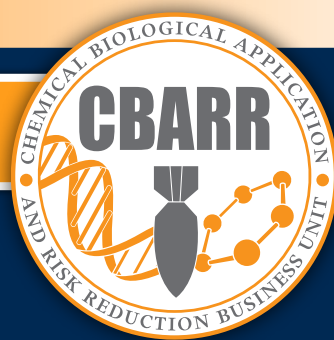


Sample Screening Process



Process Overview

- 1 Sample is collected from the site location.
- 2 Vapor screening of the environmental sample is conducted in the field to determine if it is safe for transport.
- 3a If headspace is known and the sample is cleared of chemical agent, it is commercially shipped to the EML.
- 3b If the sample is unknown, it is transported by the 20th CBRNE (Chemical, Biological, Radiological, Nuclear and Explosive) Command to ECBC's Chemical Transfer Facility (CTF), the nation's only Single Small Scale Facility under the Chemical Weapons Convention.
- 4a All samples are prepared in batch sizes containing up to 20 samples per matrix type. Depending on the determined compounds of interest, between one and five methods are used to analyze each sample.
- 4b A risk assessment of an unknown sample, typically glassware containing liquids and solids, is conducted at the CTF prior to sample preparation.
- 5 Individual methods test for chemical warfare material, agent breakdown and degradation products, toxic industrial compounds and unknowns. Each method can take up to 12 hours to prepare and analyze, and is tested with analytical instruments.
- 6a Gas Chromatography Mass Spectrometry (GC/MS) analyses use five-point calibration to confirm detections by near real-time instruments and provide historical area monitoring documentation of known samples.
- 6b Liquid Chromatography Mass Spectrometry (LCMS-MS) analyses use seven-point calibration for unknown samples.

Quality Assurance Measures (Per Matrix / Per Batch)

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

A separate aliquot of an ordinary sample to which a known amount of a standard or reference material is added before analysis, usually for the purpose of assessing the effect of the matrix on the performance of the measurement process.

Method Blanks

A clean matrix, usually consisting of reagent water, clean sand or glass beads, which is carried through the complete preparation and analytical procedure. The Method Blank is used to evaluate contamination resulting from the complete preparation and analytical procedure.

Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD)

A known matrix spiked with compound(s) representative of the target contaminants. This is used to show that sample preparation procedures do not contribute to loss of contaminant.