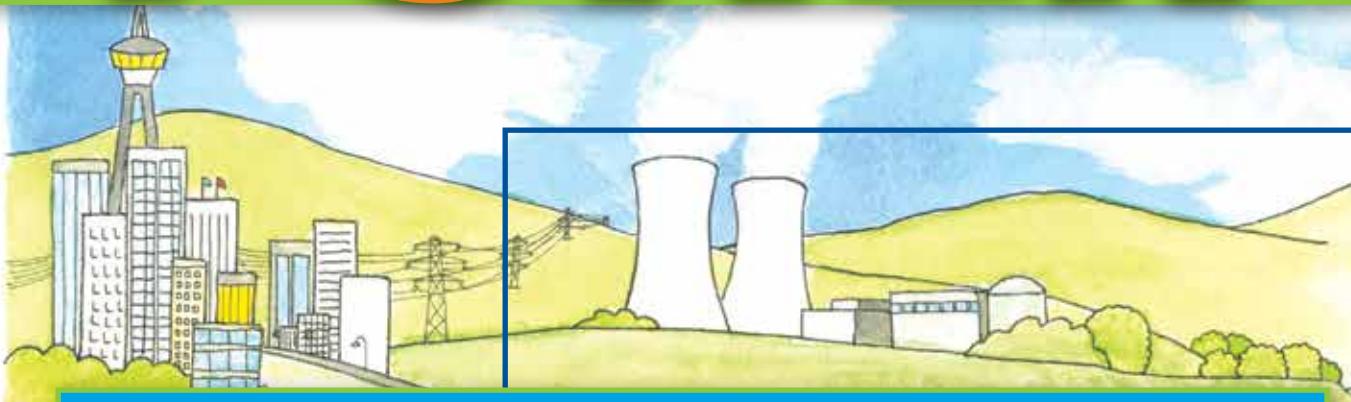




# POWER brought to you by...

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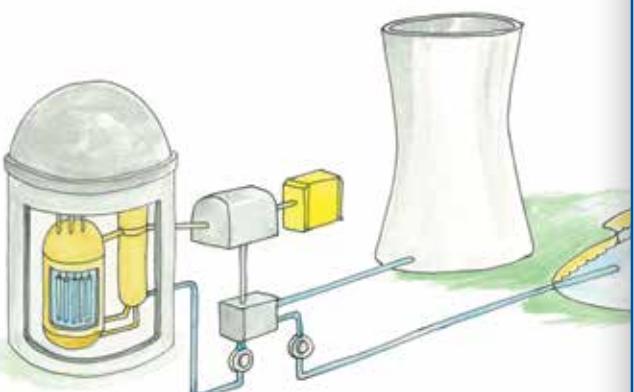


## Alternative Energy Technology

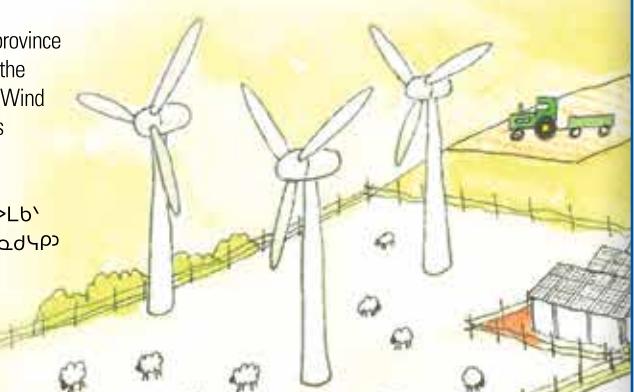
Alternative energy includes renewable energy that comes from natural, renewable resources such as sunlight, wind, water, and geothermal heat. Use of renewable energy has been increasing around the world. Hydroelectric power leads the way in Canada and other sources are on the rise. Another alternative source of power in Canada is nuclear energy.

Whatever energy sources we use, the metals and minerals of the Earth, along with the people who find and process them, make them possible.

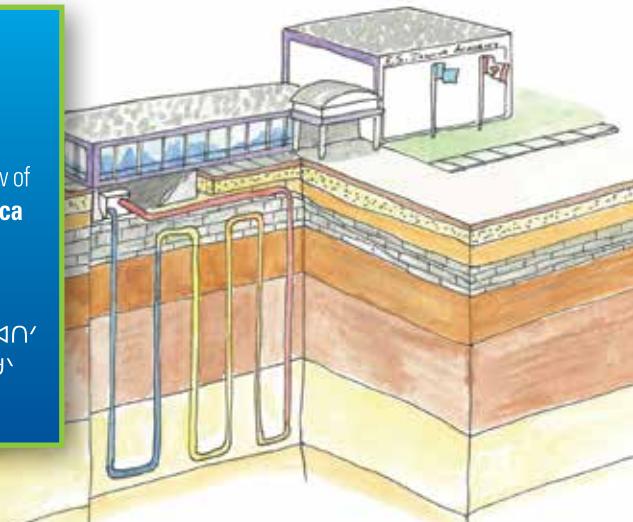
### Energy Sources

**Nuclear Energy**   
Nuclear energy is created when metal tubes containing uranium (fuel rods) are used to boil water, producing steam that drives electricity-generating turbines. Nuclear reactors generate a lot of energy using small amounts of uranium and do not emit greenhouse gases; however, they produce radioactive waste that must be managed.

Canada is one of the world's largest uranium producers and is a leader in nuclear research and technology. Atomic Energy of Canada, working with Canadian industry, developed CANDU nuclear power reactors, which are exported worldwide.

**Wind Energy**   
Wind turbines use wind to turn huge tower-mounted propellers, converting its energy to electricity. Well-situated wind turbines produce varying amounts of electricity, depending on the wind.

Canada has tremendous wind power potential. Strong, steady winds blow in every province and territory. Some of the best areas are offshore and along coastlines; Canada has the world's longest coastline. Ontario produces the most wind power, and the Canadian Wind Energy Association envisions wind power providing a significant amount of Canada's electricity by 2025.

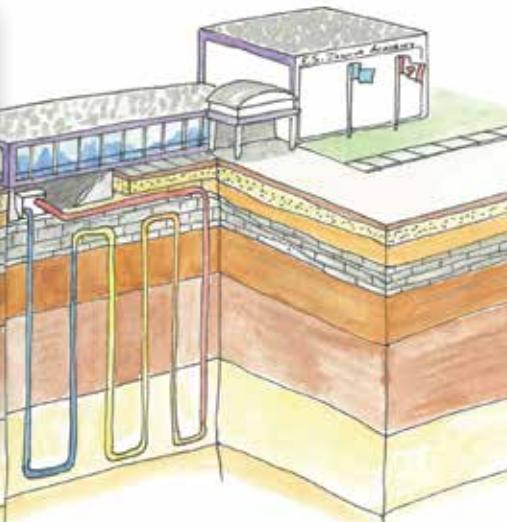
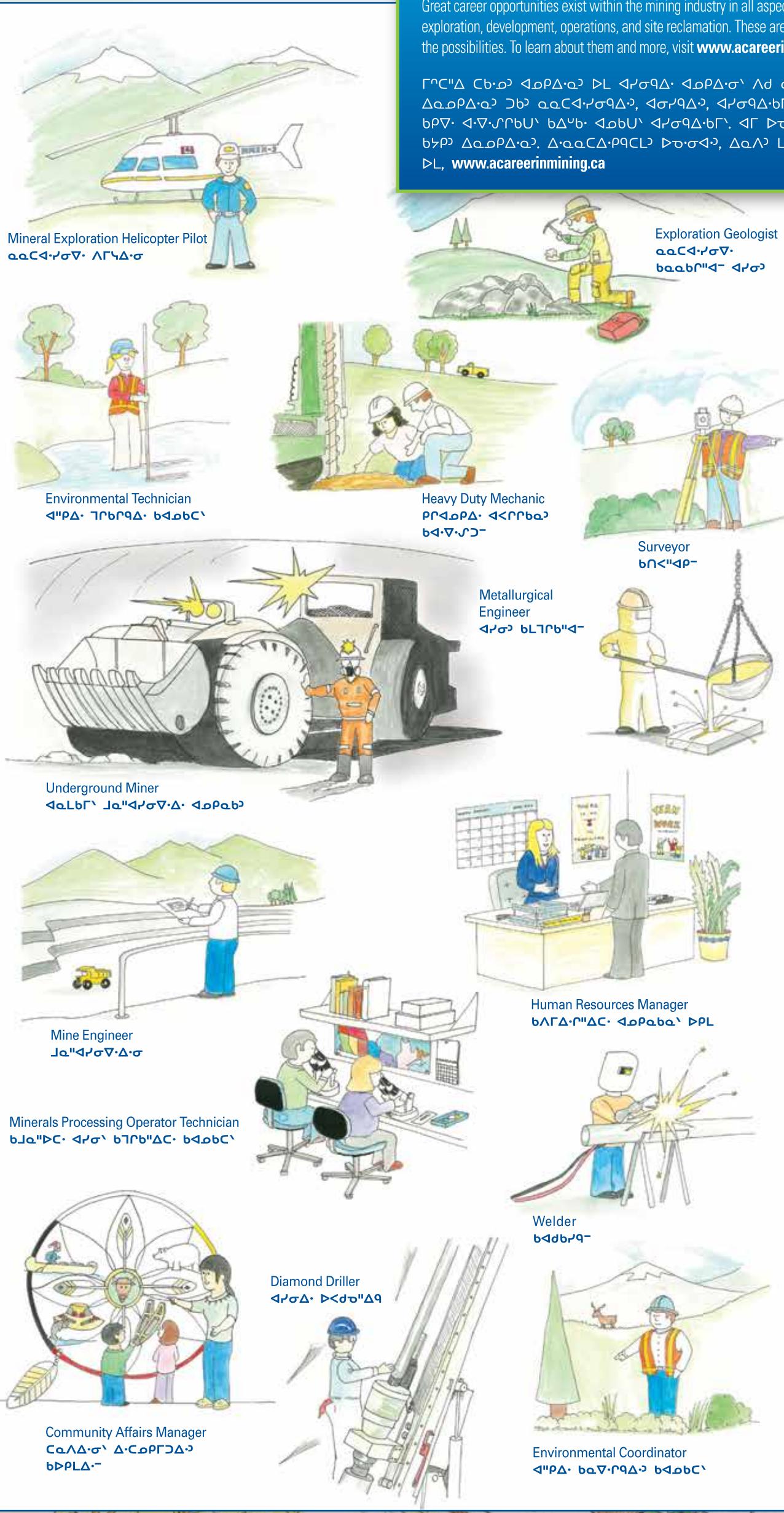
**Geothermal Energy**   
Geothermal energy comes from heat found below the surface of the Earth. Years ago, hot springs gave people access to geothermal heat. Today, drilling into the Earth up to 3,000 meters gives greater access in two ways.

## GEOTHERMAL ENERGY

What's Inside? Molybdenum, Iron, Copper, Rare Earth Elements (REEs)

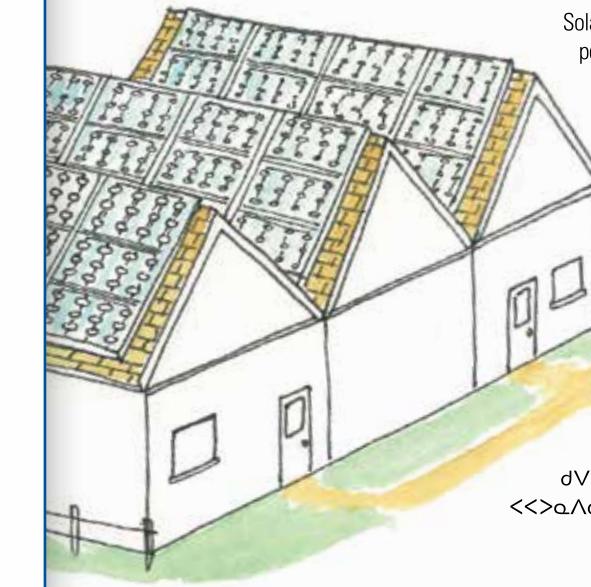
Great career opportunities exist within the mining industry in all aspects of exploration, development, operations, and site reclamation. These are just a few of the possibilities. To learn about them and more, visit [www.acareerinmining.ca](http://www.acareerinmining.ca)

## The People



Hot water or steam below ground level is brought to the surface, or surface water is pumped down through hot ground and brought back up. The resulting hot water heats homes and buildings or turned into steam to turn electricity-generating turbines. Geothermal energy plants produce little pollution, operate day and night, and generate high rates of electricity.

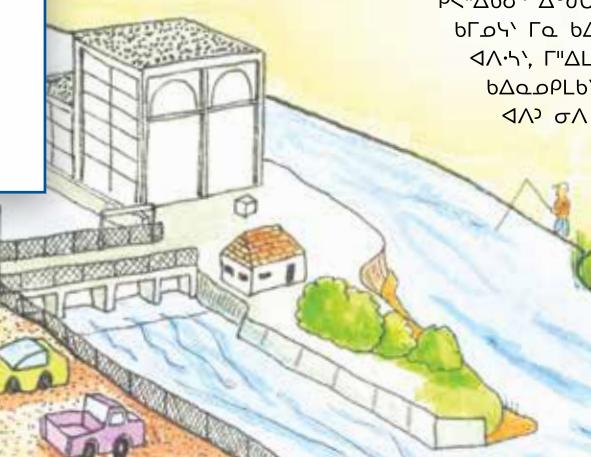
A Geological Survey of Canada assessment found that Canadian geothermal resources could supply up to 10 per cent of our electricity. The most development potential exists in Western Canada. The Canadian Geothermal Energy Association believes that 5,000 MW of geothermal power could be supplied by 2025.

**Solar Energy**   
Solar energy, or energy from the sun, can provide lighting and heat as well as electricity. Solar photovoltaic (PV) technology uses solar panels to convert the sun's energy to electricity. PV panels can be on the ground, on building rooftops, or designed into building materials. In the future, everyday objects, such as clothing, car rooftops, and roads, could become power-generating solar collectors.

## SOLAR ENERGY

What's Inside? Silver, Silica, Germanium, Molybdenum

Solar energy is generated during the day, when energy is most needed and most expensive. Solar power technologies help utilities match supply with demand and can reduce natural gas usage during peak periods. In Canada, southern Ontario, Québec, and the Prairies receive the most sunlight; however, solar installations exist across the country.

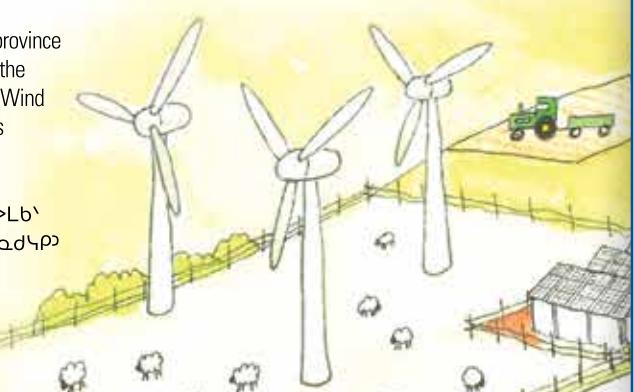
**Hydro Power**   
Hydroelectric power is produced by flowing water. Long in use, it is the most reliable and cost-effective renewable power generation technology available. When flowing water turns turbine blades, the turbine's electromagnets interact with the coils of a generator to create electricity. The water could flow from a natural waterfall or from behind a dam. After the water has helped create electricity, it flows back out to the river.

## HYDRO POWER

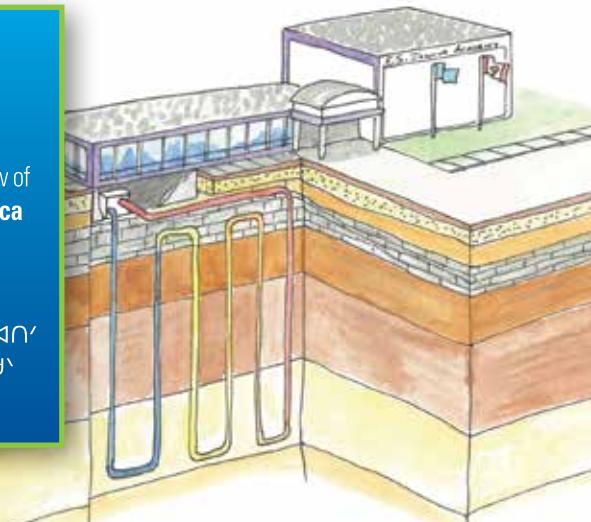
What's Inside? Copper, Iron, Aggregates, Silica, Aluminum, Gypsum

Hydro power is a flexible power source. Water can be stored in reservoirs and used to stabilize the electrical system when other renewable energy, such as wind and solar power, is reduced.

Canada's vast water resources include many flowing rivers that generate hydro power, providing over 60 per cent of our electricity.

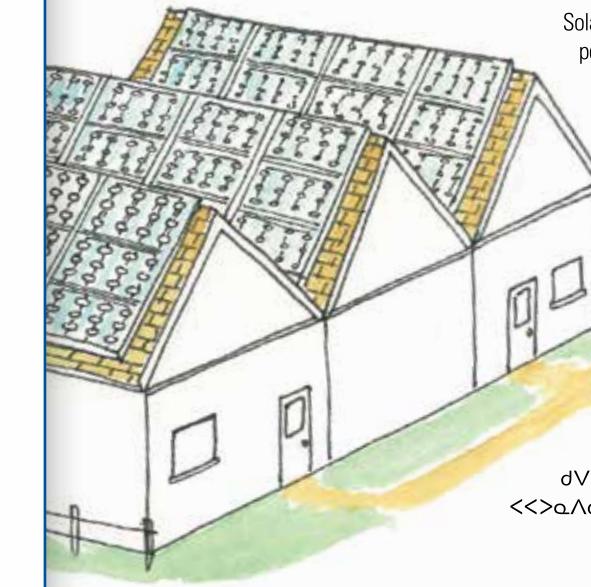
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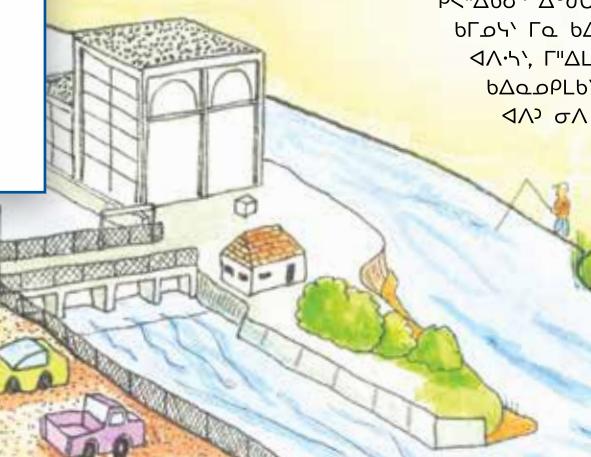
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