

Characterization of ranges



Conclusions to Date

- Contaminant, distribution, and concentrations vary widely for different **types of ranges**
- **Artillery ranges** - RDX and TNT in surface soils in low ppb range, distribution spatially heterogeneous, low level GC-ECD method required for characterization
- **Ruptured UXOs and low order detonations** - localized contamination in % levels
- **Antitank ranges** – HMX up to tens of hundreds of ppm, concentration declines with distance from targets
- **Hand grenade ranges** - RDX and TNT in low ppm, distribution more homogeneous than found at other ranges
- **Multi-increment composite samples** and **careful subsampling** required
- Detonating UXO with **C4** can cause substantial contamination; too little C4 can lead to low-order detonations; **shaped-charges** tend to produce partial detonations and significant contamination
- **Air-Ground range (Cold Lake)** – TNT up to hundreds of ppm, distribution homogeneous due to range management (tilling)