



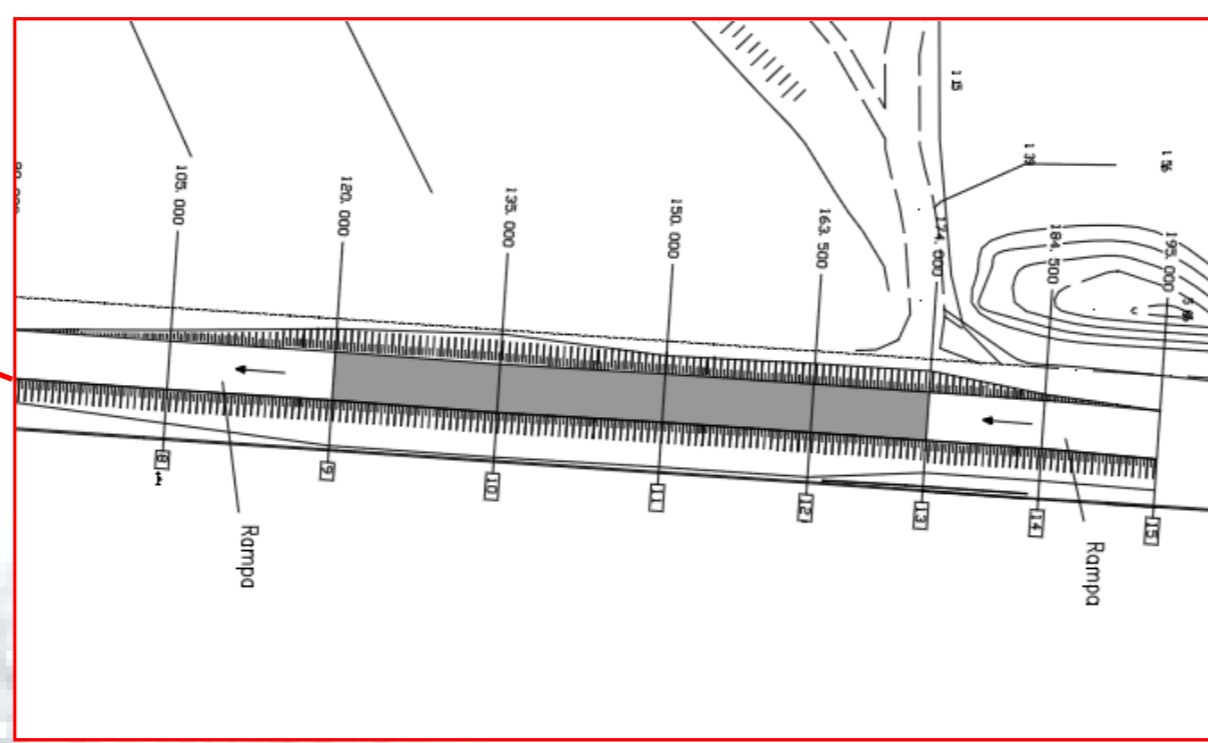
CLEANSED LIFE 12 ENV/IT/000652

"INNOVATIVE INTEGRATED METHODOLOGY FOR THE USE OF DECONTAMINATED RIVER SEDIMENTS IN PLANT NURSING AND ROAD BUILDING"

Department of Civil and Industrial Engineering (DICI) – University of Pisa – Italy

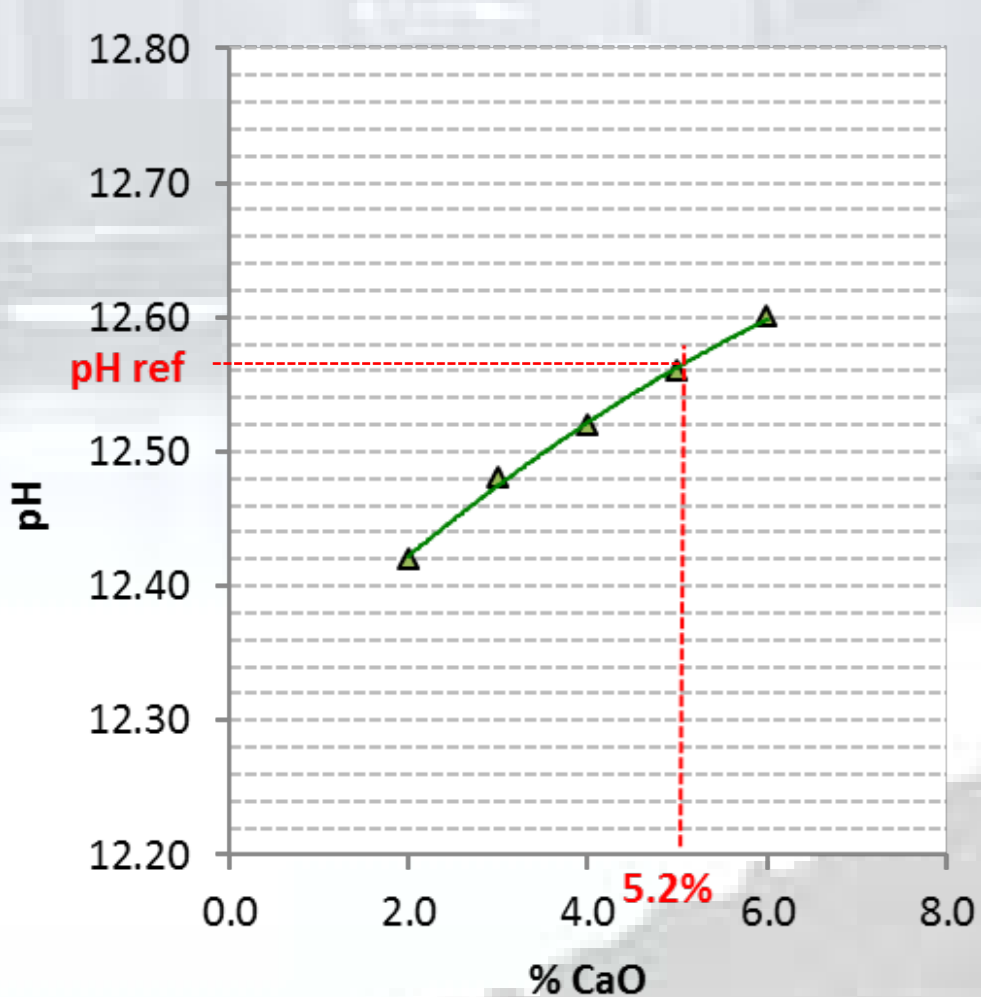
TREATMENT OF DREDGED SEDIMENTS

During the CLEANSED project, 836 m3 of dredged river sediments will be decontaminated and then used as a structural material for the construction of an experimental road

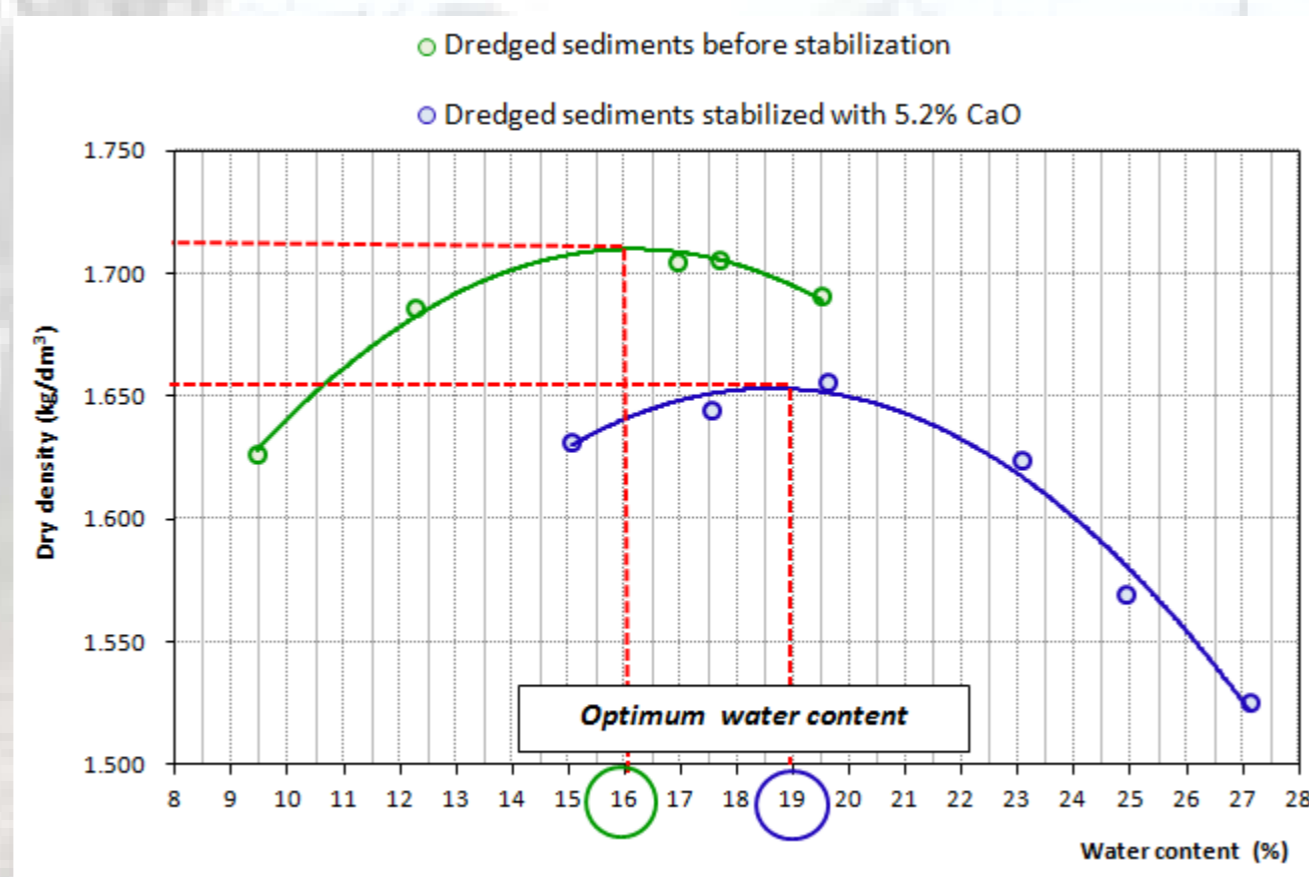


Laboratory stabilization of sediments with lime

1. Lime proportion requirement



2. Proctor compaction curve: optimum water content

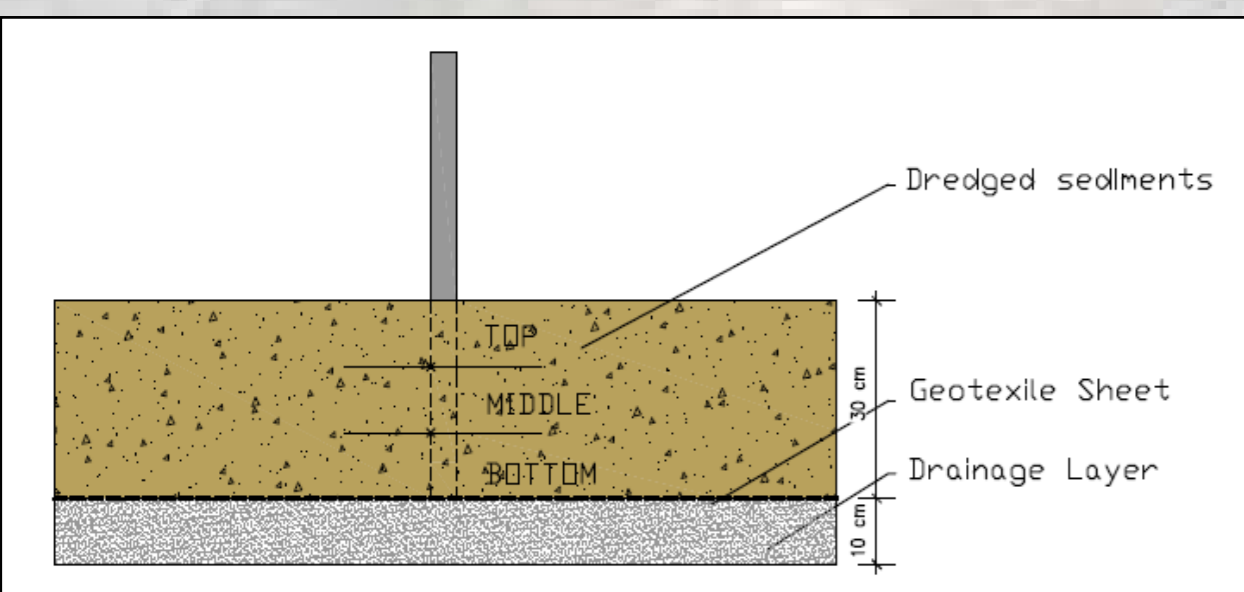


Sample ID	Dredged sediments	Dredged sediments + 5.2% CaO
Immediate bearing index	13	23
CBR (Curing that permits full soaking)	1	7
Linear Swelling Δh (%)	5.4	5.0



Main problem: excessive water content (that do not allow dredged sediments to ensure appropriate bearing capacity). It is necessary to reduce the water content at least up to 15-20%.

Laboratory procedure: realization of dewatering system for moisture control

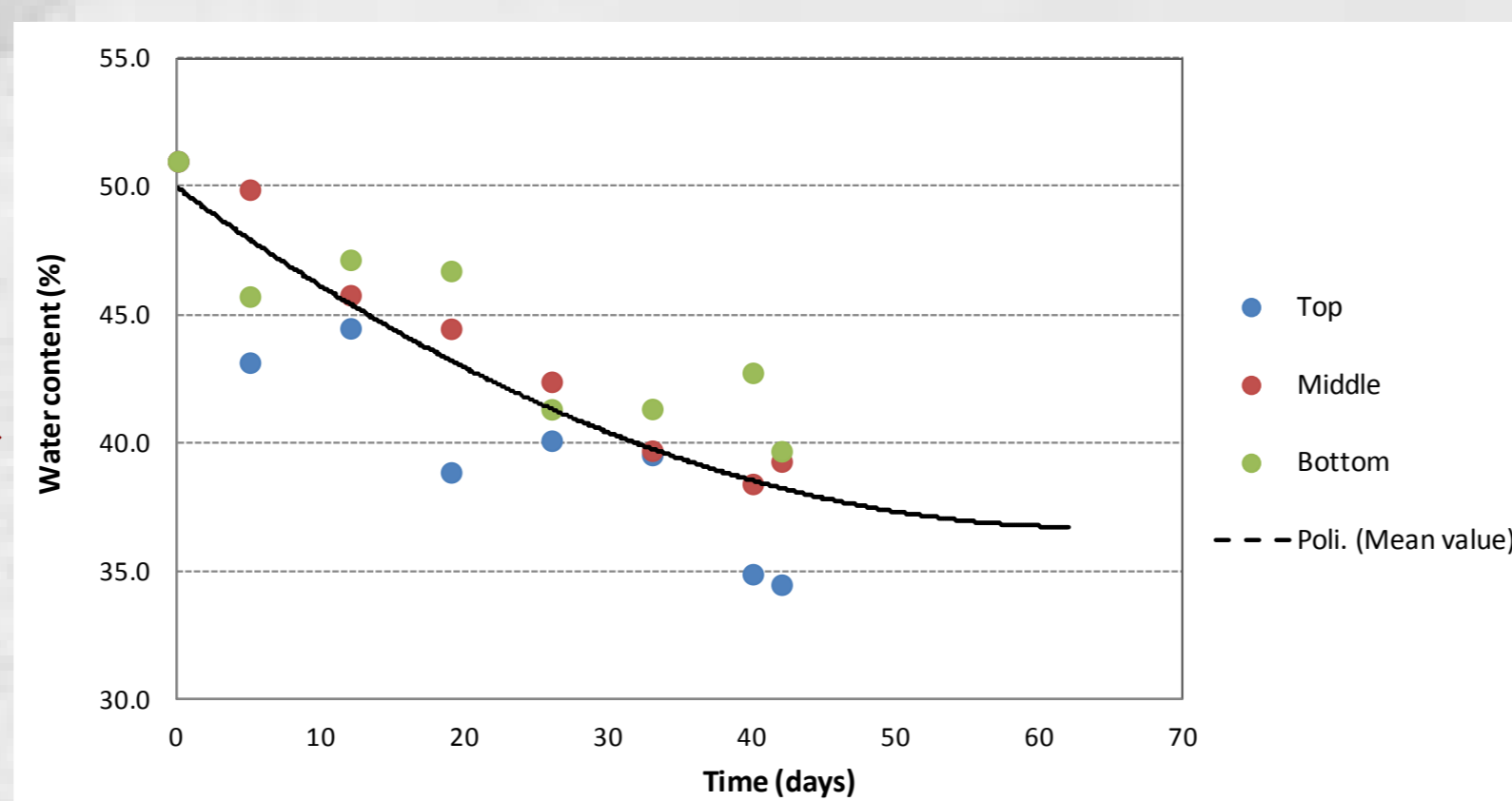


reproduced in a reduced scale:
Environmental temperature and moisture conditions:

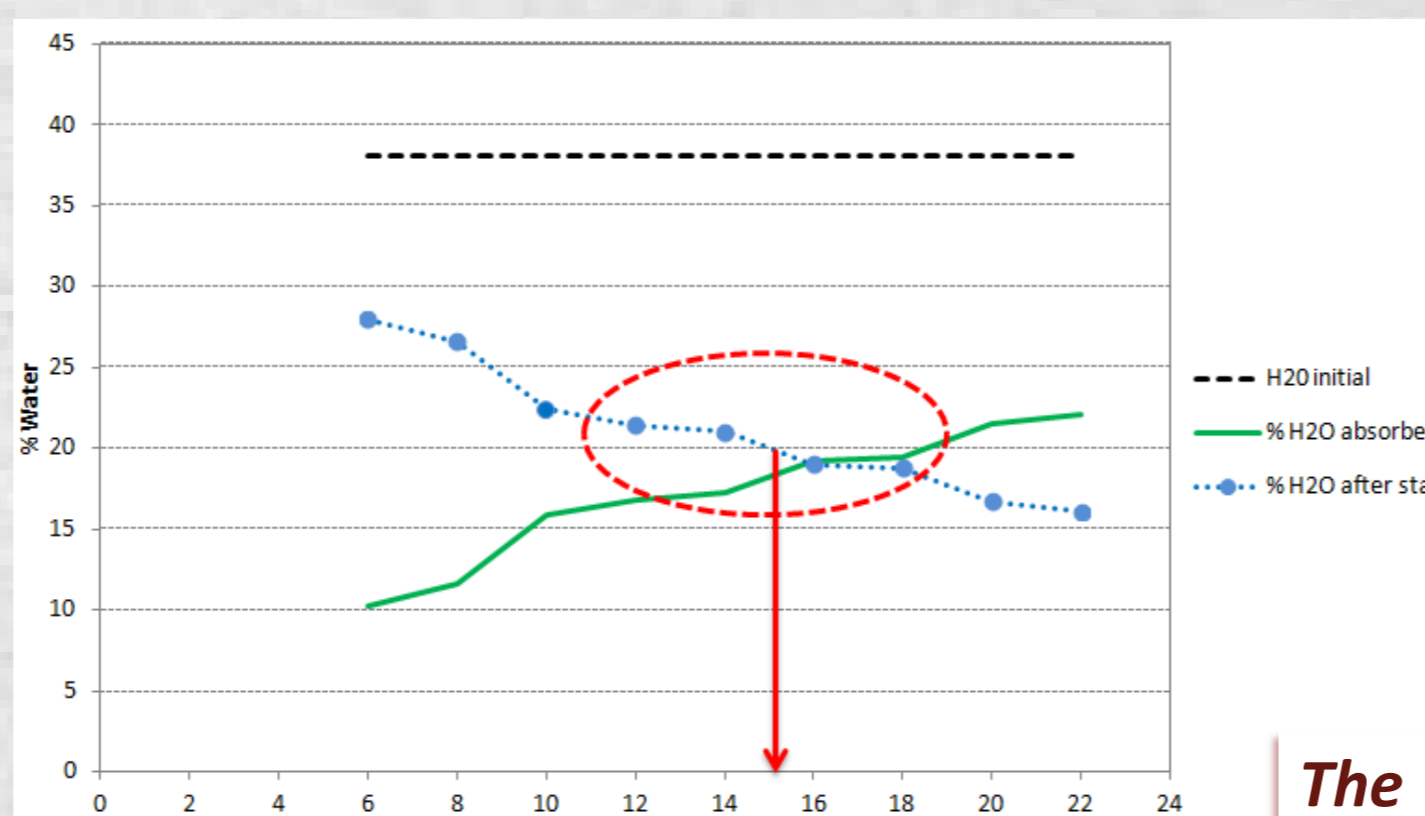
- no rain and/or direct radiation
- almost constant temperature (20°C)

Field conditions :

- lower drainage
- lateral confinement
- surface aeration



In controlled environmental conditions, the moisture content can be reduced up to 40% after a period of 7-8 weeks



Laboratory stabilization



In order to reduce the water content up to the level required for compaction, dredged sediments were mixed in laboratory with different lime percentages and the related water loss was evaluated.

The optimum water content of about 20%, determined by the Proctor compaction curve was obtained by using a lime percentage greater than 15%.

Partners:

