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TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.
Environmental Acquisition & Logistics Sustainment Program Elements

- ORDNANCE ENVIRONMENTAL PROGRAM
- STRATEGIC ENVIRONMENTAL RESEARCH AND DEVELOPMENT PROGRAM
- TOXIC METAL REDUCTION PROGRAM
- ENVIRONMENTAL SECURITY TECHNOLOGY CERTIFICATION PROGRAM
- ZERO FOOTPRINT CAMP
- ARMY-INDUSTRY SOLVENTS ALTERNATIVES DATABASE
- SUSTAINABLE PAINTING OPERATIONS FOR THE TOTAL ARMY
- ARMY-NAVY CHROMATE ALTERNATIVE TESTING

EALSP

Sustain Mission Readiness
Enhance Logistics Support
Integrate Environmental Acquisition
Improve Soldier Survivability

Environmental Quality Technology

Joint / Office of the Secretary of Defense

Corrosion Prevention and Control

Special Programs

Support to PEOs/PMs

- PROTECTIVE COATING DEVELOPMENT
- MATERIAL DURABILITY TESTING
- NON-METAL RESEARCH
- PERCHLORATE REDUCTION PROGRAM
- OZONE DEPLETING CHEMICALS
- GREENHOUSE GASES
- RDT&E MATRIX SUPPORT
- ENVIRONMENTAL RISK MANAGEMENT
- PROGRAMMATIC INFORMATION INTEGRATION
What does RDECOM do?

- Polymer Processing
- Command and Control
- Directed Energy
- Vehicle Technology
- Propulsion & Structures
- Chemical and Biological Protection & Decontamination
- Human Research & Engineering
- Human Systems
- Clothing & Individual Equipment
- Food Service Equipment
- Aeroflightdynamics
- Aviation Applied Technology
- Conventional Ballistics
- Weapons & Materials Research
- Munitions Engineering Technology
- Weapons & Software Engineering
- Vehicle Electronics & Architecture
- Sensors
- Night Vision and Electronic Sensors
- Tactical Vehicles & RAM
- Combat Vehicles
- Force Protection Technology
- Polymer Processing
- Command and Control
- Directed Energy
- Vehicle Technology
- Propulsion & Structures
- Chemical and Biological Protection & Decontamination
- Human Research & Engineering
- Human Systems
- Clothing & Individual Equipment
- Food Service Equipment
- Aeroflightdynamics
- Aviation Applied Technology
- Conventional Ballistics
- Weapons & Materials Research
- Munitions Engineering Technology
- Weapons & Software Engineering
- Vehicle Electronics & Architecture
- Sensors
- Night Vision and Electronic Sensors
- Tactical Vehicles & RAM
- Combat Vehicles
- Force Protection Technology
Materials/processes/technologies should not be considered innocent until proven guilty in the court of environmental sustainability.
Current Policy and Guidance vs. Changing Regulations

Army/DoD Policy and Directives

Changing Regulations

Current/Proposed Guidance Documents
Why do we need ESOH Guidance?

Bottom Line: Need to make Environment, Safety and Occupational Health (ESOH) a performance characteristic
Examples of Need for ESOH Data Guidance
What is DESHE?

- Developmental Environment, Safety and Occupational Health Evaluation (DESHE)
  - Process and not a report or document
- Purpose: Develop and document a baseline level of ESOH performance data for each level of research in order to support risk-based decisions
- Phased approach to gather, develop and document ESOH performance data for materials, processes and technologies during all phases of RDT&E
  - Data requirements determined by Budget Activity (BA) level or technology readiness level (TRL)
  - Early stages - qualitative data
  - Higher maturity technologies - More robust, quantitative data
What is DESHE?

**Scope**
All Army RDTE projects (Budget Activity (BA)1-BA4) not part of acquisition program (i.e. pre-system), with some exceptions (e.g. software development)

**Applicability**
Initially required for all projects funded by EALSP though all Army RDT&E projects can use DESHE process

**Use**
ESOH performance data should be used to support required ESOH acquisition documentation/support informed decisions

Driven by Army RDECOM EALSP
Designed with the researcher in mind
Approach to DESHE

- Separate into 3 focus areas
  - Material – Ex: energetic material, solvent
  - Process – Ex: plating operation, material production
  - Technology – Ex: new engine design, electronic equipment

- Develop basic questions that should be addressed at each stage of development
  - Not prescriptive
  - Heavily rely on professional judgment

- Provide data points to address each of these questions
  - Ex: Water solubility and vapor pressure impact how the material may transport in the environment

- More definitive answers as material, process or technology maturity increases
Guidance Comparison

Programmatic Environment, Safety and Occupational Health Evaluation (PESHE)

- **Scope:** All Acquisition programs must maintain a PESHE
- **Target Audience:** DoD Acquisition community (Program Managers)

ASTM E2552-08 - Standard Guide for Assessing the Environmental and Human Health Impacts of New Energetic Compounds (Army Public Health Command)

- **Published May 2008**
- **Scope:** New energetic materials in Research and Development
- **Target Audience:** Researchers, toxicologists working with new energetic compounds

Environmental and Human Health Hazard Assessment of Chemicals to Support DoD Acquisitions (OSD Chemical and Material Risk Management Directorate)

- **Draft**
- **Scope:** New materials throughout acquisition
- **Target Audience:** DoD Acquisition community (Program Managers)

DESHE (Army RDECOM EALSP only)

- **Final - September 2010**
- **Scope:** All Army RDTE on materials, processes and technologies
- **Target Audience:** Army researchers, lab managers, research program directors
Where the DESHE Fits

User Needs

Technology Opportunities & Resources

MATERIEL SOLUTION ANALYSIS

Tecnology Development

ENGINEERING & MANUFACTURING DEVELOPMENT

PRODUCTION & DEPLOYMENT

OPERATIONS & SUPPORT

DESHE (RDECOM EALSP)

PESHE

Environmental and Human Health Hazard Assessment of Chemicals to Support DoD Acquisitions (OSD)

ASTM E2552-08 - Standard Guide for Assessing the Environmental and Human Health Impacts of New Energetic Compounds (Army Public Health Command)
How Does it Work?

Example for Material–based DESHE

BA1
- Computational predictions from chemical/physical performance parameters and toxicity
- In-vitro toxicity screening methods
- Acute toxicity data
- Professional judgment

BA2
- Experimental values of chemical and physical characteristics
- In-vitro toxicity screening methods
- Acute toxicity data

BA3
- Biodegradation in various media
- In vivo toxicity testing; acute, sub-acute
- Environmental toxicity
- Computational predictions from chemical/physical performance parameters and toxicity
- Experimental values of chemical and physical characteristics
- In-vitro toxicity screening methods
- Acute toxicity data
- Professional judgment

BA4
- Chronic toxicity
- Occupational exposure studies, including absorption tests
- Computational predictions from chemical/physical performance parameters and toxicity
- Experimental values of chemical and physical characteristics
- In-vitro toxicity screening methods
- Acute toxicity data
- Biodegradation in various media and environmental toxicity
- In vivo toxicity testing; acute, sub-acute
- Professional judgment

Acquisition Documentation
- PESHE
- NEPA
- HHA

Acquisition Documentation
- PESHE
- NEPA
- HHA
Path Forward

Current approach:
- The DESHE will ONLY be required for research projects funded internally by RDECOM EALSP
- Distribute DESHE Guide to research community per request
- Update ASTM E2552-08

Future plans (Pending successful implementation in the EALSP):
- Staff through RDECOM for wider use
  - Maintain EALSP as central repository for DESHE support
- Recommend implementation of the DESHE process in select programs

Other programs that may fit the DESHE process (recommended):
- Army RDT&E projects that receive RDT&E dollars (BA1-BA4)
- Projects not currently included in an Acquisition program
- Projects that have a structured program review
  - Examples include Army Technology Objective (ATO), Small Business Innovative Research (SBIR) Program, Small Business Technology Transfer (STTR) Program, Strategic Environmental Research and Development Program, Environmental Security Technology Certification Program
- Projects that are funded over $250K per year
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