

## **CONCURRENT SESSION 3 – BIOLOGICAL AGENT SAMPLING & ANALYSIS**

### **METHODS**

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#### **Use of Innovative Packaging to Facilitate On-Site Treatment of Waste from a *Bacillus anthracis* Release Incident**

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A wide-area release of a persistent biological agent such as *Bacillus anthracis* (Ba) and subsequent response and recovery activities will likely generate large quantities of waste that will require treatment and disposal. It is likely that most of the waste will be packaged in bags at the contaminated site (either before or after decontamination activities) and moved to a nearby staging site for collection, possible on-site treatment, and shipment to one or more treatment/disposal facilities. If the waste can either be treated in situ as part of decontamination operation or treated on-site through a separate operation, and the waste can be demonstrated to not have detectable levels of viable Ba spores, then the waste may be able to be disposed of as conventional solid waste, which would greatly facilitate disposal activities.

This presentation will discuss ongoing work to utilize innovative semi-permeable non-woven packaging materials that could be made into bags to hold the waste materials. These semi-permeable materials would allow gaseous fumigants such as chlorine dioxide (ClO<sub>2</sub>) to pass into the bags but would not allow residual spores to penetrate the walls of the bags and exit into the atmosphere. Testing is currently occurring at the bench-scale, using permeation chambers, to assess the ability of the materials to allow ClO<sub>2</sub> to penetrate through the bag material and, using established fumigation criteria, to provide sufficient concentration-time exposure of the waste inside the permeation chamber. A separate set of experiments are ongoing to confirm that spores on one side of the material barrier cannot pass through the barrier.

This work will eventually culminate in a field demonstration simulating a wide-area contamination incident at a US Coast Guard facility. A successful demonstration in the field will enable federal and state responders to add a useful tool to their response toolbox to facilitate the management of waste from biological agent incident.

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