



# AMMUNITION STOCKPILE RELIABILITY PROGRAM (ASRP) LABORATORY

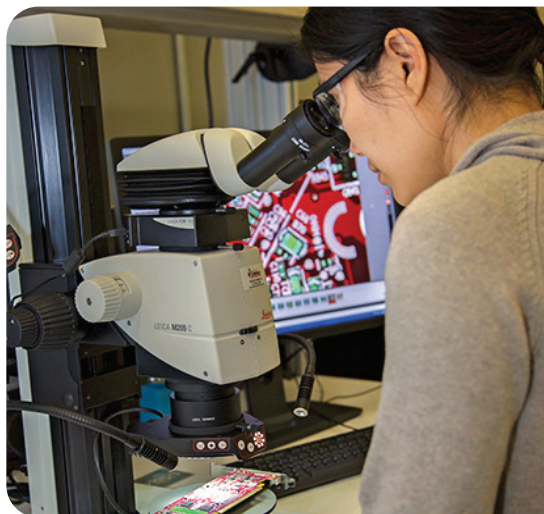
## LABORATORY INFORMATION FACT SHEET

### CONTACT US:

Technology Transfer Office

Email: [usarmy.pica.devcom-ac.mbx.t2@army.mil](mailto:usarmy.pica.devcom-ac.mbx.t2@army.mil)

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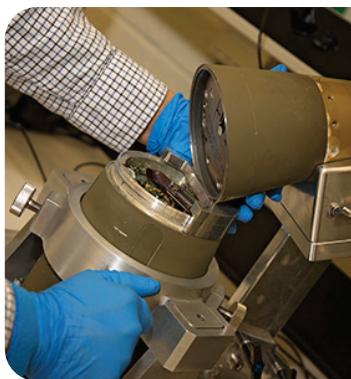
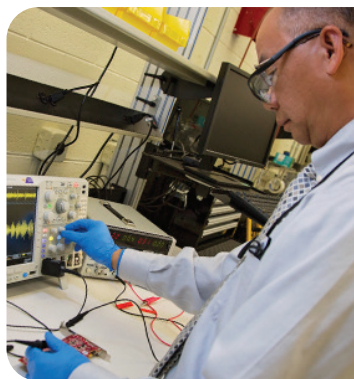


*The Quality Engineering & System Assurance (QESA) Reliability Lab offers extensive problem solving, failure analysis, detection of counterfeit electronic parts and ammunition stockpile reliability laboratory testing program for smart munition such as Excalibur, Precision Guidance Kit (PGK), etc.*

### TECHNOLOGY/FACILITY DESCRIPTION:

The Ammunition Stockpile Reliability Program (ASRP) Laboratory characterizes aging or degradation mechanisms through a series of

optical inspections and program specific evaluation methods, which cannot be obtained by traditional ballistic testing, to formulate an accurate engineering prediction of the physical condition and reliable performance of the projectiles. The process has been benchmarked with Army Material Systems Analysis Activity (AMSAA) and academia (University of Maryland) to determine/mitigate electronic failure modes and causes.



### EQUIPMENT AND EXPERTISE AVAILABLE:

- Optical Stereo Microscope: Offers 20.5:1 zoom capability, resolves structural detail down to 476nm. Combines high resolution & depth of field together for ideal 3-D observation
- Digital Oscilloscope: 350MHz Bandwidth, 9kHz - 3GHz RF Range includes a logic analyzer, spectrum analyzer and protocol analyzer to evaluate module performance in time and frequency domains in a single screen
- Four work stations equipped with standard electronic tool sets
- Project specific tools (surveillance projectile tester) and fixtures designed and manufactured by DEVCOM's Armaments Center to disassemble electronic subsystems for smart munitions such as Excalibur rounds and inert landmine electronic components such as Gator CBU capacitors
- Physics of failure analysis of electronic circuit boards using Center for Advanced Life Cycle Engineering (CALCE) software
- Engineering prediction and trend analysis
- Assess smart munitions stockpile to comply with AR 702-6
- Identify shelf life/degradation rates of stockpiled munitions
- Decrease Ammunition Stockpile Reliability Program (ASRP) test cycle and surveillance inspection
- Validate shelf life extension programs and munition readiness
- Eliminate potential defective material entered into stockpile
- Detect defective and potential counterfeit electronic parts