Nautical depth assessment

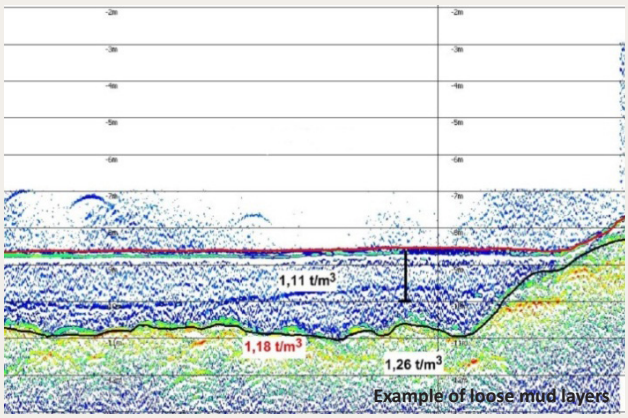
Optimise your maintenance dredging

Fluid mud layer in harbours form a major restriction to the nautical accessibility of a port. However, if the physical characteristics of the mud stay below a critical limit ships can navigate through loose mud layers and hopper dredging becomes more efficient.

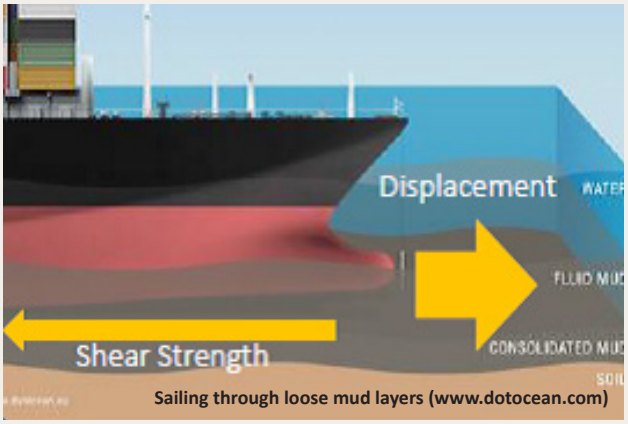
IHC MTI can measure these layers by means of new measurement techniques and IHC MTI's expertise in interpreting these measurements results in a dedicated advice on the best dredging strategy. Maintenance dredging will become more efficient by ignoring these loose mud layers.

Approach

In the past the measured physical characteristic in many ports was density. Density was historically chosen as a substitute for strength. With the availability of new techniques the measurement of the strength of the mud is possible. The proposed measurement technique allows visualization of a density and a strength profile. Based on these profiles the necessary nautical depth will be advised.



Example of loose mud layers



Sailing through loose mud layers (www.dotocean.com)

The technology innovator.

Nautical depth assessment setup

1. Feasibility
Brief literature study to gather practical and theoretical information available about the port i.e.: (not limited): survey maps, soil investigation and shipping.

2. Evaluate manoeuvrability of mud layers
Measurement of density and strength of the mud by free fall penetration measurements combined with dual frequency echo sounding.

3. Stakeholder management
Analyzing relevant stakeholders, presentation of preliminary results of manoeuvrability of mud layers and brainstorm with stakeholders about nautical depth. Explanation of the rheology of mud and impact on maneuverability.

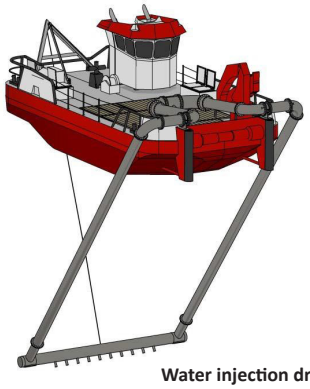
4. Conditioning of mud, dredging and survey strategy
Subject to the local context the optimum nautical depth is proposed. An efficient dredging and survey strategy will be designed, subjected to local circumstances, requirements, soil conditions and (new) nautical depth. Training of survey personnel will finalize this phase.

Benefits

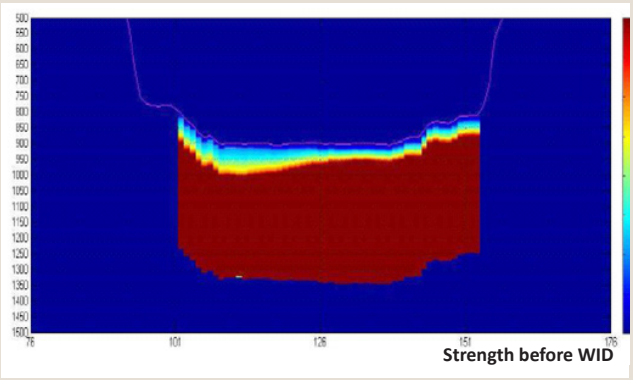
- More efficient hopper dredging
- Less ad-hoc maintenance dredging
- No danger of muddy sedimentation for shipping
- More draught in muddy waters
- Innovative, high knowledge solution is competitive to low budget dredgers
- Environmental opportunities

Why IHC MTI?

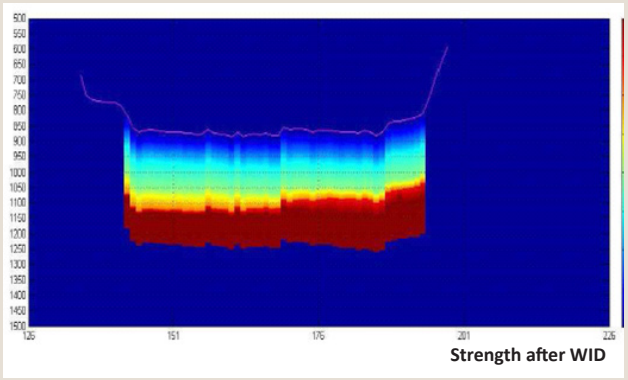
Projects, equipment, people: that is what dredging comes down to. It is a challenge, even for experienced contractors, to find the right balance between the scope and constraints of a dredging project; the specification of the equipment being used; and the competences of the people involved. All of MTI Dredging Consultants' services are based on these three pillars, which combine to determine the profitability of your operation.



Water injection dredger (WID)



Strength before WID



Strength after WID

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