

RENO GAZETTE-JOURNAL

Tree rings studied in cancer investigation

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FALLON — Two University of Arizona professors investigating leukemia clusters in their home state and in Fallon took tree ring samples on Wednesday in northern Nevada to determine whether high tungsten levels in the environment around Fallon are normal or unusual.

The samples may help solve the mystery of the high levels of tungsten previously found in Fallon trees, wells, and in urine samples taken from 205 residents. The biological tests are part of the federal Centers for Disease Control and Prevention investigation into a leukemia cluster of 16 children, three of whom have died.

“We took samples at a site upslope from the Carson City area where tungsten ore isn’t found and at two sites in Churchill County near tungsten deposits,” said Paul Sheppard, a tree ring expert and associate professor at the University of Arizona.

“We wanted a pristine site and a heavy-tungsten site. That way we’ll be able to see if the levels in Fallon are expected or unusual.”

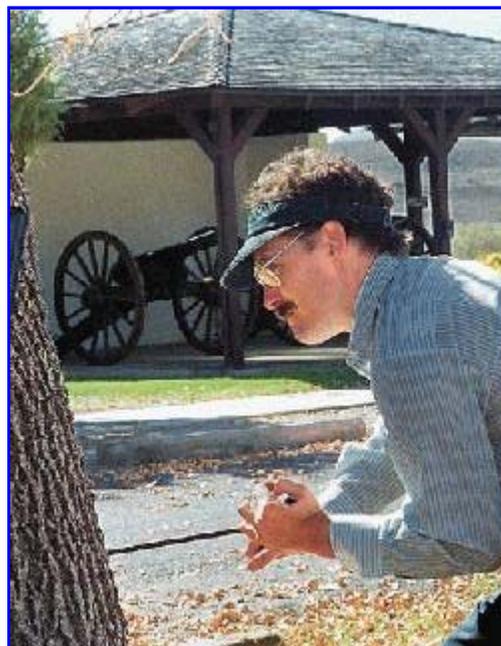
Previous tree ring tests show levels of the metal tungsten appear to have increased in Fallon and Sierra Vista, Ariz., where nine cases of childhood leukemia have been confirmed. The analysis showed traces of the metal increased during the last 20 years.

Tungsten is found all over northern Nevada, according to the University of Nevada School of Mines. It is used to make jet engine turbine blades and to strengthen steel for other uses. Churchill County is host to 17 closed tungsten mines and an industrial plant in Fallon also uses it to make tool bits.

The recent tests in Nevada and Arizona are the first time tree rings have been used to assist a cancer cluster investigation, scientists said.

Mark Witten, a toxicologist at the University of Arizona who is using his own funds to study both areas, is helping Sheppard take the core samples. He also is exposing leukemia cells to tungsten in a Tucson lab to see whether the metal affects the cells.

“The levels of tungsten we’ll use are calibrated to the amounts found in the tree rings in Fallon and in Sierra Vista,” he said.



Marilyn Newton/Marilyn Newton
Paul Sheppard, a dendrochronologist (tree-ring scientist) at the University of Arizona, takes a tree ring sample from a tree at Fort Churchill State Park on Wednesday.

Witten and members of the Arizona Congressional delegation have asked the CDC to do blood and urine tests in Sierra Vista so the results can be compared to the Fallon biological studies. But the agency has said it doesn't have the money to begin another extensive disease probe like the one underway in Fallon.

"Tungsten may not be the answer to the cause of the leukemia clusters, but it could be part of the answer," Witten said. "It could be a co-factor. We need to investigate further."

He said he is writing grant requests to continue his studies into the cancer clusters and the environmental factors that may be causing them.

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