

Low energy water purifiers

A Canadian company is planning to manufacture water purification devices that have such a low energy requirement that company researchers are considering the use of wind and tidal power to run them, reports C. Atwell Kinley in *Canadian Renewable Energy News*, February 1980.

The devices range in size and capacity from a hand-operated desalinator, able to produce 25 gallons of potable water a day, to a motorized unit with a 10,000 gallon a day capacity.

Seagold Industries Corporation of Richmond, British Columbia, plans to manufacture the hand-operated desalinators by April, and the intermediate motorized units (with a 200 to 1,500 gallon a day capacity) by the end of 1980.

Because of the units' portability and relative energy independence (in a pinch, the 200 gallon a day model can be manually operated) the company sees a large potential market for their products as emergency equipment.

The desalinators use positive displacement energy recycling pumps to strain fresh water from brine through a plastic membrane that rejects dissolved salts. The membrane, developed in the United States, has been proven an effective barrier to bacteria and viral pathogens, as well as to dissolved organic and inorganic pollutants such as phenols, soaps, chlorinated compounds and heavy metal ions.

Water extracted from impurities

"The pump does not extract the impurities from the water," says Dr. Bowie Keefer, engineer-physicist and president of Seagold. "The water is actually extracted from the impurities. In addition, it doesn't matter what the impurities are.... They could be chemical warfare agents or radioactive waste."

The hand-operated models will probably find their way into life rafts, leisure boats, and even backpacks. The medium-sized models have numerous applications.

"The intermediate units could be used to purify the domestic water supply in remote areas," says Colin Ostick, chief engineer. "There are large areas, for example, deserts and marshes, where the water is brackish."

The company also anticipates a place for their products aboard Canada's commercial fishing fleet. The unit would provide drinking water and therefore

free up space now taken by a ship's water storage tanks. They would also make available an unlimited supply of fresh water for glazing frozen fish.

Ostick explains a catch of fresh frozen fish glazed in a weak solution of salt and fresh water brings a better price than a catch which only saltwater was used for glazing.

Desalinators save power

The desalinators are expected to cost \$900 for the hand-operated models, \$4,000 for the 200 gallon a day "household model" and \$75,000 for the 10,000

gallon a day unit.

What puts the Seagold desalination system ahead of other reverse osmotic processes is the energy recycling pump which recaptures pumping energy wasted in other systems. "Our pump uses one quarter the power of existing reverse osmosis desalinators," says Ostick. "The intermediate units take from one-half to one horsepower, while the larger unit runs on about 10 horsepower."

In addition to their working prototypes, Seagold has a gigantic 250,000 gallon a day reverse osmosis purification system on the drafting boards.

Heli-skiing for the hardy in British Columbia interior

The high peaks of remote interior mountains of British Columbia have become a lure for enthusiastic skiers, who reach the untracked slopes by helicopter.

This scene is not for everyone, however, and Hans Gmoser of Canadian Mountain Holidays (CMH) explains that deep snow heli-skiing, as it is called, is a physically demanding experience and only the fit and ready will enjoy it. He suggests taking a week's tune up course in the Canadian Rockies prior to the actual heli-skiing experience. The extra preparation, however, has not restricted the popularity of heli-skiing.

Canadian Mountain Holidays now operates in seven separate areas and is offering a total of 4,094 ski weeks for the

1980 season. Originally identified with the famed Bugaboos, CMH has opened another new area this year at Revelstoke, British Columbia with easy access to the mighty Monashee Range to the west and the Selkirks to the east.

"This is a deep snow area," says Mr. Gmoser, "and provides really exciting free-skiing (forested slope or glade skiing) once you get below the tree line."

The helicopters transport groups of four to 11 or, if an individual wishes to reserve his or her own helicopter with guide, a smaller machine is available.

Details and information on all seven areas can be obtained directly from Canadian Mountain Holidays, Box 1660, Banff, Alberta, Canada, TOL 0C0.



Skiing by helicopter is just another phrase for freedom...free to choose the right slope, the best snow conditions from any of six selected mountain ranges in British Columbia.