

# The yellow cake road leads to Nova Scotia

by Bob Kozak

The pundits entered and headed for the coffee urn, a source of heat on a relentlessly cold February morning.

A while later, chairperson Robert Mitchell, basking in the glare of the television lights, read aloud a news release: "An independent board of inquiry has recommended approval of the Key Lake Mining Corporation proposal for a uranium mine and mill in northern Saskatchewan." Objective. Not more than thirty words. And misleading.

The next day, public reaction began. Peter Clarke, president of the mining company who was standing to make a fortune told a Saskatoon daily that: "The Key Lake Mining Corporation can live with the recommendations made by the provincially appointed board..."

Beneath this story, on the business page, rested a 14-column inch response from some of the local environmentalists. It wasn't to be their day, and in slightly less than journalism school style, they criticized

the inquiry's report as "more than anything else, a slick and fatuous piece of public relations."

All by way of saying that uranium mining can be a nasty business.

### Nova Scotia's chance

Out through the rolling hills and small farms in the Annapolis Valley lies land similar to that which has yielded uranium in other provinces.

Shell Resources Ltd. searches throughout the South Mountain Range, sometimes in conjunction with Ontario Hydro.

Eldorado Mines Ltd. (a subsidiary of the federal crown corporation, Eldorado Nuclear Ltd., and part of a joint-venture at Key Lake in Saskatchewan) has been issued exploration permits in Lunenburg County.

E&B Explorations, supplying yellowcake to a South Korean electrical company under the

terms of a long-term contract entered in 1980, explores in various Nova Scotia counties.

Esso Resources Ltd., ready to develop a tremendous ore deposit at MidWest Lake in northern Saskatchewan, is busy in Yarmouth County.

Uranex Canada Ltd., with a one-sixth share at the Saskatchewan Key Lake deposit, has staked claims in Hant's County.

And Aquitaine Company of Canada is sitting on a deposit of one to two million pounds of low-grade ore near Windsor in Nova Scotia. The deposit, Jack Garnett of the Department of Mines and Energy has said, is "at a point in time when they have documented enough ore to develop a feasibility study to see if there is going to be a mine."

All in all, eleven companies or persons have staked claims to nearly two million acres out of the 13,746,368 acres of land in Nova Scotia. And as one observer said, they're not out there just to have tea in the forest.

One of the hazards of exploring for uranium, says Elizabeth May of the Ecology Action Centre and a board member of the Canadian Nature Federation, is in the disturbance of the ore, increasing the likelihood that radiation underground can find escape routes.

The uranium ore, usually covered with an overburden of rock, can escape through aquifers or into above ground streams and into the atmosphere when disturbed.

Although naturally occurring uranium ore can lead to slightly increased radiation levels in areas where it is found, May noted, the drilling of core samples and the blasting of trenches during exploration increases the chances of various radioactive gases filtering out and into the food chain.

"If it gets into the food chain it magnifies and concentrates in greater amounts at each step of the way," she said. From the grass to man, at each way along the process, the radioactivity concentrates in higher doses.

Exploration presents a fairly low-level radiation hazard, May conceded, nothing like the radioactive ore disturbance that happens through the mining-milling process, but significant. "The British Columbia Medical Association identified the process of uranium exploration as an underinvestigated area of concern."

Recently, the Medical Society of Nova Scotia decided to ask the provincial government for a halt to all aspects of uranium development in the province.

Delegates representing more than one thousand doctors across the province passed a resolution recommending that no mining proceed until technology has been developed to adequately and acceptably contain the wastes from uranium development.)

Exploration can include the removal of large quantities of bulk samples, and when it involves the removal "of up to one thousand tons of ore as part of the exploration process, it is essentially mini-mining," according to May, a member of the Canadian Council for Nuclear Responsibility.

### Miner for a...

Although exploration began in Nova Scotia in 1956, it has only been since 1976 that the companies have begun the search in earnest. The nine active mines in Canada are limited, thus far, to Saskatchewan and Ontario.

Mining nevertheless, increases the risk of exposure to radioactive materials

"When you are doing strip mining, you are removing tons of overburden to get at your uranium ore," says May, and this ore disturbance increases the radioactive output that

would be present in the environment.

Any mining in Nova Scotia would likely be open-pit.

Various radioactive gases are released during the mining process, the most potent being radon 222. As radon decays during its short half-life of 3.62 days, it gives off what are known as radon daughters.

These gases emit alpha, beta and gamma particles. And although the alpha particles have low penetration power - they can be stopped by a piece of paper - when breathed in or ingested in food, they become very potent carcinogenics, said May.

### Mill working

Before ore can be packed into barrels and shipped on down the yellowcake road it must be milled.

"Once ore is hauled out of the ground," says May, "it is crushed and chemically leached with various acids. The wastes head for the tailings pond and the separated ore - the yellowcake - is sent on its way.

That is not the end of the story, however.

Milling raises large amounts of dust. Radium and thorium - radon daughters - adhere to dust particles and when ingested can increase the likelihood of cancer for the mill workers.

The area immediately around the mill with its tailings pond storing the vast amounts of highly radioactive muck, will be exposed to increased levels of radiation and toxic heavy metals, says May.

In the past, these tailings have been used for such interesting purposes as providing foundations for houses and schools. Now, however, the concern is how to minimize any exposure to the environment.

To prevent the wastes, which contain up to 85 per cent of the radioactive wastes, from escap-

ing, dams must be built and maintained. But accidents happen.

"Toxic wastes and radiation from the Elliot Lake site in Ontario have killed fish downstream for about 55 miles in the Serpent River," May noted.

One concern about tailings stems from an increase in low-level radiation - nothing like the sudden burst from a major reactor accident or from weapons fallout - but still an increase over the natural background radiation, May said.

### When you wish upon a star

Trusting to future generations to solve the still unsolved problem of what to do with discarded mill wastes requires a "leap of faith," May said, referring to what Saskatchewan Premier Allan Blakeney said in justifying that province's role in the uranium mining industry.

The whole nuclear industry, says May, relies more on faith than most people would believe. "From uranium mining to reactor safety - it tends to become a religion. You just have to believe. You have to have faith that somehow these problems will be solved. In that sense it is quite the opposite of the people's perceptions of the industry."

### nipping it in the bud

"Our notion is to have a moratorium like the one in British Columbia," said May, namely a halt on all exploration and mining for seven years.

Although there is a partial moratorium on the issuing of new exploration licenses and the renewing of previously issued licenses, this has only politically muddled the issue, says May. Companies with previously issued one-year permits may still continue to look for the highly political mineral.

A partial moratorium is in effect in Newfoundland, where the Brinex deposit had elicited intense attention.

Its got to make money. Otherwise it doesn't make much sense to spend all that time digging away. Uranium, however, might not be the El Dorado that some would have you believe.

With the international uranium cartel broken, uranium prices have quickly dropped. Since late 1979, when uranium was resting at a steady three year value of \$48.00 per pound (Can) to its present value of \$29.00 (Can) per pound, prices have shown a steady decrease.

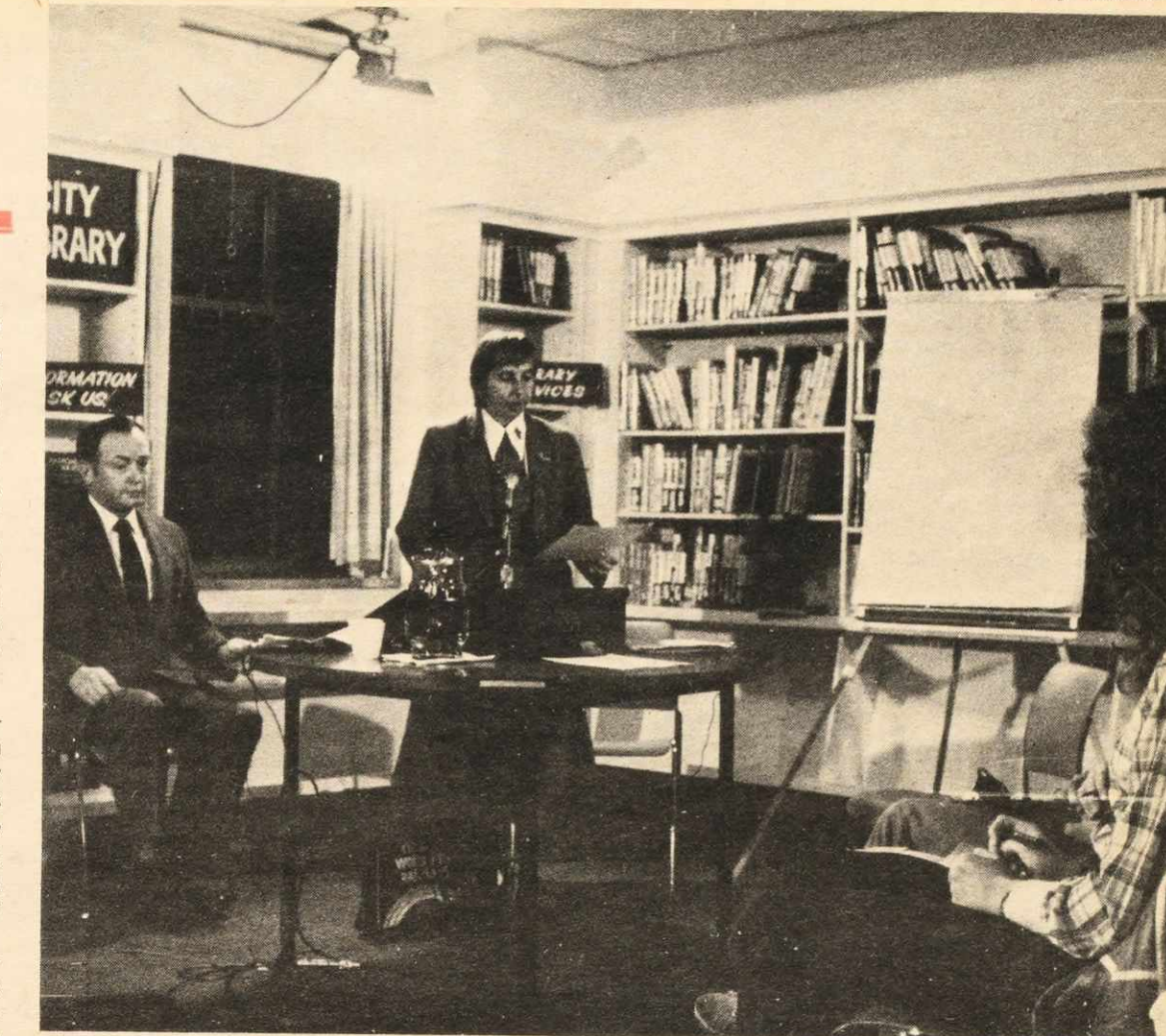
One of the reasons can be found in an over-increase in supply. The coming on stream of Australian and Saskatchewan mines coupled with a bad case of nerves and the corresponding decrease in reactor sales since the Three Mile Island accident has made life difficult for new comers.

The United States, consuming 40 per cent of the world's uranium production, has stockpiles estimated to be able to supply domestic reactors for 14 years.

With high interest rates and inflation, U.S. utilities are being forced to sell stocks at less than the cost of production at some mines, adding to the already depressed market.

The International Fuel Cycle Evaluation group has predicted a huge over-supply of uranium in the mid-1980's.

To grab a share of the market, mines coming into production and faced with high production costs had better be ready to undercut the competitors forcing the price even lower, or operate below capacity. That is, unless someone starts another cartel.



Dr. Rosalie Bertell spoke at the Halifax library on Nov. 12, providing disconcerting facts concerning the medical effects of low-level radiation.

## Regulations and public relations not resolving radiation worries

by Alice LeDuc

Despite government health regulations uranium mining is still unsafe, said Dr. Rosalie Bertell at the Halifax City Regional Library on November 12. Uranium-related occupational and community health problems prove this fact, she said.

Bertell, a cancer researcher and expert on the health risks involved in uranium mining, said, "In 1983, eleven hundred American uranium miners will die from lung cancer caused by the inhalation of uranium particles." The particles damage lung tissue cells.

In 1962, uranium was identified as the major cause of lung cancer among miners, Bertell said. In 1962, the government began to lower the legal occupational exposure level. "However, this lowering does not reduce the probability of lung cancer," she said. "It merely delays its occurrence."

Despite the death statistics, mining companies still say uranium mining is safe, Bertell said. "And by their terminology it is. The companies operate just within the safety guidelines. They are more concerned with making the biggest profit at the lowest cost than with worker safety."

They admit, however, that uranium mining is not safe for the general public, she said. "They say the community health standard is a permissible one accepted by the people."

Yet the decision of an acceptable standard was made without public consideration, she said. "The government decided. Then they left it up to public relations - persons with no scientific background - to get us over the phobia of radiation from uranium test holes and tailings."

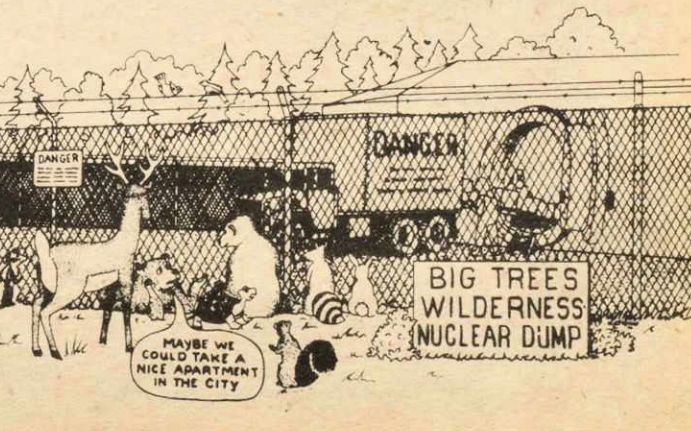
"These slick public relations are mere propaganda against public fear," she said. "Fear there is. And fear there should be."

The community health problems are just as alarming as the occupational ones, according to Bertell. "A number of diseases - such as asthma and chronic bronchitis - have been identified as uranium-related. The incidence of these has increased correspondingly with the development of uranium mining."

"The radioactive particles are in the atmosphere, in the ocean and in our food - the impact of which will be seen after the year 2000. Our children, particularly those of miners, will pay the bill for our social and economic benefits."

The regulation governing the allowable amount of radiation exposure to the public is an unenforced law, she said. Mining companies claim they cannot distinguish tailings radiation from natural background radiation. And, she said, the government allows them to get away with this "legal fiction."

Bertell also said that when industrial and government radiation protection experts calculate the radiation dosage of an average North American, "they do not consider what has escaped above and below the indicators when they measure the amount of radiation in the atmosphere. And they ignore what has already been taken in through the food chain and stored in our bones and muscles." Thus the



statistics they release are deliberately misleading, she said.

"Data, however, is not the point," Bertell said. "(The point is) we have the right to know what is in the air and water and what is moved into our backyard. It is a value judgement: the question is whether we will live if exposed to radiation."

"The gut level is survival," she said. "We have the energy to maintain life on this earth. But we must leave uranium in the ground." And, she said, more and more persons are beginning to believe this is so.

Meanwhile, mining companies and the provincial government say they are seeking public support for their plans to develop a uranium industry in Nova Scotia.

