

Toxic soil gets new solution

By Chad Lorenz
Staff Reporter

University of Nebraska-Lincoln researchers may have found a safe, economical way to clean up toxic soil at a decommissioned bomb factory near Mead, an agronomy professor said.

The Environmental Protection Agency has decided to incinerate the highly contaminated soil at the Nebraska Ordnance Plant, which is 30 miles north of Lincoln.

But a UNL research team that studied the soil near the decommissioned plant may have found an alternative to the incineration plan, agronomy professor Pat Shea said.

This alternative includes chemical and biological treatments to the soil. The treatments may replace incineration plans at other contaminated sites across the country, Shea said.

Contaminants such as TNT and cyclonite explosives washed into drainage ditches near the plant during World War II and the Korean War, when the plant produced more than 3 million bombs.

The contaminated soil now rests on university property at the Agricultural Research and Development Center.

The U.S. Army Corps of Engineers and the EPA are responsible for cleaning up the soil.

Incinerating the soil for cleanup

"...the concern is that if something were to go wrong, hazardous emissions could be released."

PAT SHEA

agronomy professor

would be expensive and a potential environmental hazard, Shea said.

The incineration of 8,400 cubic yards of highly contaminated soil at Mead would cost the government \$14 million, Shea said.

Incinerating the soil wouldn't release any pollution if done properly, he said.

"I think the concern is that if something were to go wrong, hazardous emissions could be released," Shea said.

The contaminants could be broken down into safer, more biodegradable components by using chemical treatments, Shea said.

Shea said the treatment involved mixing iron and hydrogen peroxide with the toxic soil and water.

The chemical reaction converts the contaminants into water, carbon dioxide and harmless organic acid, Shea said.

Helen Tilson, an EPA spokeswoman, said cleaning up the contaminated site was an immediate concern because the explosives may also contaminate Mead's ground water.

Shea said the kind of toxins in the soil had been known to cause gastro-intestinal and liver disorders.

"Some hazards have been associated with these and similar compounds," he said.

Shea and his colleague Steve Comfort, a soil chemist at the Institute of Agriculture and Natural Resources, also have developed a biological treatment in which microorganisms transform the toxins into different compounds.

Tall fescue grass also would help break down the contaminants, Shea said.

The root system in the grass would provide a biologically active area that could successfully clean up the soil, Shea said. The roots also could slow run-off of toxic ground water.

That method is slower, Shea said, but could be effective for less-contaminated soil and chemically-treated soil.

Shea said he wanted to develop these methods as quickly as possible for use at other contaminated sites.

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criminate against one media outlet, Bender said.

If Osborne worked at a private institution, Bender said, the case would be different.

If the Daily Nebraskan had taken legal action, it would not be the first time. The newspaper went to court in the 1987 *Sinn v. the Daily Nebraskan* case.

Two students sued the newspaper, the University of Nebraska, and other officials because the newspaper would not run a classified advertisement seeking roommates based on their sexual orientation.

The newspaper rejected the advertisements because they discriminated against individuals who were not gay or lesbian and violated the Daily Nebraskan's policy.

The court ruled in favor of the Daily Nebraskan because the newspaper's student staff made the decision and not the university.

Mike Hiestand, an attorney at the Student Press Law Center in Virginia, said the case enforced the principle that student newspapers have the same rights as other commercial newspapers.

The Daily Nebraskan, which was founded in 1901, is the independent student newspaper of the University of Nebraska-Lincoln. It is governed by a board of students, faculty and community members.

The newspaper is financially independent of the university. The Daily Nebraskan receives a minor portion of its operating budget through student fees. Advertising revenues cover the majority of the newspaper's operating costs.

Senior Reporter Jeff Zeleny contributed to this report.

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1. Standard & Poor's Insurance Rating Analysis, 1995; Lipper Analytical Services, Inc., Lipper-Directors' Analytical Data, 1995 (Quarterly).

2. Source: Morningstar, Variable Annuities/Life 4/12/95. 3. Of the 2,358 variable annuity funds tracked by Morningstar, the average fund had annual expenses of 0.78% plus an insurance expense of 1.24%. Source: Morningstar, Inc., for periods ending July 31, 1995. 4. Standard & Poor's Insurance Rating Analysis, 1995.

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