

Battelle, Farber team up on homeland-security lab

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A Central Ohio research institution and a Columbus custom vehicle maker have combined on a nearly \$4 million project to create a mobile laboratory capable of analyzing more than 1,000 potentially hazardous samples a day.

Battelle Memorial Institute and Farber Specialty Vehicles in Reynoldsburg, along with Michigan-based Leco Corp., rolled out the mobile lab the week of May 9, prior to its trip to a Battelle center in Maryland where it will await a battery of field tests. The Battelle-led team behind the lab is one of three competing for a contract to produce the labs for the Homeland Security Advanced Research Projects Agency.

"Usually when you're working on something for the government, they'll give you a big, thick book of requirements," said Greg Bowen, chemical and environmental technologies department manager, who oversaw the project for Battelle. "Not this. The only requirement was that it be capable of analyzing over 1,000 samples per day. We started this from scratch."

Work began 18 months ago on the unit, a three-vehicle system made up of a large bus and two 53-foot-long tractor trailers.

Starting from scratch

Battelle has built several mobile labs, but none on this scale, Bowen said.

Farber President Steve Farber said the company has used Leco's gas chromatography mass spectrometers and other instruments on vehicles before. Some of the companies' vehicles made rounds to Battelle.

"We saw that system and it triggered the concept of what we wanted to do," Bowen said.

The team was directed to create a laboratory that would target toxic industrial chemicals and chemical warfare agents and would be able to analyze almost any sort of sample —



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The lab is equipped with three Gas Chromatography Mass Spectrometers, which will be used to analyze an array of samples, including soil, water, air and mixed-phase types.



The units are outfitted with ovens capable of rapid temperature changes, which expedite analysis.

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A.J. Savage
research associate

soil, water, air or others.

"It could be the arm of a couch," said A.J. Savage, a research associate.

Savage said having the lab in a custom coach gives them more space and makes for better traveling.

"The ride is incredible," he said. "It is super smooth. There is less wear and tear on the instruments."

All three vehicles have private contact lines, able to communicate only with each other.

Farber said a 16-person team would run the unit.

Next steps

Bowen expects the unit would be called into service in the event of a terrorist attack or an accident, such as a chemical spill.

The unit is self-contained, Farber said, and can be ready to analyze samples within two hours of arrival at a site. Bowen said rush samples can be analyzed in under 20 minutes.

For the time being, the unit will be based at the Battelle Eastern Science and Technology Center in Aberdeen, Md. Bowen said field tests are set for July, after which the U.S. Department of Homeland Security will decide to award contracts to one or more of the three teams.

Farber said the department is expected to order from 15 to 48 units that will be distributed throughout the country.