

## **Drinking Water Costs & Public Health Impacts**

The study evaluated the following public health and social costs and impacts: treating contaminated drinking water, lost land revenues and radiation doses and cancer deaths.

### **Drinking Water Costs**

The site poses a significant danger to people who live along Buttermilk and Cattaraugus Creek, the residents of Buffalo and the large population along the shores of Lakes Erie and Ontario. These populations are endangered by the risk of a radionuclide leak. We estimated water replacement costs if there were a catastrophic release of radionuclides approximately 500 years from the time of closure expected in the Onsite Buried Waste option. The costs are substantial in the first year—at over \$272.7 million dollars—and then decline to \$27.5 million per year to maintain the Buffalo and Erie County Water Authority's water treatment plants. This is only a case example, and does not include a substantial population along Lakes Erie and Ontario who could also be impacted.

### **Exposures to Radioactive Pollution and Projected Cancer Deaths**

We evaluated the public's exposure to West Valley radionuclides from both a rapid leak and a continuous leak scenario. We found that the radioactive waste buried at the site poses an unacceptable risk to the populations in the surrounding area, including those that draw their water from Lake Erie. Potential radiation doses from various exposure pathways could lead to enormous doses and illnesses. The doses to people living downstream and those drinking contaminated surface water will exceed standards, leading to adverse health effects as well as unnecessary deaths from cancer. Leaving these wastes in the ground presents a significant burden and public health threat to future generations as the waste will be radioactive for thousands to millions of years.

### **Scenario 1: Over 800,000 Lake Erie Water Users Exposed to Substantial Radiation**

If just one percent (1%) of radioactivity leaked from the site in a particular year, we calculated that a large population of over 800,000 Lake Erie water users would be exposed to substantial radiation, and that people downstream along the Buttermilk and Cattaraugus Creeks would be exposed to doses well in excess of federal and state standards.

### **Scenario 2: One Plant's Polluted Water Could Result in 334 Cancer Deaths**

If just 1% of the radioactivity leaks, starting in year 100 to 1,000 years into the future, it is expected that 400,000 people receiving Lake Erie water from the Sturgeon Point Water Treatment Plant would be exposed to up to 334,320 person-rems,\* resulting in the cancer deaths of up to 334 people. *This means that from 100 to 1,000 years into the future it is expected that up to 334 of the people receiving their water from one Treatment Plant are expected to die of cancer as a result of their exposure to contaminated water from Lake Erie.* The number of cancer fatalities would be greater if it included the entire population in the United States and Canada which receive their drinking water from Lake Erie, although it would be spread throughout a larger total population.

### **Lost Land Revenues**

As long as people are restricted from utilizing the land at the site, there will be lost land revenues. As a highly conservative hypothetical estimate, we assume that if the fully remediated land were used for agricultural purposes, it could bring in \$130,000 a year, which would be lost if the site is not cleaned up to allow such use.

(Excerpts from Section 4 of ***The Real Costs of Cleaning Up Nuclear Waste***)

\*"Person-rem" is a measurement of the collective dose in rems that a specific population is exposed to over a certain time period. The person-rem units represent the average dose per person times the number of people exposed. Doses are presented in units of rem or millirem (1 rem is equivalent to 1,000 mrem).