

For information, contact: U.S. Army Engineering & Support Center, Huntsville
4820 University Square
Huntsville, Alabama 35816-1822
Huntsville Center
Phone 256-895-1762
Fax 256-895-1798
<http://www.hnd.usace.army.mil/ow/tech/techindx.html>

uxo calculator

Faster, easier predictions with this new statistical tool

Developed by U.S. Engineering and Support Center, Huntsville, UXO Calculator is now used to support site characterization work at ordnance sites during engineering evaluations/cost analyses (EE/CA's).

A user-friendly software package, the new statistical tool provides two basic types of information:

- Before sampling, Calculator helps determine how much sampling will be needed to meet goals.
- After sampling, Calculator helps determine confidence levels in ordnance contamination predictions.

To make predictions, UXO Calculator assumes a negative binomial distribution for unexploded ordnance (UXO). That means, yes or no, there is or is not UXO in a given area or at a given anomaly. From that assumption, the mathematics of the tool calculates the number of UXO items remaining in a homogenous area or the probability that there is no more UXO in a given area.

Even further, Calculator can determine the probability that there is no UXO in areas where no UXO has been found. If we are not finding UXO, is there none to be found, or are we not taking enough samples to determine if there is any? UXO Calculator can help answer that question. Using this tool, we can make predictions such as the following: We are 90% confident that there is no UXO in this sector because we found no UXO in 20 acres of sampling.

UXO Calculator can also be used to determine UXO density in a given sector. Although SiteStats/GridStats is still appropriate for “mag and flag” sites, UXO Calculator is the statistical tool of choice where geophysical mapping is used to select anomalies of interest. UXO Calculator offers flexibility and speed. It enables investigators to play “what if” games to develop statistics for various data discriminators. SiteStats/GridStats, on the other hand, was designed to produce statistics for site homogeneity and the amount of sampling needed based on a set data discriminator of five.

UXO Calculator has six modules enabling OE teams to determine statistical characteristics of UXO at a site. Those modules provide ordnance teams with details on factors such as expected density, number of ordnance items in a sector, and the probability of no UXO. Such information contributes to the decision-making process.