6-12-02 Clips

Study may offer change for future remediation

By Randy Petersen
Miami News-Record

The grass will be greener in Picher and Cardin if Nick Basta has his way.

Part of a Environmental Protection Agency funded study, the Oklahoma State University professor is working with researchers from the University of Washington in Seattle in an effort to find ways to grow grass and other plants in zinc-laden soils.

By finding a way to grow better grass in former mining and smelter areas, Basta said he hopes his team of researchers will find a way to make existing lead less dangerous.

“For the plant problem, you have to cure the zinc and for the people problem you have to cure the lead,” he said.

Basta is working on past research conducted by University of Washington professor Sally Brown.

Brown’s research has produced a variety of test areas — including one outside Joplin and another in Leadville, Colo. — where grass and other plants were grown on contaminated soils.

She said the research has produced an alternative for current EPA remediation efforts.

“If you get a vegetative cover, you can address the fugitive dust issue and it looks better,” she said.

While successful in other areas, Brown and Basta said the research hasn’t been conducted in EPA’s Region 6, which includes Oklahoma.

That’s why Basta said he wanted to conduct the research in northeastern Oklahoma. He wanted to show regional Superfund officials that it could work in mining areas and around smelting sites in the state.

Brown’s past research has centered around using sewer sludge, waste from water treatment plants and special compost to grow grass and other vegetation.

While the same materials are being used in the Ottawa County site — located on the EPA soil repository — Basta and his research students have added commercial fertilizer to the list.

Basta and students Michael Friend, Hunter Anderson and Mark Casillas are working to determine if the phosphates in the fertilizer can be used to grow grass in the zinc-contaminated soil. After that, they want to see if the grass and fertilizer work to put other metals in a state that isn’t as available to humans.

“The thing is to cut down the exposure to humans,” he said.
To conduct their study, the OSU researchers have set up plots in the soil repository. Using 12 different combinations of fertilizer, sludge and other materials, Basta said the small plots — approximately 4-foot by 4-foot — will be watched and mowed as the Bermuda grass grows. The grass will then be studied to determine whether it is safe for

humans and other animals.

Basta said the chance to use the area where the EPA has dumped lead-contaminated soil from yard remediation efforts is ideal.

“Instead of having to go into town, we can work with the same material without having to disturb anyone,” he said.

While the group is doing some fertilizer research in Picher, Basta said the use of sewer sludge and compost created with sludge couldn’t be used in town. Still, he said the study will show if that material can be used in unoccupied areas.

Basta said the sludge had to come from Tulsa because of the short notice provided by the EPA. He was informed of the study at the end of April and had to have the plots set up by June 1.

“We were in a pinch and had to get materials in two to three months,” he said, noting he knew Tulsa waste was cleared for study.

The water treatment materials used came from two sources — one using aluminum and the other using iron — to see which will work better.

Basta said he hopes the study will continue for three years, but it needs to last at least one year to determine if it will be helpful in Superfund sites.

While the study may be too late to provide an alternative to current yard remediation in the Tar Creek Superfund Site, Basta said it may provide a way to protect lands where lead-contaminated soils aren’t being replaced or in yards where zinc, not lead, is the metal mixed in the soil.

In the future — if the EPA accepts the research — the alternative could also provide choices in new Superfund sites.

He said the key will be to determine if leaving the lead in the soil, but converting it to a safer form, is an acceptable risk.

“Some people are going to want it gone,” he said. “Some people are going to want to be gone. Others are going to want to stay and this may make it an acceptable risk for them.”