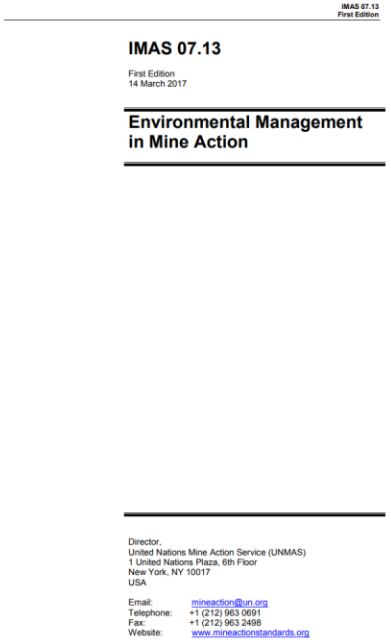
GICHD

MINE ACTION AND THE ENVIRONMENT
TIME FOR A REVIEW?

Current Mine Action Environmental Standards.

- IMAS 07.13 First Edition. March 2017.
- *“The standard do not enforce specific practical mitigation measures but is a framework giving the tools for the NMAA to define these.”*
- The work of defining these *practical mitigation measures* largely remains to be done.



IMAS 07.13
First Edition

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First Edition
14 March 2017

Environmental Management in Mine Action

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Small Arms Ammunition

- Probably the most common item of EO destroyed by count and weight.
- Often burnt in improvised burning tanks or pits with the residue buried.
- Are we aware of the potential environmental impact?
- European Waste catalogue classifies as Toxic Solid UN 6.1

HMTA -(W-Ni-Fe and W-Ni-Co)

- Heavy Metal Tungsten Alloys, typically used for kinetic energy penetrators is now deemed to present a greater potential threat than Depleted Uranium.
- The issue is the alloy. For example cobalt is a carcinogen even at low levels (Class 2A).
- SAA containing DU and HMTA alloys (W-Ni-Fe and W-Ni-Co) should not be incinerated.

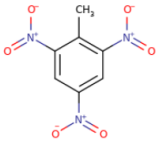
OBOD

- Both NAMSA and the NSPA will not allow OBOD when contracting stockpile destruction.
- The EU no longer permits large scale OBOD to be conducted by member states. Directive 75/442/EEC and 91/689 – waivers are allowed.

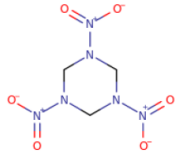
INSENSITIVE MUNITIONS

- Increasing proportion of ordnance over coming years will be insensitive munitions.
- Energetic formulations containing DNAN, NTO and Ammonium Perchlorate (AP).
- In Canada ammunition containing AP is not permitted for use on ranges.

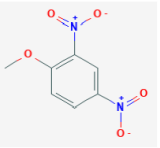
-TNT



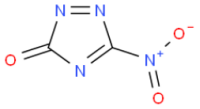
-RDX

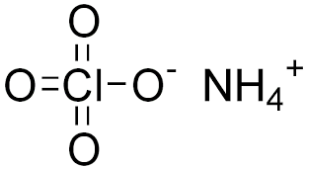


-DNAN

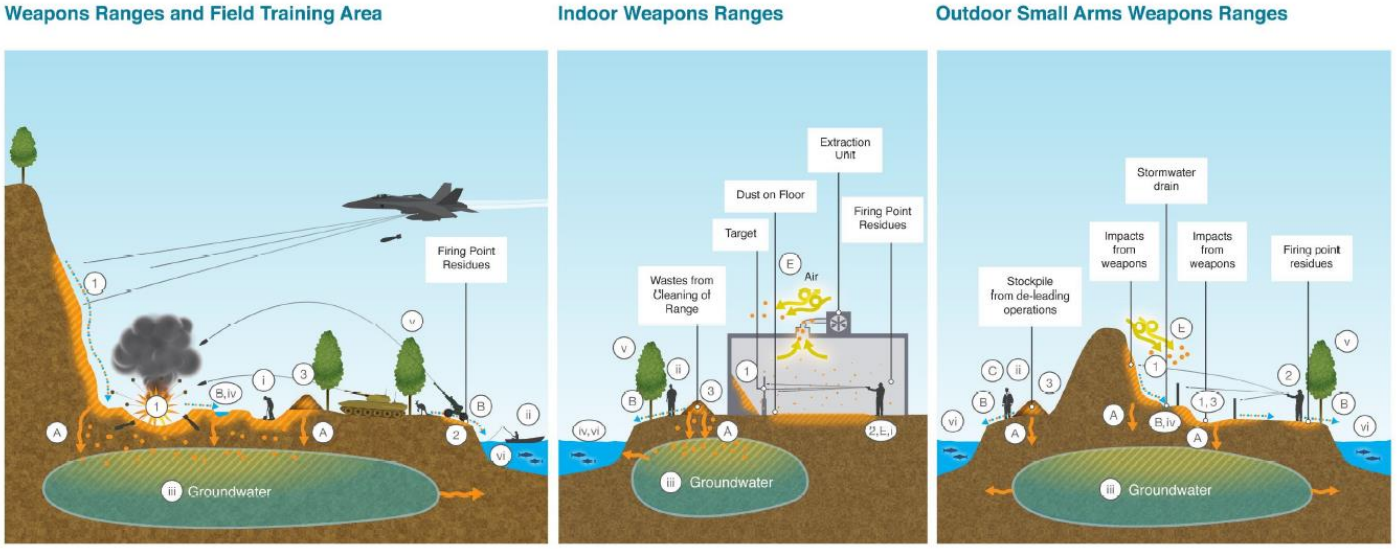


-NTO





Pollutant Linkage Model



Sources

1. Weapons Range – impact area
2. Weapons Range – firing point
3. Impacted Soils / Burials

Potential migration pathway for contamination

- A Vertical migration into soil / groundwater
- B Surface runoff to adjacent land of water bodies
- C Direct Contact
- D Groundwater extraction
- E Airborne particulates

Potentially sensitive receptors

- i Site users (Defence staff and contractors)
- ii Other humans (if off the Defence estate)
- iii Groundwater
- iv Surface water bodies
- v Terrestrial flora/fauna
- vi Aquatic flora/fauna

Factors to consider

- Site use – historic and planned
- Soil type and chemistry
- Infrastructure details.
- Groundwater depth, flow and use.
- Surface water/sediment management.
- Health & Safety of personnel
- Soil and water management during site works
- Waste management practises
- High potential for unexploded ordnance

SUMMARY

- HMA has much to learn on the issue of toxic residues from explosive ordnance.
- Range management in many countries is already relatively well advanced on these issues.
- HMA may look to catch up.
- DO NO HARM.
- Show ALL REASONABLE EFFORT.