



MAXAM is one of the world leaders in using Bulk explosives in underwater blasting. RIOFLEX –a high energy flexible explosive- combined with special Mobile Manufacturing Units –cassettes- technology, and a well-developed procedure that includes customized blast design allows to achieve excellent results in terms of fragmentation, productivity and safety.

APPLICATIONS

✕	Ports and Channels
✕	Marine mining
✕	Rivers and Sea
✕	Salty and fresh water

BENEFITS

- ✕ The use of Bulk explosives –sensitized in the hole- provides huge advantages in terms of manufacture, transport and storage due to the use of Oxidant Matrix (Classification 5.1)
- ✕ High productivity achievements due to likely bigger drilling patterns when compared to patterns loaded with packaged explosives.
- ✕ Possibility to decrease the total time needed to perform all Drilling and Blasting activities, decreasing customers’ fixed costs when compared with traditional techniques.
- ✕ Excellent and flexible fragmentation results to perfectly meet the need of the dredging equipment utilized.
- ✕ Specialized technical assistance to study and control all environmental effects such as ground vibrations and hydraulic shockwaves.
- ✕ Adaptable high-tech Mobile manufacturing Units –UW cassettes- custom designed to drilling platform specifications.
- ✕ Complete set of comprehensive reporting and documentation.
- ✕ Continuous Quality and Safety programs.

EQUIPMENT AND PRODUCTS

MAXAM basic key equipment and products for Underwater blasting are:

- ✕ RIOFLEX MARINE explosive
- ✕ UW Cassettes
- ✕ RIOBLAST software

RIOFLEX MARINE. The main product successfully used is RIOFLEX MARINE. This is an explosive with great performance characteristics, based on watergel technology, gas sensitized and cross-linked, representing one of the greatest technologies in bulk applications. With a variable density and energy that can be adjusted, it is a water-proof product that can stay inside a wet borehole with static water up to four weeks without changing its characteristics and performance, in regular conditions.

MMU-UW CASSETTES. High –tech adaptable pumping units, developed by MAXAM, are used in the loading of explosives on drilling platforms. These units assure the accuracy in the quantity of explosive per borehole –to avoid vibrations issues- and avoid spillage.



Safety in the use, adequate production –up to 100 kg/min–, accuracy in loading and efficiency –low maintenance needed– are the main features of UW cassettes.

RIOBLAST. MAXAM simulation, blast design and analysis software, developed in-house. It is perfectly suitable to address specific underwater blasting issues by performing comprehensive simulations on charging, timing, ground vibrations and fragmentation before the blast.

MAXAM's experienced team is, in fact, the third part of the combination of equipment and tools to assure successful underwater projects.

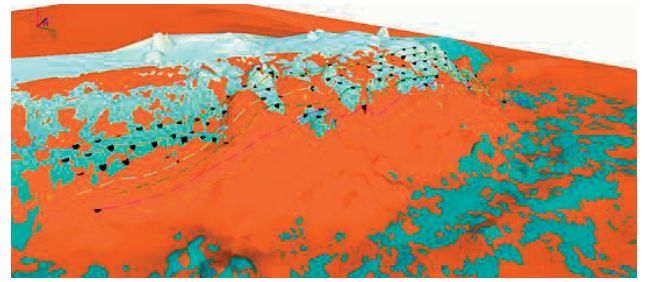


METHODOLOGY

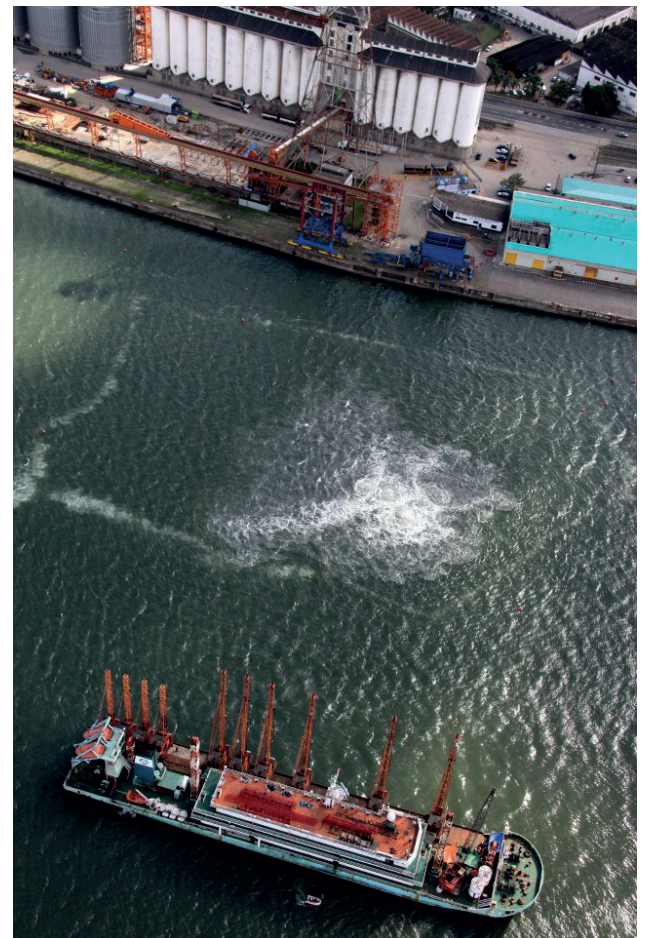
MAXAM's experienced team uses state-of-the art technologies, bulk products and initiation systems to provide Underwater Blasting Services.

There are three major factors or objectives associated with underwater blasting operations:

- ✗ Specific fragmentation size
- ✗ Ground vibrations and Hydraulic shock waves control
- ✗ High production schedule



The combination of these three aspects is fundamental for the success of underwater projects.



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