

# 'Brownfields', a new opportunity?

*Certain plants can remove heavy metals from contaminated industrial soils. Is this a valuable new service that the green industry can supply? There's \$2 billion in federal funds to clean up these 'brownfields.'*

by JAMES E. GUYETTE / Contributing Editor

Landscape contractors seeking other revenue streams can investigate the possibility of cleaning up abandoned industrial sites. The green industry can help in this new field because selected plants can absorb lead and other heavy metals from contaminated soils.

These polluted areas, "brownfields," were once home to heavy duty manufacturing operations. They're a blight on the landscape and a bane to urban planners throughout the United States. It's impossible to attract new development to these sites because of concerns over what lies beneath them.

"We think a significant number of these sites can be treated using metal-accumulating plants," says Dr. Burt Ensley, president and chief executive officer at Phytotech, Monmouth Junction, N.J. "We expect to see this growing into a large market within the next two years."

Dozens of plant species can be used, including mustard plants, sunflowers, Alpine pennycress, brassica and Indian mustard. The company recently presented a scientific paper on the project at a hazardous waste conference in Birmingham, Ala.

"The results show the Indian mustard plant's effectiveness in extracting lead from contaminated soil in our recent field trials at an abandoned industrial site in Trenton," says Phytotech's Dr. Michael Blaylock.

"The results of our studies clearly show the potential of using green plants to clean up soil and water contaminated with heavy metals. It should enable us to develop an efficient, cost-effective and environmentally compatible approach to address the brownfields problem throughout the U.S."

There is more to the program than just sowing seeds, says Ensley. His company will be sharing the patented technology with interested green industry operations. "There is a large amount of knowledge in this," he points out. "I could send you our best seeds tomorrow and you wouldn't be able to remove lead with them," he explains. "We will provide the landscape industry with the *experts* to show them how."

Known as phytoremediation, the process uses specially se-

lected plants to remove heavy metal contaminants from the soil and concentrate them in the stalks and leaves which can easily be harvested and destroyed, thereby removing the threat to the environment.

"Phytoremediation offers us a way to reclaim many of our urban sites lost to toxic contamination and turn them back into an integral part of the community and local economy," Blaylock says.

The impact of the project, which began in 1989, had been eagerly awaited by community leaders, academic researchers and public officials. "We're very excited about the results that Phytotech has achieved," says Karen Waldron, brownfields coordinator at Trenton's department of housing and development. "This demonstration is a successful example of cooperation between private industry, local community and civic officials, and it can serve as a model for other brownfield sites," she adds.

So far, \$1.4 billion has been spent on brownfield cleanups,



and Ensley predicts that \$500 million can be applied to using plant materials rather than concentrating efforts on actually removing the soil.

"We have commercial applications for this," he says, pointing out that President Clinton recently called for a \$2 billion effort to clean up brownfields, and that he challenged American businesses to reclaim blighted industrial sites like the one in Trenton.

"There's a number of plants that can do this," Ensley stresses. "Our intention is to show people how to do this."

For more information: Phytotech, 1 Deer Park Dr., Suite I, Monmouth Junction, NJ 08852; phone (908) 438-0900; fax (908) 438-1209.

**Using plants at this Trenton site, Phytotech reports that approximately 70 percent of the treated area has been cleaned to the New Jersey regulatory limit of 400 parts per million of contaminants in one growing season.**