

Biological Event Restoration



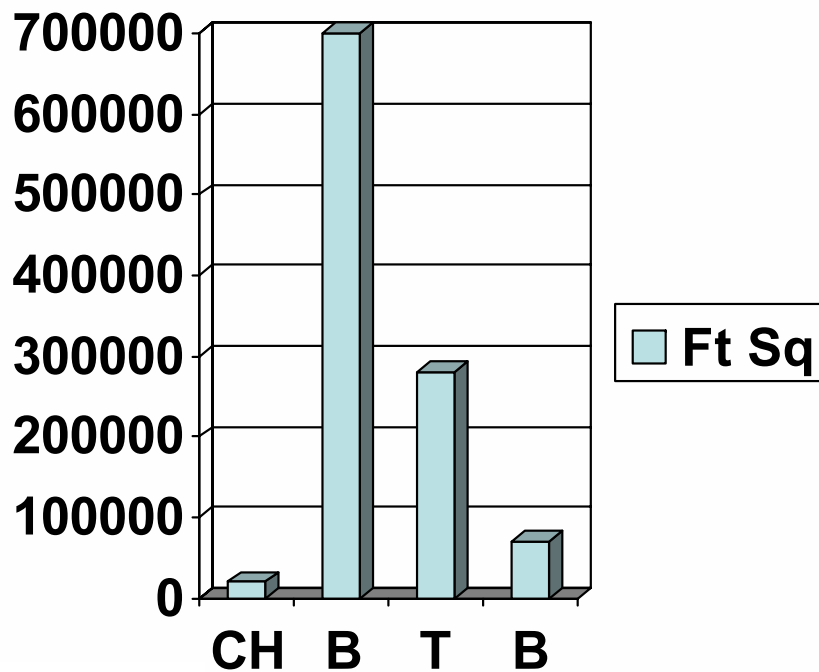
- 2001 NYC Anthrax Response and Remediation Oversight
- Capital Hill Anthrax Response and Remediation
- USPS Mail Facility at Brentwood Anthrax Response and Remediation
- USPS Mail Facility at Hamilton, NJ - Anthrax Response and Remediation
- DTRA – Chem Bio Containment & Destruction SOP Development
- DTRA - Iraq WMD Identification, Safety and Destruction as Necessary
- DTRA - Russian Biological Weapons Proliferation Prevention
- DTRA – Ukraine WMD Interdiction and Elimination
- AMI Building / Boca Raton, FL - Anthrax Remediation
- Port Newark – Suspect Container Decontamination
- Utica - Mold Demonstration
- AMI – Contents
- Hudson Falls – Mold and Encapsulation Demo



- **Capital Hill Anthrax Response and Remediation**
 October, 2001 – Fumigation November (Hart) December (HVAC) - Clearance Accelerated
 4 months 29 million dollars Downtime: 4 months Contents: Recovery/Disposal
- **USPS Mail Facility at Brentwood Anthrax Response and Remediation**
 October, 2001 – Fumigation December, 2002 – Clearance took over one year
 14 months 189 million dollars Downtime: 2+ years Contents: Removed and Destroyed
- **USPS Mail Facility at Hamilton, NJ - Anthrax Response and Remediation**
 November, 2001 – Fumigation October, 2003 – Clearance took several months
 23 months 75+ million dollars Downtime 3+ years Contents Removed and Destroyed
- **AMI Building / Boca Raton, FL - Anthrax Remediation**
 October 2001 but Remediation Began March, 2004 Fumigation July, 2004
 4 months less than 3 million dollars Downtime 4 years? Contents left in place, BUT
 Clearance less than one month, however – quarantine can not be lifted on boxes
- **Port Newark – Suspect Container Decontamination**
 August, 2004 Three Fumigations of Five Containers (1, 2+3, 4+5) 10 days less than 1 million
- **Utica - Mold Demonstration** 8 days less than \$500,000, 6000 sq ft., pre and post sampling NIOSH
- **Hudson Falls – Mold and Encapsulation Demo** 6 days less than \$500,000, 60,000 sq ft.
 Fumigation Monday June 27, 2005



- Size of Structure – Not the Time and Cost Driver, mostly an issue of sampling
- Do not remove contents, do not do source reduction
- Pre-stage emitter and tent sufficient for size (regionally)
- Put in place the clearance software if high threat



- Capitol Hill – fumigation of 20,000; liquid decon of many buildings
- Brentwood
- Trenton
- Boca

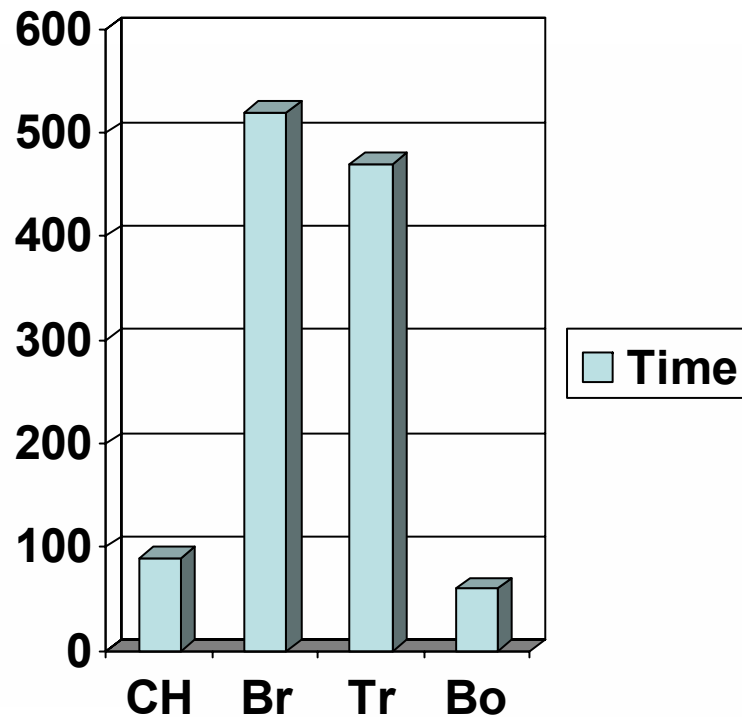


Time Frames – to fumigation, to clearance, and downtime overall

Time (and people) is the largest contributor to cost

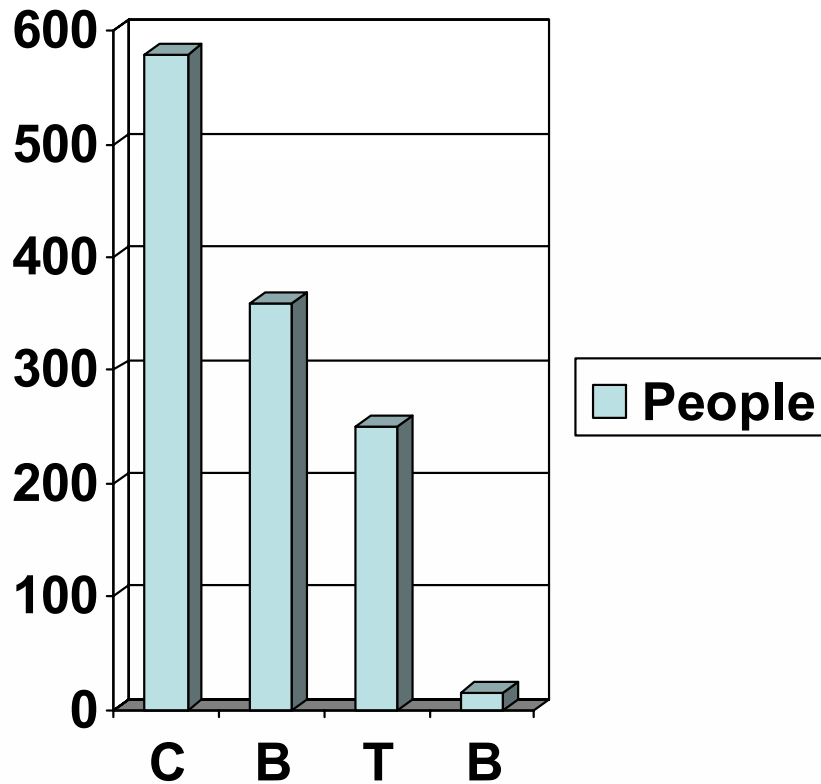
Time stretches to accommodate lead time, legal issues, debate and doubt

Time and cost can now be insured



- Capitol Hill – Resources
- Brentwood
- Trenton
- Boca Raton





Capitol Hill - doesn't count

Brentwood – 3 Prime Contractors and multiple Subs – up to 400

Trenton – 3 Prime Contractors and multiple Subs – up to 300

Boca – Less than ten full time
Surge to 22 for 3 week of boxes effort

Surge to 56 for fumigation

Only 8 highly trained sampling crew

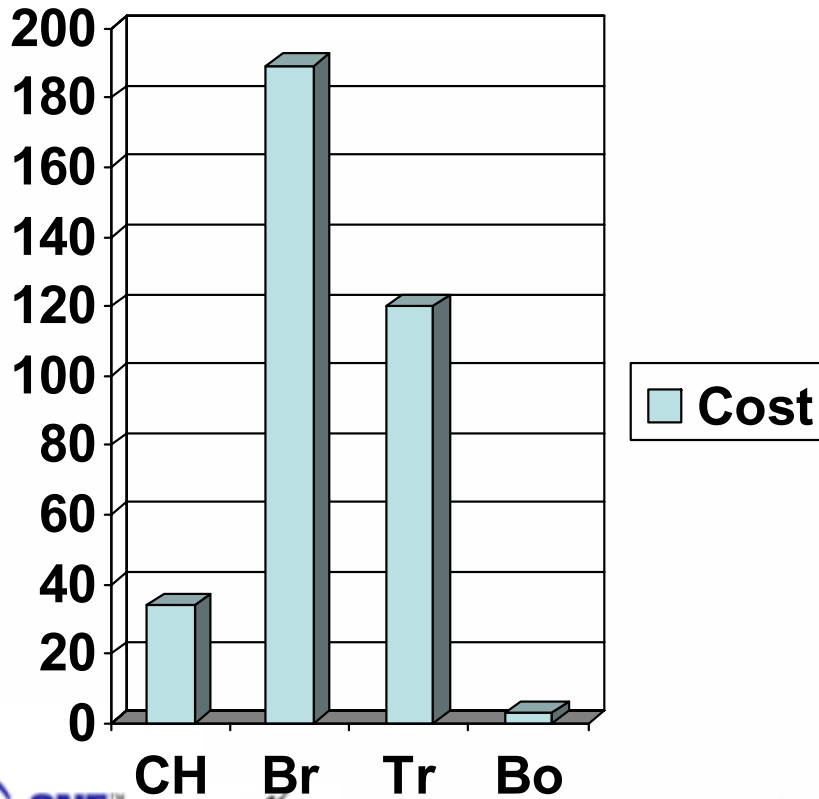
Utica/Hudson Falls – less than 15 for mobilization, fumigation, and breakdown. Minimal sampling



Remediation Costs are not downtime nor replacement

May be paying project costs in the downtime (Brentwood – indemnification)

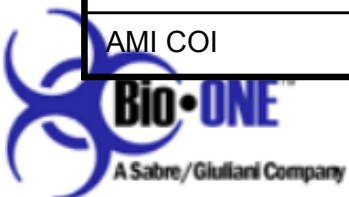
(Trenton – waiting for Brentwood)



- Capitol Hill – over 20 buildings enormous federal resources
- Brentwood, 17 acres first time scaled up
- Trenton, downtime - bleach
- Boca Raton – nothing done for two and a half years Only private building No government funds No insurance to cover



Event	Post Event	Hindsight
US Capitol Hill	Laws of Nature do not apply in DC Crisis Exemption? Sampling Methodologies need improvement Humidity can be tough TAGA Essential for Project Automated PC Testing Needed Post event stress	DC allowed technology development Manual Titration is Just Fine Complete Fumigation is better than sampling
J Street and State	No Comment	No Comment
Capitol Hill Ricin	Sampling Methodologies and Clearance Standard Needed	Airborne method needed, chronic low level toxin exposure?
Brentwood & Trenton	Insurance and Indemnification Pre-establish clearance criteria Pre-establish clearance authority Big buildings leak QC and Training on Sampling Bleach is very corrosive	Pick your type of response Insurance Is source reduction required? Modular response approach
AMI	Tent, Tent, Tent Public involvement is great Third Party Contents are a problem	Visual Database Critical Asset
Lemon Drop (Port Newark)	Preparedness is key Must rely on intelligence Curb Rumor Mill	MCAD Critical Asset
Utica	Communicate with ALL	Eliminate source reduction practice
AMI COI	Resolve Contents Before or Early	Need Policy or Law



All Project Operations, Public and Regulatory interface. No Owner oversight.

- Security
- Insurance
- Public affairs
- All State, Local, and Federal regulatory interaction
- HASP, RAP, SAP, ERP, AMP, CAP development
- All engineering
- All training
- All installation
- All removal
- All disposal
- All construction
- All testing
- All operations
- All sampling

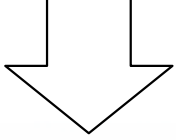
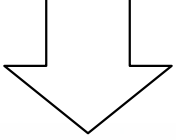
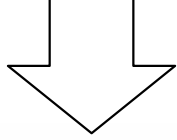
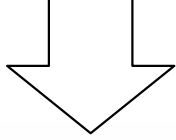


AMI Building Closed

**TWG / SSG
HASP
1st Entry**

**Engineering and Design
RAP/SAP Submitted**

**Begin Construction
Full System Test**



October
2001

January
2004

February
2004

March
2004

April
2004

May
2004

June
2004

July
2004

**Bio•ONE begins clean-up project
Mobilization**

**Building Assessment
Begin RAP/SAP**

**Paper Content Removal
Liquid crisis exemption**

**Final Crisis Exemption Issued
Building Fumigation**

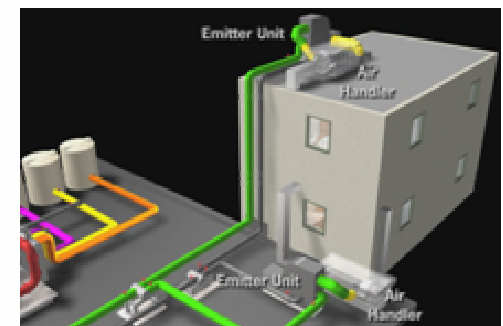
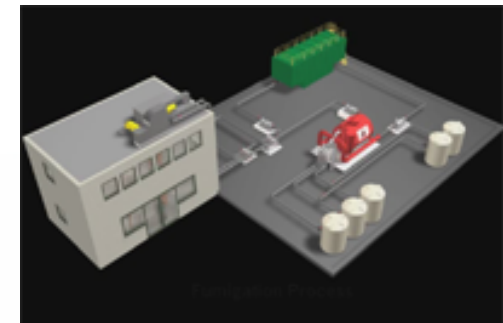


[Lead Time Legal Issues Debate Doubt]

- Equipment Availability
- Prepared Event Response Software
- Enabling Agreements
- Site Agreements - Contents
- Pre-Engineered Insurance Product
- First Response, Community Communication
- Draft RAP, SAP, ERP, and HASP
- Established Clearance Criteria and Draft CAP



1. Activate enabling agreements – regulatory / commercial
2. Activate pre-developed plans (HASP, RAP, SAP etc.)
3. Activate pre-installed Clearance Plan and Software (**critical asset**)
4. Seal or Tent building as required – install carbon based NAU's
5. Set up ChemGen™ & chem plant – (**critical asset**)
6. Install emitters (**critical asset**)
7. Install air transfer fans for high energy areas such as power rooms
8. Install monitoring lines and temperature / relative humidity meters, connect to process control center (**critical asset**)
9. Perform low level chlorine dioxide test
10. Install BI's (**critical asset**)
11. Perform fumigation
12. Perform clearance tests



For all Biological and Chemical Events

Level 1

Facility evaluation

T&VA review

Pre-developed RAP, SAP, STP (Sample Tracking Protocol), and SabreClear™ (Building Clearance Evaluation and Scenario Development System)

24 hour Event Coordinator response

72 hour BioRed Team and Asset response – As available

Level 2

Staffed and Supplied Regional Response Centers

Field training and exercises

24 hour asset response

Level 3

Facility hardening, fixed asset installation, site specific insurance product



Historical	- 440 days
	- 180 – 200 million
Start From Scratch	
Project Duration	- 180 to 270 days
Response Through Clearance Cost	- \$35 to 45 Million
With BioRed Preparation	
Project Duration	- 34 to 90 days
Response Through Clearance Cost	- \$15 to 25 Million

Insurance can now be obtained to guarantee the timeframe and cap the cleanup costs. Insurance would pay for business interruption beyond the time frame and costs above the established cap.



- Enabling agreements
- Pre-developed insurance & indemnity
- Pre-developed & Preliminary approved plans & SOPs
- Response cost cap insurance
- ChemGen™ response system
- Mobile Critical Asset Decontamination
- Mobile Personnel Decontamination
- Mobile Containment Systems
- Mobile BSL 3 Labs
- Mobile Chem & Process Labs
- Mobile Process Control & Command Center
- Mobile Logistics Support Unit
- Chemical Stockpile
- Experienced Security, Regulatory, Operations, Testing, Public Relations, Health and Safety, Sampling, Logistics and Administration Teams
- Pre-Positioned SID™ Kits
- SabreShield facility protection systems
- SabreClear™ sample tracking system and VR Database

