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## Survey finds sicker residents

### Certain diseases appear to be more common in Tar Creek site

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PICHER, Okla. - A survey of 562 Ottawa County households, with an estimated population of 1,405 people, suggests that certain diseases are more prevalent in the Tar Creek Superfund Site than elsewhere in the nation.

The study, recently completed by the LEAD Agency Inc. and funded by a \$20,000 grant from the U.S. Environmental Protection Agency, suggests that there is a greater prevalence of several diseases among the residents of the county than national averages.

The survey report notes that because of a data-entry mistake, the total number of people in the households was not tabulated. For comparison to census data, a ratio of 2.5 people per household was used to estimate the total number of people to which the survey applied. Based on that estimate, 1,405 people, the survey report shows the following percentage estimates:

A 24 percent incidence of miscarriage. That compares with a national average of 10 percent, according to local pediatricians.

A 7 percent incidence of Parkinson's disease. The national average is 1 percent, according to the National Parkinson Foundation.

40 percent incidence of heart disease. The federal Centers for Disease Control and Prevention says about one in six people, or about 16 percent of the population, has heart disease.

58 percent incidence of hypertension or high blood pressure. The national average, according to the CDC, is 27.6 percent.

A 38 percent incidence of some type of cancer. Cancer rates vary according to the type of the cancer detected. The survey did not isolate specific types of cancer.

A 43 percent incidence of diabetes. The national average, according to the CDC, is 6.3 percent of the population.

An 11 percent incidence of kidney disease. The national average, according to the National Kidney Foundation, is 4.5 percent.

The survey also found high rates of arthritic diseases and asthma.

Rebecca Jim, director of LEAD, which stands for Local Environmental Action Demanded, a local residents' group, said: "We wanted to answer these questions: Is it more here than somewhere else? Is there a higher percentage of certain diseases here, and does that relate to metal exposure?"

"It appears that our surveyed population is sicker than the general population of Oklahoma or the country. We feel these findings cannot be ignored and that it's a good starting point for a comprehensive health assessment."

The work done in connection with the door-to-door survey was a lay effort and does not constitute a scientific effort in that a random-sample survey of residents was not conducted. Still, the large number of participants and households gives a measure of credibility to the survey, observers say.

Jim said the survey points to the possibility that heavy metals in the environment of the former lead and zinc mining site are affecting the health of the adults who live there. But, it is difficult to draw any conclusions about the possible impact of long-term exposure to heavy metals at the site because the potential pathways for exposure have not been fully explored.

#### Exploring pathways

Earl Hatley, who helped put together the survey's results with assistance from several experts in the medical field, said that early in the 20-year history of the Superfund site, government health officials determined that there were no pathways for heavy-metal exposure that could affect human health at the site.

That changed in 1994 when Don Ackerman, with the Indian Health Service clinic in Miami, decided to do a blood-lead analysis of the children who had visited the clinic. He found that 34 percent of the children who had visited the clinic had some degree of lead poisoning. That prompted a closer look at possible exposure pathways, and the eventual determination that yard soils in Picher, Cardin and other communities within the site had been contaminated with lead.

In response, the EPA mounted a \$107 million cleanup of yard soils at the site. The contaminated soil was removed and replaced with cleaner soil. Subsequent testing of children at the site found that the exposure rate had dropped to 11 percent.

That exposure rate, however, was still too high. Lead exposure in children can cause a number of health problems, including permanent learning disabilities. The national average for childhood lead exposure is 2 percent, according to federal health officials. The continuing high rate of exposure prompted Gov. Brad Henry in January to propose emergency legislation to buy out families with small children in Picher and Cardin, and relocate them to safer places. Henry signed the legislation on Wednesday in Picher.

Hatley said the failure of health officials early on to detect the lead poisoning of children at the site and the exposure pathway via the soil is an example of why a more comprehensive look at heavy-metal exposure involving adults is needed at the site.

"They had all but left the site in 1994," he said. "The Indian data drew them back, and they found a pathway for exposure in the soil that they did not know existed. We think other exposure pathways exist for lead, silica, cadmium, iron and arsenic that we do know about at this time that are affecting public health at the site."

Hatley said one pathway could be inhalation of airborne particles. Another could be consumption of native plants, aquatic life, wildlife and local agricultural products. Another could be water.

Recent tests of hair samples from adults at the site have shown high levels of lead and manganese. Other hair samples have shown cadmium and arsenic.

"If we do not look at these diseases, the heavy metals we know are here and all of the potential pathways for exposure, we will be screwed again," Hatley said.

#### Under consideration

The survey was conducted by volunteer nurses from Oral Roberts University in Tulsa and Northeastern Oklahoma A&M College in Miami. Technical assistance in the organization of the data was provided by Dr. Evelyn Acheson, with the College of Nursing at the University of Oklahoma. The peer reviewer of the survey was Dr. Robert Wright, with the Harvard School of Public Health.

Jim said the L.E.A.D. group hopes that the survey will trigger a more scientific and comprehensive health assessment by the federal Agency for Toxic Substances and Disease Registry, which is currently working on a limited review of existing health data associated with the site.

The survey is now in the hands of officials with the agency in Dallas and Atlanta. Whether the survey will achieve the goal of securing the first-ever comprehensive health assessment to be conducted at the Superfund site remains to be seen.

But, the agency is interested. Dean Seneca, assistant director of the agency's Office of Tribal Affairs, said in a telephone interview: "We are looking at this seriously. If these rates are true, they would be alarming and would necessitate a further, more in-depth look."

Seneca said a meeting will be held this week "to determine the agency's stance on the report."

Seneca said an issue for the agency is whether it has the resources to pay for a comprehensive health assessment for the site. Such an assessment could require a special congressional appropriation.