

## Bacteria Eat AZ Fuel Spill

HEATHER CASEY  
*Firehouse.Com News*

After a fuel spill Feb. 19, Tucson [AZ] firefighters cleaned up the highway by spraying it with billions of diesel-eating bacteria.

The *Bacillus* bacteria used on I-10 digest diesel and other hydrocarbons, breaking them down into carbon dioxide and water.

"It saves us a ton of money in disposal fees," said Tucson Fire Department spokesman Joe Gulotta. "If we can have this micro-organism eat it, we don't have to go through and pick it up."

This clean-up process, known as bioremediation, degrades harmful or hazardous materials into less harmful or benign components. It has been used at high-profile spills, such as the recent oil spill off the Galapagos Islands and the oil well fires in Kuwait after the Persian Gulf War.

The accident on I-10 caused one vehicle's fuel tank to rupture and dump about 50 gallons of diesel fuel onto the highway, where cars spread it for about half a mile. "Vehicles were slipping and sliding almost like they were on ice," Gulotta said. After shutting down the highway and removing the disabled vehicles, the fire department had to get the road in safe condition.

Gulotta said they couldn't hose down the highway because then the fuel would contaminate the ground water. The old-fashioned way of cleaning up spills is to put sand on top of them and then to pick everything up, but sand isn't naturally absorbent, and can be dangerous on the highway, Gulotta said. "It's like having little marbles all over the road. It doesn't stay on the road and becomes a bigger hazard."

Eric Lamar, director of training and education for the IAFF, said bioremediation is rare for fire departments. "It's much more common for fire departments these days to put down a clay-based absorbent, and then some kind of state or private service picks up the absorbent and disposes of it," he said.

Lamar said he can imagine bioremediation becoming more common, because it could be favorable when a spill's location makes it difficult to pick up with absorbents, or when a spill occurs on a minor roadway.

Because the bioremediation process isn't as fast as absorption, it may not be the best choice for spills on major highways. "When time is of the essence, you're still going to prefer absorbing it," Lamar said.

If traffic is closed down on a major highway, the economic impact on that area can be as severe as the environmental impact of the fuel spill, Lamar said. Plus, you have the added risk that the slow

down will cause additional accidents.

The bacteria product used for bioremediation is inexpensive enough that other Tucson city vehicles, such as garbage trucks, carry it as well, Gulotta said. "The entire city uses this for spill mitigation," he said.

There are a variety of bioremediation products, but Tucson uses one called Micro-Blaze Emergency Liquid Spill Control made by Verde Environmental, Inc.

William L. Scogin, president of Verde Environmental, Inc., said the agencies that use his product are predominantly located in the South and Southwest because the company is based in Houston, Texas.

The Tucson FD was the first department in Arizona to start using the bioremediation process in 1994. Gulotta said the department had never heard of it until they were approached by a marketer for Micro-Blaze.

After the bacteria finished eating the fuel Tuesday, firefighters spread a powdery, clay-like substance on the highway for better traction.

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Story available at <http://www.billingsgazette.net/articles/2006/09/06/news/wyoming/25-microbes.txt>

Published on Wednesday, September 06, 2006.

Last modified on 9/6/2006 at 1:01 am

## Microbes assist in cleanup at Crosby well

By RUFFIN PREVOST  
Gazette Wyoming Bureau

CODY - Microbes are among the tools being used in cleanup efforts at the Crosby well site in Clark following a blowout there last month.

Concerns about contamination of nearby water wells prompted a testing and remediation program that includes the drilling of a series of monitoring wells, according to a statement released by the state Department of Environmental Quality.

Test results so far show no traces of contamination from natural gas and gas condensate forced to the surface during the blowout, the statement said.

The monitoring wells constitute a "thorough and long-term evaluation of the potential groundwater impacts of the blowout," the statement said.

Well operator Windsor Energy said the company had hired Terracon, a national consulting engineering firm with offices in Billings, to complete a testing program to determine whether groundwater was affected.

The program, expected to be completed around Sept. 15, will include analysis of water samples from the monitoring wells and other groundwater sources, and further sampling of subsurface soil and bedrock, the statement said.

Windsor will forward findings from the analyses to the DEQ, but Keith Guille, a spokesman with the agency, said Tuesday he was unsure when those results were expected or whether they would be made public.

Some of the earliest cleanup efforts focused on removing drilling fluid and condensate forced to the surface through underground fissures near the well site.

Vacuum trucks were used to remove large concentrations of contaminants on the surface, including about 10 barrels of gas condensate.

A bioremediation agent called Micro-Blaze was used to help clean up trace amounts of condensate on and in the soil, according to Don Likwartz, supervisor of the state Oil and Gas Conservation Commission.

The product is a combination of nutrients, microbes and a wetting agent, said William L. Scogin, president of Houston-based Verde Environmental, makers of Micro-Blaze.

It is designed to immediately render spills nonvolatile, and eventually break down hydrocarbons into

carbon dioxide and water, Scogin said.

"The wetting agent begins to break up and start to emulsify the condensate, breaking it down into smaller particles," Scogin said. "Then the microbes come out of their spore form and come into contact with the hydrocarbon molecule and stick to it."

The microbes, a collection of bacteria designed to tackle the most common kinds of oil and gas spills, feed on the hydrocarbons, and will continue to replicate as long as hydrocarbons and moisture are present, Scogin said.

Condensate is one of the easiest contaminants for Micro-Blaze to degrade, Scogin said.

Micro-Blaze is approved by the Environmental Protection Agency, and is used "virtually all over the world in all types of industries, from refineries to fire departments" to eliminate flammability in gasoline and oil, and to clean residue left behind after spills, Scogin said.

The product can degrade spill residue in days, weeks or months, depending on conditions, he said. It works best in the presence of oxygen, but also works anaerobically. Tilling contaminated soil helps speed cleanup.

The microbes in Micro-Blaze are not genetically engineered, and are tested and certified as nonpathogenic and nontoxic, Scogin said.

"We've combined those microbes that will best clean up hydrocarbons," Scogin said. "It's just Mother Nature."

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FOR IMMEDIATE RELEASE: April 17, 2002

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## ***Glendale Environmental Resources Department Becomes the First in the Valley to Treat Spills With Micro-Blaze***

**GLENDALÉ, Ariz.** –Glendale is the first city in the Valley to test and use *Micro-Blaze Emergency Liquid Spill Control*, a nature friendly product used to treat spills, such as oil and antifreeze.

To make waste disposal more environmentally sound, the Environmental Resources Department explores alternative ways to treat spills and found that other leading-edge public and private organizations successfully used *Micro-Blaze*.

The city's Environmental Resources staff has been working and training the city's Fire Department and Hazardous Materials teams to effectively use the product to clean up accident scenes on city streets.

*Micro-Blaze*, manufactured by Verde Environmental, Inc., is unique because it contains a special mix of nutrients and bacteria. When applied to a petroleum-based spill or contaminant, the product attaches to the surface and breaks down the molecules into harmless byproducts, such as carbon dioxide, water and trace salts.

The Environmental Resources Department ensures that Glendale complies with environmental laws and continually seeks to improve processes that are safe and clean for the community.

For more information about Glendale's use of *Micro-Blaze*, please call Ben Johnson, environmental program manager at (623) 930-2583.