

THE UPJOHN COMPANY

KALAMAZOO, MICHIGAN 49001-0199, U.S.A.
TELEPHONE: (616) 323-4000

June 13, 1995

Corporate Real Estate
Ted P. Pokorski

Manager
323-41-025

Telephone No. (616) 323-6500

Dear Mr. _____

In April, The Upjohn Company contracted with Tree Tech to plant a variety of trees between Zylman Avenue and East Shore Drive. Approximately 30,000 trees were planted. The perimeter was planted with Norway Spruce. The interior is a mixture of native hardwoods.

We hope you will enjoy viewing the growth of an Urban Forest in the coming years.

You may observe maintenance activity from time to time as the forester trims the trees and mows weed and grass growth between rows of trees. This will ensure a healthy silvaculture and protect Upjohn's investment for the future.

Additionally, Upjohn is providing the USDA Forest Service and Michigan Technological University a three acre parcel (see attached Gazette article) for scientific research in this same general area off Cox Drive.

In the event you should observe vehicular or recreational activities at these sites, please feel free to contact Upjohn Security at 323-5283.

Sincerely,



Ted P. Pokorski

TPP/paw-b

Enclosure

Aspens planted to monitor impact of ozone pollution

BY BILL KRASEAN
KALAMAZOO GAZETTE

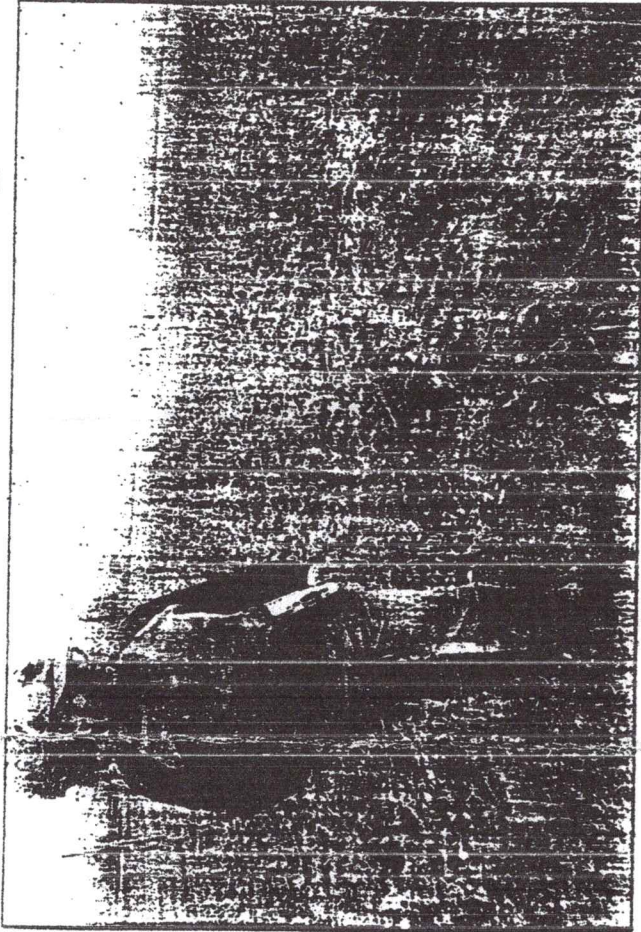
Aspen trees planted on Upljohn Co. property in Portage are helping researchers monitor the impact of ozone blown to southwestern Michigan from Chicago and other metropolitan areas.

Ozone, which comes primarily from vehicle tailpipes, can reach levels here that exceed federal safe standards. The gas, a molecule with three oxygen atoms instead of the normal two, is blown in on winds from Ohio and the greater Chicago and Milwaukee areas.

David Karnosky, a professor in the School of Forestry and Wood Products at Michigan Technological University in Houghton, said some of the 1,500 trees planted on land near Zylman Avenue and Cox's Drive, just north of Austin Lake, are particularly sensitive to ozone while others are not.

They will be monitored over the next several years to see if levels of ozone here slow tree growth or make trees less healthy, he said.

Upljohn's role in the project is only to provide land for the trees. Upljohn spokesman Peter Maas said the planting fit into the company's reforestation project on 51 acres of company land in Portage.



David Karnosky, a forestry professor at Michigan Technological University, looks over the 1,500 aspen seedlings planted on Upljohn Co. property as part of a test on ozone pollution.

The 1,500 aspen are among 32,300 trees planted at three locations, here and a similar one in Kenosha, Wis., will help Michigan Tech and USDA Forest Service scientists determine if ozone in a natural environment is as damaging as it is in a controlled test.

'Last year we planted in near Kenosha, another area with high ozone levels,' he said in a telephone interview. "And while it's still early in the research, trees have definitely shown visible signs of foliage injury. The leaves are not as vigorous as normal. We see substantial injury even in trees that are more tolerant of ozone."

The ultimate goal is to determine how elevated ozone levels affect all living things — including people. Ozone, when inhaled by animals or taken in by plants, triggers the production of compounds called oxygen free radicals that can damage cell walls and other tissue, Karnosky said.

Plants and animals produce anti-oxidants to temper the radical damage. With aspen and other plant species, the ability to produce these anti-oxidants may be a key to tolerance.

Karnosky said the ongoing aspen and other tree studies are part of revised federal clear air act requirements calling for a better understanding of the effects of elevated ozone on vegetation.

"We're taking it one step at a time," he said. "We know aspen from previous work. But it's difficult to extrapolate the impact from one species to another.

David Karnosky

ing to plants as it has been in controlled tests.

Trees have been exposed to carefully monitored ozone levels in confined chambers where conditions are not affected by changes in wind speed or direction — as they are in natural field tests such as the one here.

Karnosky said a decade of tests in the chambers has shown that ozone can slow tree growth. Tests in natural environments are the next step.