *Pinus alepensis*
  - *Laurus nobilis*
  - *Salvia oficinalis*
  - *Lothata*
  - *Spartium junceum*

Rehabilitation

- First rehabilitation started in 2011, (One year after the first exploitation started)
- During exploitation top soil is removed and conserved for the rehabilitation process
- An forestry engineer was contracted to perform the study, scheme of planting and supervising the work of the quarry rehabilitation
- An rehabilitation plan is prepared every beginning of the year based on the quarry budget and as per ESIA
- During 2011 a total surface of 0.9 ha was rehabilitated (were planted more than 1200 plants)
- During 2012 (second year of rehabilitation there were planted 6 different types of plants with a total number of 1656
- Total rehabilitated surface up to date is 1.4 ha with a total number of trees 2856
- Next rehabilitation plan is: 2400 plants for a total predicted surface of 1.44 ha per limestone quarry

Quarry rehabilitation process

After rehabilitation