

Munitions Cleanup and Air Quality on Vieques

How has air quality been evaluated on Vieques?

- From 2005 to 2013, the Navy conducted air sampling during open detonation events to measure the air concentration of particulate matter (dust and soot), metals, and explosive chemicals.
- Over 1,600 air samples were collected during 177 detonation events. In addition, numerous accidental brush fires occurred during these years, and over 50 air samples were collected during 19 accidental brush fires, some of which were several hundred acres in size.
- Air samples were collected using MetOne E-BAMs monitors at locations near the former Live Impact Area (LIA) as well as the populated areas of Vieques (see map on page 2).
- In 2007 and 2008, air dispersion modeling was conducted to estimate the highest air concentrations of particulate matter (dust and soot), metals, and organic contaminants that could result from the open detonations and the proposed controlled burning in the Submunitions Area. The modeling approach was developed in a collaborative effort among the Navy, the U.S. Environmental Protection Agency, and the Puerto Rico Environmental Quality Board.

In order to protect the safety of site workers, the munitions cleanup on Vieques involves open detonation of munitions. The health effects of these operations have been evaluated by air dispersion modeling and 8 years of on-site air sampling. The results show that the open detonations are conducted in a manner that is protective of human health and the environment.



Air Quality Monitoring Instrument (MetOne E-BAM)



What did the air samples show?

- No explosive chemicals were detected in any of the samples.
- The detected concentrations of all metals were at least 99% below health based standards. There were no detections of mercury or lead in any of the samples.
- There were no violations of the National Ambient Air Quality Standards (NAAQS) for particulates (dust and soot).

What did the air dispersion modeling show?

- All predicted concentrations in the community were below regulatory and health based standards, such that there was no indication of risk to the residents of Vieques.
- Overall, the model results agreed with the on-site air sampling.

Why was air sampling discontinued in 2013?

- After 8 years, with 1,600 air samples collected during 177 detonation events and 19 accidental brush fires, there were no violations of the National Ambient Air Quality Standards (NAAQS) or other health based standards. These sample results were supported by the air dispersion modeling.
- Over time, the number of munitions items and the size of the open detonations have decreased. Therefore, the air monitoring from 2005 to 2013 represents the worst case situation.

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