

United States Senate  
Committee on Environment and Public Works  
Oversight Hearing on Cleanup Efforts at Federal Facilities

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Testimony of

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Good Morning Chairman Boxer, Ranking Member Inhofe, and distinguished members of the Committee. My name is Elizabeth Limbrick, and I am member of the Interstate Technology Regulatory Council. I have been employed in the environmental field since 1995 in various capacities as a consultant, a regulator at the New Jersey Department of Environmental Protection, and as Responsible Party (RP) at the quasi-state agency of the New Jersey Schools Development Authority. I want to thank you for this opportunity to be heard on the cleanup efforts at federal facilities.

Drawing on my experiences as a former Regulator and a member of the ITRC, I have recognized the pace of remediations at federal facilities has improved greatly over the years, and now often far exceeds that of what was common decades ago. I attribute this to the Department of Energy's (DOE's) and Department of Defense (DOD's) use of innovative technologies and their motivation to bring these sites to a conclusion. In the past, the military, in particular, has received criticism that the pace of cleanups was too slow. However the military has embraced their duty and obligation to get these sites cleaned up so that they can pursue their core mission of being "force ready." The DOD and DOE have also recognized that addressing environmental issues quickly reduces long-term liabilities and costs. Additionally with the Base Realignment and Closure (BRAC) efforts, the need to accelerate cleanups has become magnified. There is strong economic pressure to get these lands back into productive use for the local economies.

The military has invested in creating comprehensive internal environmental programs, including the Air Force Center for Engineering the Environment (AFCEE), the Naval

Facilities Engineering Command (NavFAC), the Army Environmental Center and the Army Corps of Engineers. With the advent of these facilities, the military has become more advanced with respect to environmental investigations and remediations.

A good example of this is the partnership formed with the United States Environmental Protection Agency (USEPA), the New Jersey Department of Environmental Protection, the Interstate Technology Regulatory Council, the United States Army Corps of Engineers, the Energy Department's Argonne National Lab, the Army, the Navy, and the private sector that led to the development of the innovative environmental Triad Approach. The Triad Approach has three main components: systematic planning, real-time dynamic workplans, and real-time analytical methods.

The emphasis on real-time measurements with a flexible workplan allows the field team to make decisions in the field and to collect the necessary data to characterize areas of concern, specifically focusing additional sampling in areas where there is greater uncertainty or where there are unexpected results. The result is that areas of contamination are much more likely to be identified during the site characterization than in conventional investigations where they could go undiscovered. This also allows for characterization and remediation to be conducted in a single mobilization, greatly increasing the pace of environmental cleanups.

The systematic planning process requires a high degree of cooperation among the various stakeholders, including the regulator and the responsible party. This also requires a new

level of open-mindedness that is generally not achieved under the conventional environmental remediations. However the result is that better information is obtained in a shorter timeframe which allows the parties to make better decisions, which is the ultimate goal of Triad.

Better decision making, in turn, allows the parties involved to target the remediation activities at an accelerated pace, often with substantial cost savings. By having more data, we can characterize the sites better and have a better understanding of impacts to groundwater, the size and extent of the contaminant plumes, and the potential for off-site migration. The DOD and DOE have recognized and embraced this concept.

The Triad approach has been successfully applied at dozens of federal facilities. This has resulted in accelerated cleanups and saved millions of taxpayer dollars including the following examples<sup>1</sup>:

Facility	Lead	Time Saved	Cost Savings
McGuire Air Force Base	Air Force	2 years	\$1,300,000
Fort Lewis Small Arms Firing Range	Army	1-2 years	\$500,000
Avon Park Air Force Range	Air Force	3 years	\$1,600,000
Naval Air Station Barbers Point	Navy	Not yet Quantified	\$24,000,000
Vint Hill Farms Station	Army	2 years	\$500,000
Camp Pendleton	Navy	3 years	\$2,500,000

I would like to take this opportunity to highlight the benefits of using the Triad approach at the McGuire Air Force Base. The C-17 Hangar project at McGuire Air Force Base

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<sup>1</sup> Information compiled from [www.TriadCentral.org](http://www.TriadCentral.org), Triad Project Profiles.

(MAFB) was a rapid turnaround project that began when solvent contaminants were discovered in the excavated footprint of the new aircraft hangar. Using field analytical methods, over 4,500 analytical data points were obtained. This vast amount of data, along with the early involvement of the Regulators, allowed the Triad team to characterize the site and conduct active remediation in one mobilization. The investigation and remedial excavation were completed in three weeks. The entire Triad process, from initial discovery of the contamination through the investigation and remediation, and the institution of a natural remediation program occurred in less than five months, which is a fraction of the typical two to three year timeframe it would require under conventional strategies. As a result of implementing the Triad Approach, the construction of the C-17 Hangar was completed on schedule for the arrival of C-17 aircraft.

By continuing to encourage the DOD, DOE, and other federal partners to develop and embrace innovative technologies for environmental remediations, such as the Triad Approach, you can further accelerate the pace of cleanups and increase the confidence that sites are fully characterized, while also saving taxpayer dollars. The DOD, DOE, Interstate Technology Regulatory Council, and this Congress are serious about tackling environmental issues and protecting human health and the environment.

Thank you for your time. I look forward to your questions.

Elizabeth Limbrick