



TOXICCanada:

13 GOOD REASONS TO ESTABLISH A CLEAN CANADA FUND

**A REPORT BY
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AND
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INTRODUCTION:

Unlike most developed countries, Canada has no national program to deal with contaminated sites. Abandoned mines and tailings ponds create toxic nightmares, contaminating rivers, lakes and surrounding lands. Local communities are left to deal with the toxic legacy, or, frequently, to cope and live with the contamination and its impacts on their health and the health of their children. Recent increases in imports hazardous waste from our trading partners, paired with Canada's inability to deal with existing waste properly increase the urgency for developing an effective national program to deal with

There is no inventory of the contaminated sites across Canada; there is not even a reliable estimate of the number of them. Toxic sites include closed industrial areas sites in cities, abandoned hazardous waste dumps, old DEW line sites, landfills, nuclear power plants, mines sites and tailings ponds. At least 5000 of these are in federal custody.

Cleaning up these legacies of Canada's irresponsible past is a key indicator of environmental stewardship. It is about preserving the ecological systems that support our economy and our quality of life: our air, our water, soil and forests, our plants, our animals and our climate. It is about understanding the impact of the financial and environmental liabilities created by past industrial practices on our nation's present well-being.

We are learning that the health, environmental and economic costs of not dealing with these sites are enormous. Leachate from the sites poisons rivers, lakes, oceans and groundwater (like the Sydney Tar Ponds and PCB contamination of beluga whales in the St. Lawrence River). The health of present and future generations is being undermined, and residents, particularly children and other vulnerable populations living in communities affected by these toxins, are at risk. As the government undertakes more research into the effects of toxins like heavy metals and endocrine disrupters on health; the perceived need to clean-up toxic sites will grow. A poll undertaken by Environics in October 2001 showed that 84% of Canadians felt cleaning up communities affected by toxic waste was very important; and 78% felt it was more important than cutting personal income taxes, or corporate taxes (91%).

From 1989-1995, the Canadian Council of Ministers of the Environment lead the National Contaminated Sites Remediation Program. Although this joint federal-provincial program ceased operation in March 31, 1995, the problem has worsened.

The following report highlights one contaminated site per province or territory. The sites do not necessarily represent the worst example per region, but rather represent a range of the most common types of contaminated site that Canada must deal with.

Newfoundland, Argentia

At Argentia, Newfoundland, 100 kilometres southeast of St. John's, the United States ran a 3,600 hectare naval base from 1941 to 1994. When the Americans finally abandoned the base, they left behind a toxic legacy.

Barrels of PCBs were left behind, along with heavy metals and asbestos. Landfills full of toxic waste pepper the site, and waste fuel has seeped into the water table, contaminating the local water.

Argentia is one of 51 decommissioned US military sites across Canada. The total cost of cleaning them up has been estimated at \$720 million dollars, double earlier estimates. They are contaminated with a range of toxics, including PCBs, mercury, lead, radioactive materials and various petroleum byproducts. Cleanup is expected to take 30 years.

The extent of the pollution is staggering.

Compounding the problem is the further health and environmental risk posed by shipping much of the contamination across Canada for disposal at the infamous Swan Hills facility (See Alberta section). Putting communities along the routes at risk, and then replacing one form of contamination with another is not a solution.

PEI – Sleepy Hollow Landfill (Queens County)

In Prince Edward Island, the repeated fish kills due to heavy pesticide use could have qualified the province itself as a contaminated site.

The Trigen incinerator has been called the number one source of mercury pollution in the Maritime region. In addition, until recently, the fly ash (the most toxic part of the incinerator ash) from the site has been dumped at the Sleepy Hollow landfill without even minimum action to prevent this material from leaching into the groundwater. In other provinces fly ash has always been identified as a toxic material and has been dealt with accordingly.

In addition, PCBs leaking into the St. Lawrence River from the sunken Irving Whale, originally slated to be burned in the incinerator in Charlottetown, were diverted when it was determined that this option was not viable. Where the PCBs are stored or buried no one seems to know, or at least if they do they are not divulging. The Sleepy Hollow landfill is as likely a dump for them as any other in PEI.

The cost of properly containing hazardous materials dumped in the landfill is unknown.

Nova Scotia: Sydney Tar Ponds

Sydney, Nova Scotia's infamous tar ponds are North America's largest toxic waste site. The area contains over 700,000 tonnes of toxic sludge, of which an estimated 50,000 tonnes are contaminated with polychlorinated biphenyls (PCBs). The "tar ponds" are actually not ponds at all. The accumulated toxic waste is situated in a tidal estuary, which sends PCBs to the ocean with every tidal cycle. To put the problem in perspective, the tar ponds contain over 35 times the amount of toxic sludge contained in New York's infamous Love Canal.

It's been about 15 years since the federal and provincial governments launched a project to clean up the tar ponds. The 'clean-up' project was a mammoth failure and was abandoned.

The entire area surrounding the tar ponds is severely polluted. Toxic materials are widespread and come in many forms. Just upstream from the tar ponds, the 51-hectare coke oven plant is now a broken field of coal-black rubble and wild grass. Scientists also do not know if the grasses growing across the 51 acre plant are transforming the poisons, or causing them to become airborne. Benzene, toluene, kerosene, naphthalene, and tar are some commercial byproducts created by the coke plant.

Above the coal plant, just beyond a bright yellow mountain of pure sulphur, is a century-old dump. A 76-metre-high mound of garbage topped by an aging incinerator spews deadly mercury from its stack. A bright orange waterway running through the dump was once a healthy brook. The massive area between the tar ponds and steel mill is known as the "high dump." It is a scary place, a long hill of slag and industrial waste. No one has even begun testing soil here. When it rains, puddles turn fluorescent green. Perhaps most disturbing is that the area is still being used as a clandestine dump. Truckloads of undocumented industrial junk are dropped amid the slag every week.

The entire wasteland is bordered by homes, ball fields, playgrounds, schools, supermarkets and even restaurants. In July, 1998, tests confirmed what some residents have long suspected. The deadly toxic brew has invaded their lawns, a brook where children play and even the groundwater beneath their streets. The toxic pollution is most noticeable on Frederick Street.

Officials know the coke plant's benzene tank leaked for years and that a substantial amount of the ground is saturated with the deadly chemical. The Health Canada scientist involved in studies of the area says he literally lost his breath when he got downwind from the benzene spill. Another tank, open to the air, contains an unknown mix of chemicals that site officials refer to as "nasties." What they know about the mess of poisoned land and water in the centre of this city is scary enough. What they do not know is terrifying.

However, only in the last few years have officials begun to admit that no one knows what brew of deadly chemicals has cooked in the 160 kilometres of rupturing, underground

pipes beneath the old coke oven plant. In some areas, the ground regularly erupts in flames which can not be quenched. The underground pipes carry some of the most deadly chemicals known to humanity. Provincial employees are scared to try and dismantle the underground pipes for fear of causing an explosion. Former oven workers told provincial officials that most of the pipes were never purged.

The results of tests done in the area north of the Coke ovens site (down wind) revealed levels of all or some of the chemicals tested for that exceeded the guidelines for tolerable exposure, with levels in some cases exceeded by 71 times! There are toxic chemicals like arsenic, molybdenum, benzopyrene, antimony, naphthalene, lead, toluene, tar, benzene, kerosene, copper and polyaromatic hydrocarbons (PAHs). All of these are found to be contaminating the area at levels well above those permitted by the CCME (Canadian Council of Ministers of the Environment) health guidelines.

These chemicals are known to cause a variety of health problems, including cancers, birth defects, heart disease, kidney disease, brain damage, immune deficiencies and skin rashes. The residents are desperate, hoping the results will prompt the government to relocate them as they did with 14 families on Frederick Street.

Nova Scotia has the highest rates of cancer in Canada, and within the province, Cape Breton tops the charts. It has the highest rates of lung cancer, breast cancer & stomach cancer in the province.

Cancer rates in Sydney, as opposed to in the rest of Nova Scotia are as follows:

In Men:		In Women:	
Cancer of the stomach:	78% higher	Cancer of the stomach	78% higher
Colon and rectal:	77% higher	Cervical	134% higher
Brain	68% higher	Brain	72% higher
Prostate	40% higher	Breast	57% higher
Bladder	39% higher	Lung	40% higher
Lung	22% higher		

And there are other problems. Some of the chemicals interfere with the endocrine system, wreaking havoc with the hormones essential for normal development. These are the hormones which guide the development of sexual characteristics, the immune and nervous systems, the brain, and behavioural characteristics. Children living in Whitney Pier exhibit higher levels of genital abnormalities, learning disabilities, and behaviour problems.

Residents have high rates of heart disease, asthma, nose bleeds, headaches, and disorientation.

The Federal Government has indicated its commitment to relocating the residents; more testing for acute exposures to lead and arsenic have been undertaken, but these tests will not reveal the extent of chronic exposure the resident have to the toxic soup of chemicals they are exposed to, and are of questionable value.

The residents must be evacuated immediately.

New Brunswick - Miramichi River

In 1924 a wood preserving operation was opened by Domtar. Over the years, the company employed a number of preservatives, all toxic, and all persistent in the environment. Preservatives included creosote (which has been declared toxic under the Canadian Environmental Protection Act) and pentachlorophenol, a chemical infamous for its dioxin and furan contamination. A pulp mill was later built on the shores of the Miramichi at Newcastle. Operations have left 20,000 tonnes of wood wastes each year, dumped into the river, and settling on the bottom.

In 1956, a base-metal mine, Heath Steele, was developed in the Tomogonops/Northwest Miramichi River watershed. Millions of gallons of water carrying base metals were pumped into the Tomogonops River, eventually being deposited in the Miramich..

In the late '60s and early '70s, studies began to link irregular migratory movements among adult Atlantic salmon encountering effluent from Miramichi Pulp and Paper Mill, and subsequent looks at reports the effluent from the Domtar wood preserving plant is highly toxic to aquatic life. Oil spills were a frequent occurrence.

In 1984, the federal government found the levels of dioxins 100 times greater than three years previously in the areas around Domtar's plant. The plant shut down the wood preservative works, but continued to prepare poles for treatment.

In 1986, studies link diminished water quality due to Domtar's pollution, and then the City began to find high levels of PAHs. Wells began to be shut. By now, what few salmon were left were inedible, due to contamination.

In 1992, a report was released by Environment Canada that showed the River's contaminants, which included DDT, PCBs, PAHs, PCPs, copper, cadmium, zinc, dioxins, furans, and resin acids. The sources of all these contaminants could be pinpointed. Some or all could be found in the sediment of the Miramichi River and estuary, the river water itself, or the tissue of mussels, oysters, lobsters, eels, striped bass, white suckers, flounders, shad, gaspereau and salmon.

(With information from the Conservation Council of New Brunswick)

Quebec-TECHNOPARC (Montreal)

During the summer and fall of 1988, Daniel Green, of the Montréal based environmental organization – the Société pour Vaincre la Pollution (SVP), noticed a continuous flow of hydrocarbons and toxic wastes in the St-Laurence River from an old landfill site under the Technoparc site, situated next to the Victoria Bridge, less than 2 km from downtown Montréal.

In addition to the toxic flow into the river, Green also came across two containers on the bank of the river holding many 200-liter drums filled with pumped wastes from the site. On one of the drums was an analysis report of samplings of hydrocarbons coming from the flows of toxic substances in the St-Lawrence River. Analytical results of the toxic waste flow sampled in the river show levels of PCB's of up to 110mg/L. Under Canadian law, a PCB waste over 50 mg/L is considered a hazardous waste.

Historically this site was used to bury domestic and industrial waste until 1966. It was then covered with asphalt to be used as a parking lot for Expo 67. Until 1972 it was used as a small city airport.

Aware of the results of the studies conducted in 1988 and in 1989, the city of Montreal decided to develop this site into a park dedicated to research in advanced technology; the Technoparc.

Since October 1995 and possibly before, the City of Montreal has been aware of the PCB contamination of the site, but have neglected to report the situation to the Minister of the Environment. The governments of Québec and Canada, as past owners of the site, must have been aware of the contamination risks linked to the Technoparc.

In the contract of sale to the city of Montréal, the province of Québec did state that " The City obliges itself to do or to get a study of characterization done on the dangerous substances that the grounds and underground of this site may contain... The price of this study, for the maximum amount of \$300 000, will be deducted from the price of sale."

Similarly, in the federal sales contract, it is stated that, " The City of Montreal accepts the property as it presently stands and expressly discharges Her Majesty in right of Canada of all responsibilities relative to the title of the property and to the condition of the grounds and underground's of the property and it will exonerate completely all claims, demands, actions, procedures, losses, finds or expenses related to the condition of the grounds and underground of the property." Additionally, part of the site was sold to the city of Montreal by the federal government for an amount of one dollar (1\$).

Compounding the problem is a CN railway yard, situated to the west and northwest of the Technoparc that might be another source of contamination of the St-Lawrence River.

Ontario: Beckwith Township

Residents of Beckwith Township in Ontario are living with Triichloroethylene (TCE), a highly volatile liquid used in metal degreasing, which has been found in varying quantities in their tap water. Listed by the federal government as a "toxic substance" and "probable human carcinogen," TCE was blamed by many for the leukemia-related deaths of 16 children in Woburn in the 1980s. The deaths and the legal drama that followed were the subject of a 1999 movie *A Civil Action*.

A nine-kilometre-long plume of contamination, spreading through the groundwater from an abandoned municipal dump, stretches under Beckwith. The town's drinking water supply comes from wells, which have become contaminated.

TCE (Trichloroethylene), a volatile liquid used in metal degreasing, has been found in the drinking water of Beckwith Township. TCE is a known carcinogen.

Though bottled water is being provided to some of the town's 5,500 residents, most are still forced to wash and bathe in the contaminated water, activities that expose them to the TCE through evaporation and absorption.

The people of Beckwith Townships need immediate action to protect their health from contaminated water.

Lynn Lake- Manitoba

The mining company Sherritt-Gordon opened the first nickel mine in Lynn Lake in 1951 and operated several other zinc, copper and gold mines in the area until its departure from the province in 1986. Since then, several other mining firms have mined and milled minerals, the most recent being Black Hawk Mining. None of these companies nor successive provincial governments has either individually or jointly taken responsibility for mitigating damage caused by these mining activities.

The Provincial Department of the Environment has identified 11 contaminated sites within the town boundaries. Acid mine drainage is occurring throughout the 1200 hectares of inactive mining properties adjacent to the town. Residents report elevated levels of cancer and early deaths. An aquifer linked to the town water supply, as well as a number of fish-bearing rivers and streams are contaminated.

The town is faced with a major water problem. It has recently requested the installation of a new water treatment plant under the cost shared infrastructure program estimated to cost \$2.56 million. This would include partial replacement of the water distribution system, which has been severely eroded by chemicals released from the tailings used as foundation material and backfill in town site and residential areas.

The town and the local First Nations community are both concerned about the toxics being deposited into rivers and lakes downstream from the mine sites, since the resulting contamination will have a substantial effect on commercial fishing and processing operations of Matthias Colomb, Granville Lake and South Indian Lake.

One estimate from the DOE in 1993, states that more than \$10-15 million may be required just to deal with air quality issues.

There have been no closure plans, no scientific studies and no risk assessments conducted with regard to human health or animal and aquatic life. The Lynn Lake Adjustment Committee has requested an environmental health risk assessment for the region.

(from information from Victoria Adams, Griffon Business Group, and Mayor Audie Dulewich)

Saskatchewan -Uranium City

Lake Athabasca, straddling the far north portion of the Saskatchewan-Alberta border, is one of Canada's largest lakes. Home to Dene Nations on both sides of the border, it was once home to a major commercial fishery. Now the commercial fishery has been supplanted by tourism — eco-tourism, sport fishing, and hunting. But for a large part of the past century, uranium mining was the mainstay of the region's economy. Uranium City was built in the 1950s to house the miners and prospectors and their families. By the early 1980s the boom was over: the mines shut down and most of the population left, looking for work elsewhere. Empty buildings and deserted mine sites were left behind — and so was the contaminated legacy of the mines' wastes.

In the 1950s and 60s, there were no environmental regulations governing the closing or “decommissioning” of uranium mines, and the radioactive and acidic wastes (or “tailings”) were simply been dumped, often in nearby lakes, and left there. This is what the people who stayed at Uranium City, and the Dene people of Fond du Lac (on the Saskatchewan side) and Fort Chipewyan (on the Alberta side) are left with. The contamination appears to be localised, but could easily spread if disturbed. In 1993, Alberta Premier Ralph Klein called the situation one of Canada's “worst environmental nightmares.” Meanwhile, efforts to clean up the sites have been held up by wrangling between the federal and provincial governments over liability and money.

At the Gunnar site, the tailings were simply bulldozed into a small lake, which eventually overflowed into Lake Athabasca. At the Beaverlodge mine, tailings were dumped into Beaverlodge Lake. The Saskatchewan and federal governments have been arguing about who will pay for the cleanup for years, with no resolution in sight. Cameco Corporation, formed when Eldorado Nuclear was partially privatised, has stabilised the tailings at the Beaverlodge site, but the bulk of the wastes remain in the lake.

The province has estimated that cleaning up the Gunnar and Lorado sites would cost \$10-15 million; based on experience with other contaminated sites a full clean-up could cost ten times that much. No estimates have been made of the cost of NOT cleaning it up, but since the downstream communities and all the other economic activities in the region depend on clean water, it is critically important to prevent any further contamination, and clean up what is there.

Background:

Uranium was discovered on the north shore of Lake Athabasca in 1936. Commercial production started in 1953 at the Beaverlodge mine on Beaverlodge Lake. The town of Uranium City was established in 1952 to service the Beaverlodge mine and others that followed. By the late 1950s, ten mines were in production; the boom lasted almost three decades, ending with the closing of the Beaverlodge mine 1982. All of the mines in the vicinity fed into three processing facilities, at Beaverlodge, Lorado, and Gunnar. Laredo, in operation from 1957 to 1960, is the smallest, with 0.6 million tonnes of tailings covering 14 hectares. Gunnar was in operation from 1955 to 1964, and left 4 million tonnes of tailings over 75 hectares, while the Beaverlodge operation left 6 million tonnes over 25 hectares. Although the uranium ore was not of a high grade (unlike the newer mines), the tailings still contain 85% of the radiation of the original ore (thorium, radium, polonium etc. are left behind when the uranium is extracted) as well as other metals and, in the case of the Lorado and Gunnar sites, they are also acid-generating.

Alberta: Swan Hills

Canada's largest incineration facility, once boasted to incorporate state-of-the-art technology in destruction and disposal of hazardous waste, has earned a well-deserved reputation as a serious polluter. In July 1991, Chem-Security (Alberta) Limited (CSAL) filed for approval to add an incinerator (40,000 tonnes annual capacity) to the existing 13,500-tonne capacity Alberta Special Waste Treatment Centre (ASWTC). Since then, the facility has been plagued by a series of explosions and leaks. Criminal charges have resulted in conviction and fines for failure to report emissions, and the operators have been sued by local first nations who have been unable to consume wild fish and game due to dioxin contamination caused by the facility. Ultimately, the suit was dropped when the first nations group ran out of money.

The toxic waste disposal facility at Swan Hills has cost Alberta taxpayers \$440 million so far, and is expected to cost much more. The province of Alberta will be responsible for cleaning up the site that has been operated by BOVAR once it is shut down. Preliminary estimates pegged the cost of clean up at between \$9-57 million, but this figure does not take into consideration the increased costs of cleaning up the contamination caused by the leaks and explosions of the late 1990s, and not including the costs of long-term monitoring of the site.

British Columbia - Tsolum River (Washington Mine)

The Tsolum River on Vancouver Island provided rich runs of coho, pink, chum and cutthroat salmon and steelhead trout for thousands of years. The river was rich in invertebrate life, free from silt.

Impacts on the river started in the 1950s with clear-cut logging that occurred along almost its entire length and breadth. The logging brought flooding, movement of gravel, silting and smothering of eggs. Irrigated agriculture further reduced water levels, and farm fertilizers left their own impacts. Spawning gravel was removed from the river to build the airbase at Comox.

To cap it all, in 1964, Mt. Washington Copper moved into the upper watershed and built an open pit mine. It went into receivership in 1966, leaving unreclaimed pits and waste rock piles where pyrite ores lay exposed to water and oxygen. This ore, with a high content of sulfur, quickly formed sulfuric acid by coming in contact with oxygen and water. A copper leachate formed and reached the Tsolum River and from there, the Courtenay Estuary. By 1985, the River was as good as dead.

Attempts to deal with the disaster, including piling all the waste rock in one pile and mixing it with lime, have not worked

The copper has destroyed the fishery which used to generate \$2 million per year. It has been estimated that the cost to residents and taxpayers so far of this environmental disaster is over \$60 million.

The solution is to research and monitor water flowing from the mine to determine all the sources of contamination, to pipe the leachate from these sources to a water treatment plant, and to monitor and treat the problem in perpetuity. Despite pressure from citizens' groups, this has not yet happened. The estimate to build the treatment plant is \$6 million.

(from Saving the Tsolum River, by Father Charles A.E. Brandt, and Acid Mine Drainage, by the Environmental Mining Council of British Columbia)

North West Territories- Yellowknife - Giant Mine

The Yellowknives Dene have lived in the area now known as Yellowknife for thousands of years. The Giant Mine was first staked in 1933 and went into production in 1948. It used a roasting operation to extract gold ore, and was the last gold-roasting operation in Canada until it closed in 1999. Arsenic and sulfur dioxide were emitted during the roasting. For the first three years of operation no pollution control devices were used. An electrostatic precipitator was installed in 1951, and a baghouse dust collector in 1959.

Many areas of Yellowknife are contaminated with arsenic and heavy metals from the gold-roasting operations, but the most serious problem is the 237,343 tonnes of arsenic trioxide that were pumped underground into mined-out chambers for storage. It is known that water has begun to penetrate some of the chambers where the arsenic trioxide is stored, and pumps are required to keep it dry. If the pumps were turned off, 2000-8000 kg of arsenic trioxide would flow from the vaults into the environment. A more catastrophic event, like a tremor, could spread the health risk to the entire community of Yellowknife, Great Slave Lake and the communities downstream.

The Giant Mine has had several owners over the years, including Falconbridge and Royal Oak Mines. It is located on land owned by the government of the Northwest Territories. There was no security for cleanup and reclamation, except a \$400,000 amount set aside under the water license. In a recent agreement with Miramar, the federal government - through Indian and Northern Affairs - assumed all environmental liabilities.

A recent workshop in Yellowknife presented four alternatives for dealing with the arsenic trioxide. Three methods involved extracting the dust at costs ranging from \$143 million to \$409 million. The fourth alternative is to freeze it with thermosyphons, which would have to be replaced every 50-100 years in perpetuity. This is the cheapest alternative.

According to Kevin O'Reilly, a municipal councilor in Yellowknife, the freezing is not a viable long-term solution. He argues this option is effectively leaving the problem to a future generation to deal with.

(from information provided by Kevin O'Reilly, Canadian Arctic Resources Committee)

Yukon -Faro Mine

The tailings ponds at the Faro Mine are close to over-flowing, because of heavy snow and rain, and they regularly threaten to dump their store of acid mine drainage and toxic lead, zinc and other heavy metals into Pelly Creek. The problem is getting worse each year.

The Faro lead-zinc mine opened in 1969 and closed again in 1998. The federal government holds \$14 million in security for the estimated clean-up which is now put at over \$100 million. The mine is already creating acid mine drainage in the Rose Creek Valley, which, if left untreated, will affect fragile northern aquatic ecosystems and the aboriginal people who depend on them for hundreds of years. Current environmental liability, including perpetual water treatment, has been estimated at over \$100 million.

The Faro Mine has a checkered history. Cyprus-Anvil opened Faro in 1968. The mine was bought by Dome Canada in 1981 and was closed in 1982 due to low metal prices. The federal government funded an overburden stripping program in 1983 and 1984 to help make the property more attractive to potential buyers.

The property was sold to Curragh Resources in late 1985. It reopened with the support of a tri-partite agreement amongst Curragh, the federal and territorial government. The purchase price was effectively zero as the federal and territorial governments threw in millions in direct grants, tens of millions in the form of loan guarantees, second mortgages, road building and other incentives. The deal provided for subsidized electricity through the Northern Canada Power Commission, at approximately 80% of the generated cost. When in full operation, the mine consumed 30-40 % of Yukon's total electricity. Later bankruptcies left the utility as a major creditor. In 1992 Curragh went bankrupt as a result of their involvement in the Nova Scotia Westray disaster. The Faro mine was closed the following year.

In 1994, a receiver sold the mine to Anvil Range. Commercial production began again in November 1995 and continued until January 1997 when mining ceased. Anvil Range declared bankruptcy in April 1998.

The federal government had negotiated with Anvil Range to establish a reclamation security trust (RST) to provide funds on a sliding scale based on price of zinc, with minimum payment of \$175,000 per quarter if company had a positive cash flow. This was an amalgamation of what Curragh put in, plus \$1.5 million dollars in trusts stemming from water licenses. This Trust currently stands at \$14 million.

Lengthy negotiations between Cominco - a major creditor for Anvil range - the federal government and the Yukon government have failed to produce a solution to the problem.

(from information provided by Bob Van Dijken, Yukon Conservation Society)

Nunavut: Resolution Island – Dew Line

Resolution Island was once a US military base -- a Pole Vault radar station in the Distant Early Warning system (or "DEW Line") built during the Cold War to detect incoming Soviet missiles. Its peacetime legacy is a mix of hazardous chemicals and contaminated soil, including the highest PCB levels north of the 69th Parallel -- up to 8,000 parts per million in some spots.

Indian and Northern Affairs Canada (INAC) had committed a flexible budget of \$30-million to a clean-up project. When the site was abandoned by the US military a lot was left behind, including huge diesel tanks, residential buildings, equipment, furniture, electrical capacitors and transformers and toxics that would require special measures to remove from the soil and marine environments.

Resolution Island is contaminated with man-made materials like liquid PCBs, hydrocarbon-contaminated soil, asbestos, mercury, cobalt, aluminum and radioactive waste. More than 4,000 barrels are scattered around the site and several hundred contain leaking petroleum products. Many areas are stained from spills.

The island contains approximately 4,000 cubic metres of soil contaminated with PCBs at concentrations above the federal limit of 50 ppm. The most contaminated areas are in the so-called "S1/S4 areas" that include a valley, beach, furniture dump and buildings where PCB levels have been measured as high as 8,000 ppm.

Nunavut translates as "our land" and the new territory represents one-fifth of Canada's landmass. It contains much of the DEW Line's integrated chain of 42 radar and communication stations stretching 3,000 miles from the northwest coast of Alaska to Nunavut's eastern shore about 200 miles north of the Arctic Circle. The Resolution Island station is nestled in the Baffin Island Region, a rugged tract of mountains and rocky gorges along an extremely foggy patch of the North Atlantic Ocean.

The cleanup of Resolution Island is estimated to take five to six years since work can only be done during the warmer months of July, August and September. Meanwhile, contaminants are leaching into the soil and water, especially those that contain PCBs. These are particularly egregious given that the PCB problem is serious in the Arctic. This class of potentially carcinogenic man-made chemicals -- once used in transformers and other electronic equipment -- doesn't readily break down in the natural environment.

PCB residues evaporating and condensing from lake to lake and forest to forest leap-frog their way via the planet's complex atmospheric circulatory system up to the Arctic where they concentrate and move up the food chain in fish, seals and other creatures. The fatty tissue of polar bears and Inuit men and women (and breast milk) contain higher PCB levels than that of people in the industrial areas to the south.

CONCLUSION: THE CLEAN CANADA FUND

We are challenging the Canadian federal and provincial governments to set up a contaminated sites programme, the Clean Canada Fund, to deal with Canada's toxic shame by Canada Day 2002. It should include the following:

- Treasury Board Inventory. We applaud the inventory, but are concerned that it may measure cost only in terms of real property values and will not make effective use of the knowledge held by environmental scientists, affected communities and traditional aboriginal knowledge in assessing impacts and remediation options, including for community economic development, and health effects. We therefore recommend that a public comment period follow publication of the inventory in 2002, and that \$250,000 be made available to intervenors to hire expertise to assist them in their comments.
- Contaminated Sites Management Working Group. 1) That \$500,000 be allocated immediately to enable the CSMWG to get on with its job, and to develop a long-range plan for the clean-up of federal sites by departments, and that this sum be annualized, 2) That the CSMWG be given the responsibility for determining priority sites for clean-up across the federal government and co-ordinating the work across departments, and 3) that the CSMWG be given the responsibility for establishing effective emergency response mechanisms, including relocation of communities at risk,
- Clean Canada Fund. That an account be established with \$2 billion in start-up capital this year to begin the clean-up of priority contaminated sites, and the relocation of communities at risk (where warranted), and that the fund be partially replenished by: 1) a tax or levy on sectors which have profited from the creation of the contaminated sites (for example, orphaned mine and tailings sites, chemical research stations), 2) monies regained through settlements with polluters that can be identified, 3) sale or lease of properties that have been remediated,

- That the fund (or a more suitable fund already in existence, such as the Technology Partnerships Fund) make an annual allocation for the development and application of technologies for remediation of contaminated sites, and that evaluation of the effectiveness of the technology be part of the program;
- That research be undertaken that indicates why the contamination at each site happened, which industries benefited during the creation of the contaminated site, the extent of public investment in the site, and the resulting costs to the public of the contaminated site, so that this research may be used to inform government policy in the future in such matters as taxation of exploration and development, etc., and
- That the federal government play a leadership role with the provinces in reviving the CCME National Contaminated Sites program, or something similar.