In the days of the Soviet menace, Canada’s first defence was the DEW Line, a string of radars straddling the North. But if the project was a saviour, it was also a toxic disaster - and cleanup has been a war.

By Margo Pfeiff
Martin Allinson landed at Cape Dyer with a bang. His DC-4 came down short of the runway, bounced nearly 100 feet in the air, then limped to a halt, its wings damaged but its tires miraculously still inflated. As the 24-year-old British-born electrical engineer shakily disembarked, he gazed around at a surreal scene. Here, on a high bluff at the eastern extremity of Baffin Island, were glaciers, fjords and sheer cliffs plummeting into the sea. Here, also, was a giant white “golf ball” radar dome perched on a barren hilltop, and several massive black panels resembling drive-in movie screens. There was a warren of trucks and warehouses and two bustling, high-tech military villages housing a total of 200 men. It was July 1959, day one of Allinson’s new job as a radar and radio technician at the biggest station on the brand new Distant Early Warning Line – the DEW Line.

In the early days of the Cold War, the American military was jittery about a potential Russian invasion over the top of the globe. With help from engineering experts at MIT, they plotted a string of 63 radar installations stretching 5,000 kilometres from western Alaska to Iceland. Here, 300 kilometres north of the Arctic Circle, would be an impenetrable radar fence, intercepting incoming Soviet bombers and warning of land-based invasions.

When construction began in December 1954, the Eastern Arctic in particular was a hinterland. There were a few Hudson Bay posts and RCMP stations, but the Inuit of the area were mostly still nomadic. The DEW Line bases were, inevitably, alluring. Some Inuit visited the hectic sites to trade; others signed on as labour, joining 25,000 military and private construction workers who toiled around the clock, through buggy summers and brutal, minus-40 winters. The project was bankrolled by the American military but was under the joint control of the U.S. and Canada. It required 460,000 tonnes of supplies, shipped to the Arctic aboard squadrons of planes and fleets of ships. It was one of the biggest engineering missions ever undertaken. Just two years and eight months after the first shovel hit the tundra, the DEW Line was up and running. Most of the sites – 42 of them – were on Canadian soil. The biggest was 28,000-acre “DYE-Main,” at Cape Dyer. The DEW Line bases were, inevitably, alluring. Some Inuit visited the hectic sites to trade; others signed on as labour, joining 25,000 military and private construction workers who toiled around the clock, through buggy summers and brutal, minus-40 winters. The project was bankrolled by the American military but was under the joint control of the U.S. and Canada. It required 460,000 tonnes of supplies, shipped to the Arctic aboard squadrons of planes and fleets of ships. It was one of the biggest engineering missions ever undertaken. Just two years and eight months after the first shovel hit the tundra, the DEW Line was up and running. Most of the sites – 42 of them – were on Canadian soil. The biggest was 28,000-acre “DYE-Main,” at Cape Dyer.

When Allinson stepped off the plane at Cape Dyer, he was already familiar with the buildings. He’d just finished four months of training in identical structures set up in the cornfields of Illinois. The airport was at the lower of two bases, DYE-L, which also handled beach activity when the sealift ships arrived. The upper base, DYE-M, was the radar site, 500 metres higher. There, instruments span and swept endlessly, combing the skies for incoming Russian bombers. From up there, on a clear day, you could see Greenland, the next land. Here, 300 kilometres north of the Arctic Circle, would be an impenetrable radar fence, intercepting incoming Soviet bombers and warning of land-based invasions.

Allinson worked six days a week, spending half his nine-hour shift in front of consoles and the other half doing maintenance. An employee of Western Electric, the corporation contracted to operate the DEW Line, Allinson loved the Arctic, spending his free time hiking to a nearby glacier and making friends with the Inuit who visited Cape Dyer to trade or work. Many of the latter were “Western Eskimo employees” from the Mackenzie Delta or Alaska, who’d been south for training, mostly as heavy-equipment operators, and were familiar with white men and their wage-based economy. Allinson himself made a handsome salary: His accommodations and meals were free and he earned $840 a month. At the time, a similar job in the south would have fetched a third that much.

During Allinson’s tenure, he and his fellow DEW Liners had a mission – and it didn’t include keeping the Arctic clean. Especially in nasty winter weather, some of the men found it easier to flush PCBs down the toilet rather than dispose of them according to protocol. At the far end of every sewer pipe, the tundra became drenched with pollutants. Used truck batteries were left in mounds to rust and leach poison into the soil. Then there were bored military boys’ 45-gallon-drum-rolling competitions on a wide slope beside Cape Dyer’s radar dome. Full barrels of gasoline and lubricating oil were pitched down the hill with particular enthusiasm.

Allinson has one memory that particularly haunts him, of a six-by-six truck that flipped, spilling three tonnes of diesel fuel. At the time, his only thoughts were of righting the truck and “fiddling” the paperwork so the mishap wouldn’t have to be reported. “Back then there was no thought of having damaged the landscape,” he says.

By the time his 18-month rotation was over in November 1960, Allinson was financially flush. He could afford his dream, a river houseboat in Cambridge, England. He left the Arctic – and he and his fellow DEW Liners left behind a mess. More than half a century later, their toxic legacy is only now being cleaned up.>

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“Pretty Ugly” Cape Dyer may be scenic, but it was dirty. DEW Line site.
BY THE EARLY 1960s, with the development of submarine-launched cruise missiles and other high-tech weapons, many of the DEW Line bases were obsolete. In 1963, half the Canadian sites – the smallest ones, called “minor intermediates” – were shut down and handed to the department of Indian and Northern Affairs. Because of their size and short operating life, most were not seriously contaminated.

But 21 bigger sites stayed open, continuing to watch for invading Communists. It wasn’t until 1989, with the Cold War ebbing, that the DEW Line was decommissioned and the bases were turned over to the Department of National Defence. In 1993, the new, largely unmanned North Warning System, another joint U.S.-Canadian military venture, came online at several existing DEW Line sites. As the original bases were shuttered, military personnel, scientists and engineers began looking at what had been left behind. Greg Johnson, now the project director for the Inuit-owned company Qikiqtaaluk Environmental, remembers the first time he saw the Resolution Island DEW Line station, at the mouth of Frobisher Bay, in the late 1980s. “It was surreal,” he says. “There were still lunch trays with meals on the plates in the cafeteria, sheets on some of the beds and personal items everywhere. It’s like they had five minutes to get on the plane and everyone just left.”

It wasn’t just the plates that were dirty. Across a great Northern arc, caravans of construction equipment had simply been driven onto the sea ice and left to drop into the ocean with the spring thaw. For decades, buildings had sloughed PCB-laced paint onto the tundra. Rusting fuel drums soaked the soil with hydrocarbons, lead, mercury, asbestos, antifreeze and other agents; at some sites there were as many as 20,000 of these drums. For years, Inuit brought home tools, furniture and construction material from the abandoned sites, unaware they were contaminated. Just as bad, some of the animals they hunted had been tainted by plants growing on toxic land.

It was clear that the mess had to be fixed. The department of defence negotiated with the Inuit and by 1996 had come up with agreements for a massive cleanup of its 21 sites, by far the dirtiest on the line. At first, the American military balked when asked to pitch in, apprehensive of setting a precedent. “They didn’t want to be on the hook,” says Whitney Lackenbauer, a University of Waterloo professor who specializes in Arctic security issues. “In the end, they contributed $100 million in a roundabout deal that involved several projects. It was the first time the American military ever contributed to an environmental cleanup on international soil.”

SACRED: “Goody bags” of PCB-laced soil await shipment to southern incinerators.
Now, 77 years and $475 million later – double the original estimate – one of North America’s biggest environmental-reclamation projects, and one that few Canadians know anything about, is coming to a close. While about a dozen of the smaller DEW Line sites – the ones operated by Indian and Northern Affairs – have yet to be cleaned up, by September 2013 all the worst sites will be returned to their natural state. The final remediation work, and the most challenging, is happening at Cape Dyer.

LIEUTENANT COLONEL DAVID EAGLES, project manager for the defence department’s DEW Line Clean-up Project, stands on a high bluff where Cape Dyer looms over Davis Strait. “The toughest part of the remediation work, and the most challenging, is happening at Cape Dyer. Remediation work, and more than $40 million kilograms – will have been sealed south.

Much of that work is being done by locals – the people who suffered most from the damage. “We have about 100 employees on site, and at the moment 85 per cent are Inuit,” says Harry Flaherty, proudly. Flaherty is the president of the Qikiqtالuk Corporation; in 2011, QC’s subsidiary, Qikiqtالuk Environmental, won the $15-million contract to complete the final two years of the Cape Dyer remediation. He nods toward the soil-filled sacks – what he calls “goody bags.” “This is our backyard,” he says, “and we’re happy to be returning it to a healthy state.”

Before autumn, the bags will be shipped to incineration facilities in Cornwall, Ontario or Swan Hills, Alberta. Soil contaminated with lead will be buried in Grandes-Piles, Quebec. According to Eagles, “More contaminated soil is being transported out of DYE-Main than all the other DEW Line sites put together.” He offers a glimpse at the scope of the damage they’re dealing with: “A single truck battery left to leak will contaminate a circle two metres around and half a metre deep – enough soil to fill two bags. And there were dozens of trucks at this site alone.” By the time the DEW Line cleanup is complete, 35,000 cubic metres of waste – more than 40 million kilograms – will have been sealed south.

For a military man, Eagles, 59, is refreshingly frank and enthusiastic. He points to a vast area near the Lower Base runway where 5,000 black bags are lined up, heaped with soil polluted with PCBs. Before autumn, the bags will be shipped to incineration facilities in Cornwall, Ontario or Swan Hills, Alberta. Soil contaminated with lead will be buried in Grandes-Piles, Quebec. According to Eagles, “More contaminated soil is being transported out of DYE-Main than all the other DEW Line sites put together.” He offers a glimpse at the scope of the damage they’re dealing with: “A single truck battery left to leak will contaminate a circle two metres around and half a metre deep – enough soil to fill two bags. And there were dozens of trucks at this site alone.” By the time the DEW Line cleanup is complete, 35,000 cubic metres of waste – more than 40 million kilograms – will have been sealed south.

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Before the cleanup started in 1989, Ken Reimer, the director of environmental sciences at the Royal Military College in Kingston, Ontario, led an extensive study of DEW Line pollution and found that each PCB hazard – especially the outlets of sewer pipes – emitted a 20-kilometre-wide “halo” of toxins spread by the wind. “With the DEW Line sites 80 kilometres apart, many with Inuit settlements alongside, there was a continuous corridor of pollutants right across the Arctic and potentially in the food chain,” he says. To make sure all those pollutants are gone, the defence department will visit each site for the next 25 years, at a cost of $500,000 annually, testing for contamination.

These days, Cape Dyer is a hive of activity. At “land farms,” diesel fuel-laden soil is aerated until the hydrocarbons evaporate. Communications antennae are being chopped down. Landfill sites are being piled with less-contaminated waste; shipping everything south would simply cost too much.

When the cleanup concludes next summer, there will be a small ceremony and a plaque will be unveiled. As with most DEW Line sites, all that will remain here (besides the North Warning Site structures) will be a few small buildings that local Inuit have asked to keep as hunting shelters. At a few sites, more will be retained. For instance, at Hall Beach, where a permanent community sprang up, two communications billboards, nicknamed “Mickey Mouse ears,” will stay standing, so hunters can use them as navigational markers on the flat landscape. As well, Parks Canada will maintain several buildings there as an official heritage site.

For Martin Allinson, now 77 and living in Thailand, his brief time on the DEW Line was a high point in his life. But he also carries a sense of guilt. “As an old man I must regret our cavalier treatment of the environment,” he says. “Back then, nobody thought that maybe the little planet called Earth was too small to swallow all the wastes we were dumping on it.”

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