

Lecture W15

Emulsion Waste Disposal

M Montoya



BACKGROUND

GENERATED DURING:

1. Explosive mass manufacturing
2. Cartridging
3. Storage
4. Site operation handling

OF:

- A. Matrix
- B. Bulk sensitized emulsion
- C. Plastic film sensitized packaged emulsion
- D. Paper wrapped sensitized packaged emulsion

DUE TO PROBLEMS LIKE:

- | | |
|------------|--|
| 1.A. | Cristallization and or wrong fuel/oxidizer ratio |
| 1.B. | Density |
| 2.C.D. | Bad presentation |
| 3.C.D. | Shelf-life time for guarantee |
| 4.A.B.C.D. | Cristallization/desensitation |

AFTER THE USE OF RECOVERY METHODS:

- 1.A. Return of small amounts into the premix tank
- 1.B. Return of small amounts into the blender
- 2.C.D. Return of small amounts of recovered explosive mass into the cartridgeing process or into the blender
- 3.C.D.
- 4.A.B.C.D. Return of small amounts of recovered explosive mass into the cartridgeing process of the same product; repackaging in bigger sizes cartridges as blasting agent

WITH LIMITATION AS:

- Safety and quality risk
- Environmental regulations
- High operative costs
- Slow process

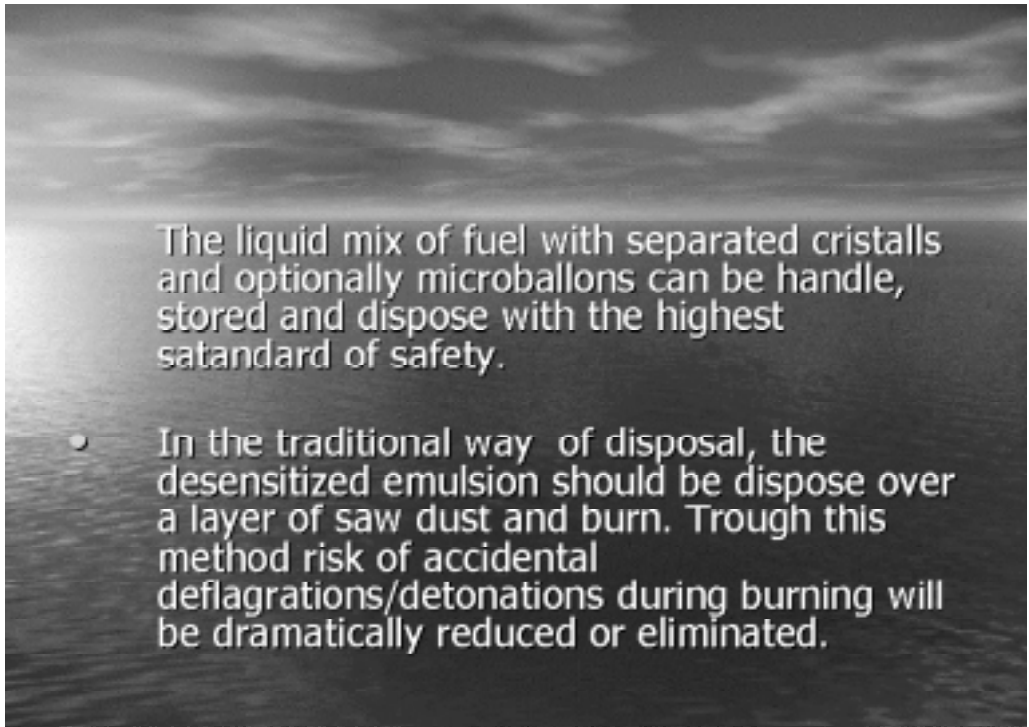
EMULSION DISPOSAL IS UNAVOIDABLE

RECCOMENDATIONS

- I. Disposal of the main ammount trough blasting in open-pit mine operations
- II. Generation of a safety method for emulsion desensitisation (breakdown).
- III. Method for a safe burn of desensitized emulsion
- IV. Design for a method to reuse the desensitized emulsion in the production of other explosives.

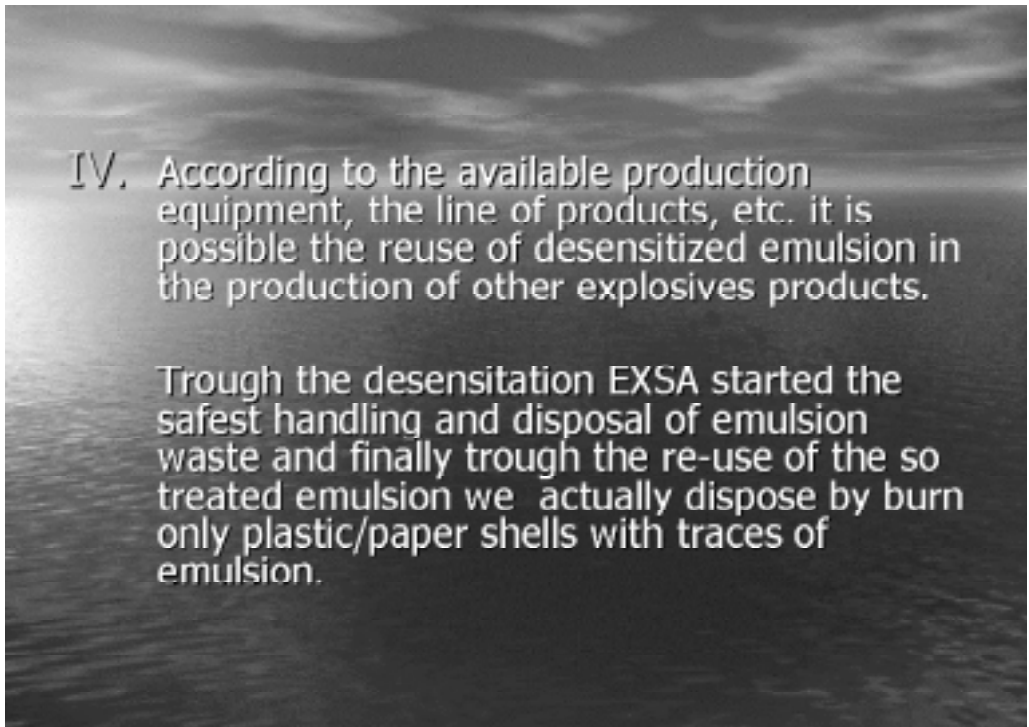
- I. According to local regulations, the available type of local operations, and customer relationship.
Recommende borehole size: 8" or bigger
Rate : Up to 5 % of the total explosive weight
- II. Dilution of miss-quality emulsion with light oil or diesel oil (with its subsequent breakdown) mixing them in a safe mixer as Nautamix.

High viscous product as emulsion for cold wrapping in Rollex machines can be treated easily and safe.



The liquid mix of fuel with separated cristalls and optionally microballons can be handle, stored and dispose with the highest satandard of safety.

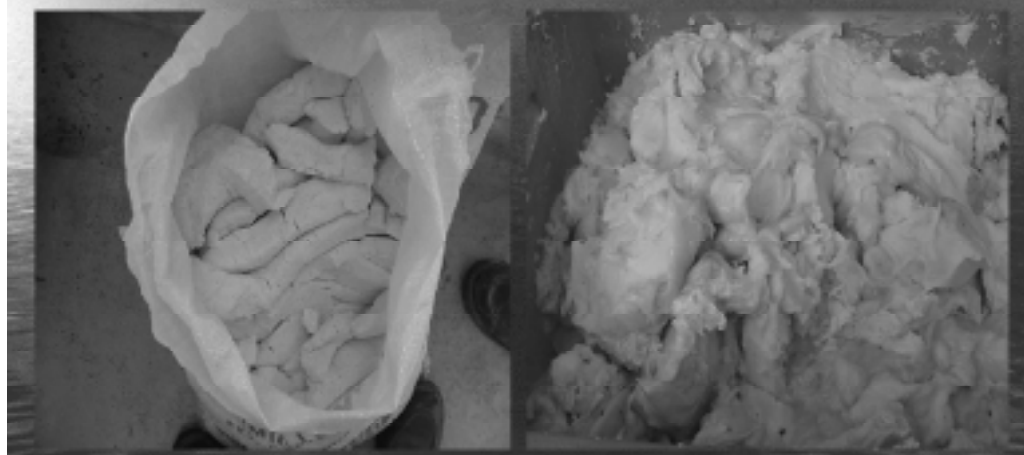
- In the traditional way of disposal, the desensitized emulsion should be dispose over a layer of saw dust and burn. Trough this method risk of accidental deflagrations/detonations during burning will be dramatically reduced or eliminated.



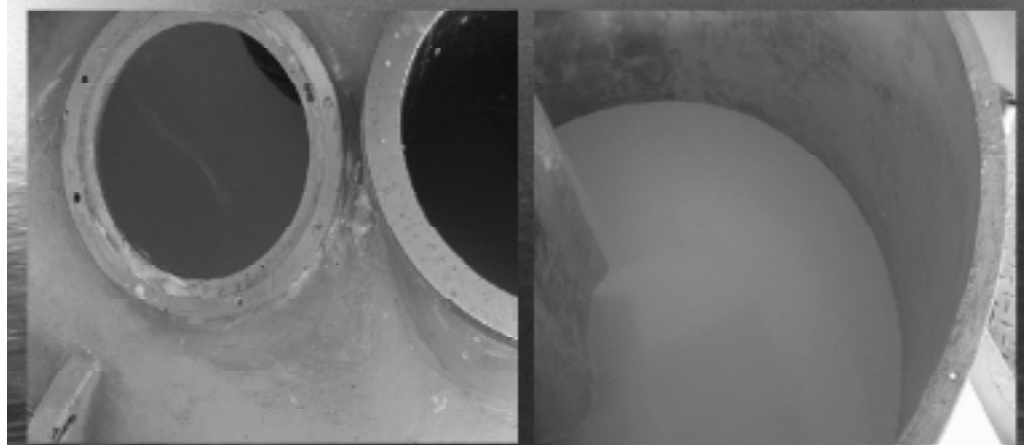
IV. According to the available production equipment, the line of products, etc. it is possible the reuse of desensitized emulsion in the production of other explosives products.

Trough the desensitation EXSA started the safest handling and disposal of emulsion waste and finally trough the re-use of the so treated emulsion we actually dispose by burn only plastic/paper shells with traces of emulsion.

EMULSION WASTE



DESENSITISED EMULSION BY BATCH



**EXPLOSIVE PRODUCT WITH DESENSITIZED
EMULSION AS COMPONENT**

