



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

THE **BIG** PICTURE

Contaminated Sites in the NWT



Table of Contents

Introduction	page 1	Giant Mine	page 18
Protecting the North	page 3	Kittigazuit Military Site	page 20
Taking Action	page 5	Port Radium Mine	page 22
Map of Contaminated Sites in the NWT	page 7	Rayrock Mine	page 24
Atkinson Point Military Site	page 8	Silver Bear Properties	page 26
Axe Point Military Site	page 10	Tundra Mine	page 28
Colomac Mine	page 12	What is Found at NWT Contaminated Sites	page 30
Contact Lake Mine	page 14	Other Useful Terms	page 32
Discovery Mine	page 16	For More Information	page 33

Photos : Various DIAND staff. Giant Mine photo, page 19, 3rd photo taken by Jiri Hermann.

Published under the authority of the Minister of Indian and Northern Affairs Canada, Ottawa, 2006.

www.aicn-inac.gc.ca / 1 800 567-9604 / TTY only 1 866 553-0554

QS-Y248-000-BB-A2 / Catalogue: R2-360/2006 / ISBN 0-662-69556-9

© Minister of Public Works and Government Services Canada

Cette publication peut aussi être obtenue en français.



Introduction

This booklet, *The Big Picture*, contains information related to contaminated sites in the Northwest Territories, and projects underway by the Department of Indian Affairs and Northern Development (DIAND) and their partners to clean up these sites.

You'll find information about the remediation process for contaminated sites, and descriptions of some contaminants and hazards commonly found there.

As well, *The Big Picture* contains summaries of current clean-up activities occurring at 11 of the most significant sites. Please check DIAND's NWT Contaminants and Remediation website at http://nwt-tno.inac-ainc.gc.ca/cd_e.htm for the most up-to-date information on contaminated sites in the NWT.

DIAND's Responsibility

Development in the NWT has involved many uses of the land over the years. These have included mining, oil and gas and military exercises. As well, over time these activities have fuelled our local economies by providing jobs, attracting new residents and ensuring ongoing investment in our communities. It is all part of our region's rich heritage and will continue to play a valuable role in our future.

However, many development operations in the past have also resulted in contamination that has to be dealt with today, ranging from a few barrels of oil to the 237,000 tonnes of arsenic trioxide at Giant Mine. Currently, there are approximately 660 contaminated sites and waste sites across the NWT.



Many of these sites became the Government of Canada's responsibility after private owners relinquished their properties according to the legislation of the day, or when companies went bankrupt. The properties then reverted to the Crown, and as representative of the Crown DIAND became custodian of these properties and related remediation activities.

The federal government recognizes that these contaminated sites must be cleaned up to protect the health and safety of northerners, to safeguard the environment and to restore a precious part of Canada's natural environment. And that cleanup is underway.

To guide its efforts, DIAND created the Contaminated Sites Management Policy in 2002. Today, DIAND's Contaminants and Remediation Directorate (CARD) in Yellowknife is busy overseeing the cleanup of the most significant sites in the NWT. Solid progress is being made at sites right across the North, due in large part to increasing federal funding for the remediation of contaminated sites.

But it is not enough just to clean up yesterday's messes. To ensure that land-use operations today will not result in human health or environmental hazards tomorrow, DIAND also developed new legislation and policies. These safeguard the environment and protect Canadian taxpayers from picking up the tab when private operators go bankrupt.

The federal government is committed to protecting Canada's North and the people who live here. That means cleaning up contaminated sites today and making sure they don't happen again tomorrow.





Protecting the North

DIAND recognizes that not only is it important to clean up federal contaminated sites, it is also necessary to prevent them from happening again.

Today, there is a suite of legislation protecting the North. It includes the NWT Waters Act, the Mackenzie Valley Resource Management Act and the Territorial Lands regulations. Pollution prevention and “polluter pays” are also two key elements underlying the principles of the Contaminated Sites Management Policy.

As well, because of the importance of mining to the NWT, DIAND instituted the Mine Site Reclamation Policy (MSRP) for the NWT, which reflects the Government of Canada’s commitment to ensure that new mining operations do not leave a legacy of environmental and human health hazards or a financial liability for the Canadian taxpayer.

Mining will never be a zero-impact activity. It is impossible to extract minerals from the earth and process them without affecting the nearby



environment. However, with a commitment from all stakeholders to responsible and regulated resource development, it is possible to have healthy communities, a strong economy and a vibrant mining sector.

Technologies associated with mine site remediation are continually improving, as are mining practices. For example, most mining operations now incorporate progressive remediation. This is a "clean up as you go" approach, which has become a standard operating procedure for mining in the North. This efficient, effective approach is in everyone's best interests. The Mine Site Reclamation Policy reflects this approach.



Taking Action

Once a potential contaminated site is identified, there is a clear path forward for taking action. The site must be assessed, tested and classified.

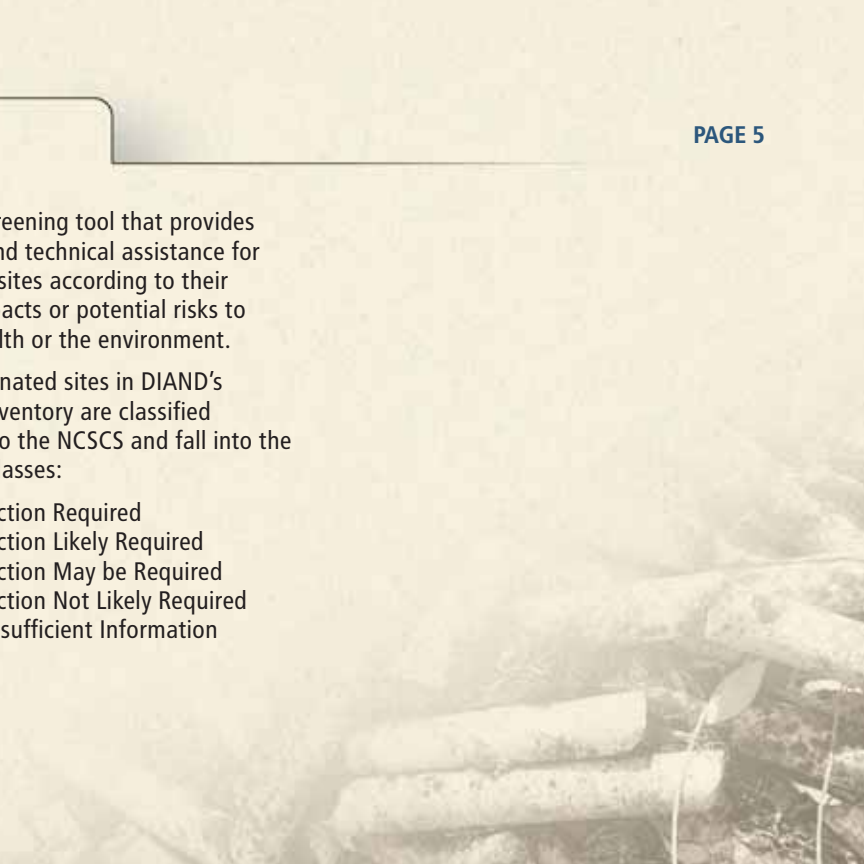
After classification, remediation options are explored. Then, a Remediation Plan is created, put through regulatory approvals, and implemented. Consulting with northerners throughout this entire process is crucial, and their input is carefully considered and included in the decision-making process.

In response to growing public concern over contaminated sites across Canada, the Canadian Council of Ministers of the Environment (CCME) created the National Contaminated Sites Classification System (NCSCS) in 1995.

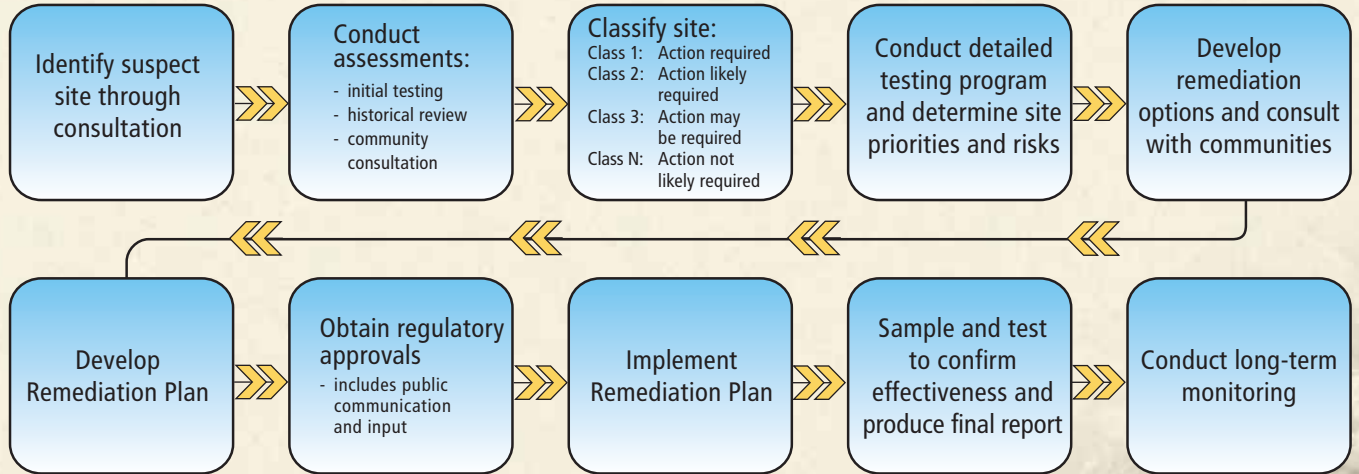
This is a screening tool that provides scientific and technical assistance for evaluating sites according to their current impacts or potential risks to human health or the environment.

All contaminated sites in DIAND's northern inventory are classified according to the NCSCS and fall into the following classes:

- Class 1:** Action Required
- Class 2:** Action Likely Required
- Class 3:** Action May be Required
- Class N:** Action Not Likely Required
- Class I:** Insufficient Information



Remediation Process

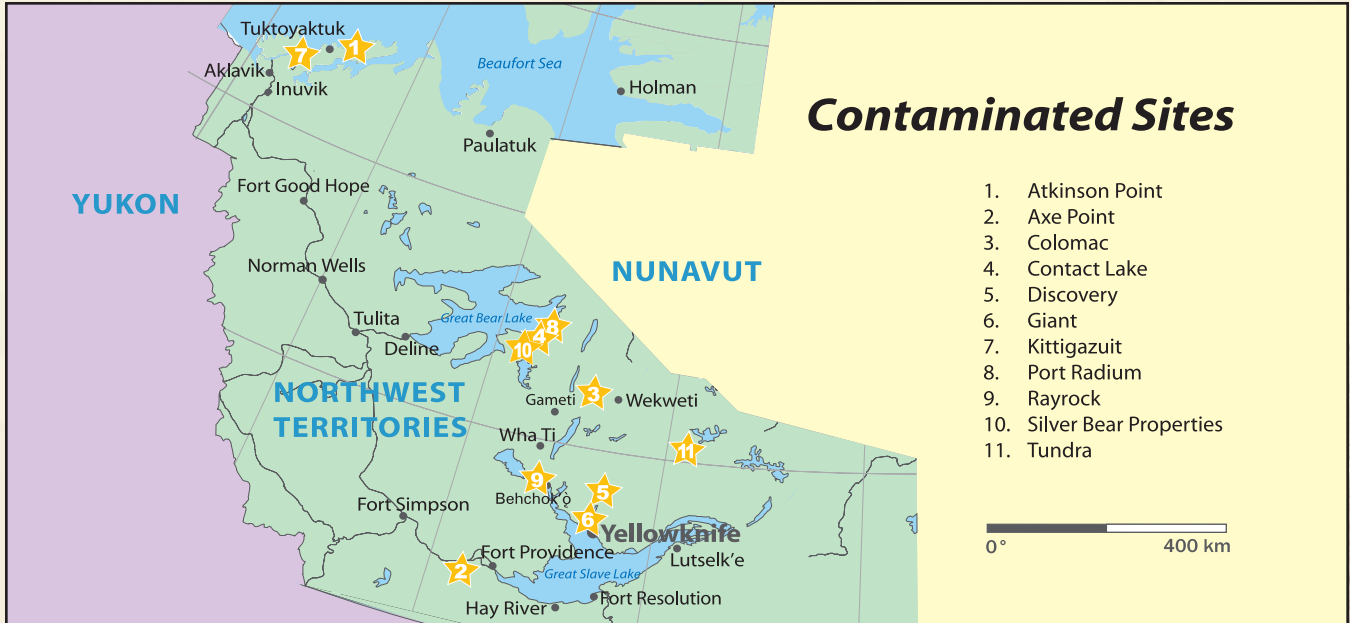


For more information about DIAND's remediation process for contaminated sites, please see:

- DIAND's Mine Site Reclamation Policy for the Northwest Territories at http://www.inac.gc.ca/ps/nap/recpolnwt/index_e.html
- DIAND's Northern Contaminated Sites Program at http://www.inac.gc.ca/ps/nap/consit/index_e.html



Contaminated Sites in the NWT



Atkinson Point Military Site





Atkinson Point Military Site

Atkinson Point, otherwise known as BAR-D, was an Intermediate Distant Early Warning (DEW) Line site located approximately 80 kilometres northeast of Tuktoyaktuk by McKinley Bay. This military radar site was constructed in 1957 and operated until 1963. The land reverted to DIAND in 1965. DIAND made the site available for scientific use by government and university groups until 1981. Several surface dispositions (permits, leases) were issued in the area of the site, including the most recent to Canadian Reindeer Ltd.

Why is it a contaminated site?

The site includes several sources of contaminants, including PCBs, heavy metals and potential hydrocarbons in soil. Several landfills, barrels and fuel tanks, as well as buildings contaminated with PCB-amended paint and asbestos remain on site.

Cleaning up the site

Some initial work was completed in 1993, in which most of the visible debris at Atkinson Point was consolidated and stockpiled. However, further detailed assessment, consultation and remediation planning is required prior to a complete Remediation Plan being developed for the site. This will then require regulatory approvals prior to commencement of any remediation work.

What activities are happening this year?

- Further assessment work will be done to determine the presence and extent of hydrocarbon contamination on site, as well as confirm metal and PCB contamination levels
- Consultation activities in affected communities will be completed to assist in the development of a Remediation Plan for the site, which will then have to go through regulatory approvals.

Axe Point Military Site





Axe Point Military Site

Axe Point is located on the Mackenzie River, 60 kilometres west of Fort Providence. The site was an airstrip, staging area and camp along the winter road to Normal Wells for the American military during World War II. The site supported the construction of the CANOL Project, an oil pipeline between Norman Wells and Whitehorse. The site was only used for a couple of years.

Why is it a contaminated site?

Investigations have found elevated levels of hydrocarbons and metals in soils and groundwater on site. Geophysical surveys have identified buried materials onsite. There are seven collapsed buildings, metal debris, a boiler, several old vehicles and old batteries at the location.

Cleaning up the site

In 2001, a general site assessment was done, which included water testing, assessing old buildings, and gathering information about contaminants on site. In 2003, more water quality testing was done, including a detailed study of possible impacts on the nearby Mackenzie River. This work was done in cooperation with the Fort Providence Resource Management Board. A traditional knowledge study was also completed to gather data on the historical and traditional uses of the site.

A Remediation Plan is currently being drafted and expected to be finalized by March 2006. It would then be submitted to the Mackenzie Valley Land and Water Board. Once regulatory approvals are

obtained, it is anticipated that remediation activities will take between two and three years to complete.

What activities are happening this year?

This year, the following activities have been planned:

- Posting warning signs and securing buildings on site
- Consultation activities to help finalize a remediation plan for the site
- Additional sampling, such as groundwater and soil data, is required to finalize remediation options
- Ongoing water quality monitoring

Colomac Mine





Colomac Mine

PAGE 13

Colomac Mine was a gold mine in operation from 1989 to 1997, located 222 kilometres northwest of Yellowknife. It is one of three mines that reverted to the Crown in 1999 when the mine's owner at the time, Royal Oak Mines Inc., went into receivership.

Why is it a contaminated site?

One of the main concerns at Colomac is "tailings water" – contaminated water produced by the processing of the gold ore. The tailings water is contaminated with cyanide, a chemical that was used to get the gold out of the ore, among other substances.

Cleaning up the site

After extensive community consultation, the remediation plan was submitted to

the Mackenzie Valley Land and Water Board in March 2004 and was approved. The plan was well received by the Tlicho communities, government and other people concerned with the project. A hydrocarbon remediation plan has also been finalized, detailing how hydrocarbon cleanup will be carried out over the next two years.

It is anticipated that the cleanup of Colomac Mine will be completed in 2010, followed by ongoing monitoring at the site for a five-year period.

What activities are happening this year?

Remediation activities are underway, in addition to ongoing care and maintenance work by Tli Cho Logistics.

- The land treatment unit is receiving contaminated material from the tank farm area. Larger rock will be washed using natural processes or directly disposed into Zone 2.5 Pit if it is non-hazardous.
- A sediment sampling program along Steeves Lake shoreline is being conducted. This will show if sediments have been impacted by hydrocarbon contamination, the source of the contamination and if micro-organisms in the sediments have been affected by contamination or are helping to treat the hydrocarbons.
- Ongoing site tours and community information sessions will be held.

Check for updates at http://nwt.inac.gc.ca/cd_e.html

Contact Lake Mine





Contact Lake Mine

PAGE 15

Contact Lake Mine is located on Contact Lake, approximately 265 kilometres east of Deline and 300 kilometres northwest of Yellowknife. It was originally a silver mine in the 1930s, but was mined for uranium from 1949 - 1950. Mining operations took place intermittently until 1980. The mine was owned by Echo Bay/Ulster Peter Ltd.

Why is it a contaminated site?

During the mine's operation, an estimated 29,100 cubic metres of waste rock and 1,450 cubic metres of processed tailings were deposited downslope of the mine site towards Contact Lake. The tailings are not contained. Surface water runs downslope from the waste rock pile, through the tailings and collects in a settling (tailings) pond. The tailings and

surface mine water have elevated levels of metals. Included on the site are a number of old buildings, mine structures and openings that pose safety hazards.

Cleaning up the site

In 1993, an environmental assessment was conducted. The activities included:

- Inventory of the buildings
- Survey of waste deposits
- Sampling of tailings and waste rock
- Collection of surface water and lake bottom sediments

In 2002 and June 2003, more water and soil sampling was conducted to further quantify and qualify the potential impacts of the mine site drainage on the surrounding environment.

In 2004, baseline studies continued, as well as posting of warning signs, additional water quality sampling and installation of groundwater monitoring wells. The wells were installed to investigate groundwater quality and determine if water is seeping from the tailings pond to Contact Lake.

What activities are happening this year?

In 2005 the water sampling program continued, and groundwater wells were sampled.

Discovery Mine





Discovery Mine

PAGE 17

Discovery Mine is a former gold mine located on the west shore of Gjaugue Lake, approximately 80 kilometres northeast of Yellowknife. Owned by Discovery Mines Ltd., it operated from 1949 to 1969 and was one of the most profitable gold mines in the country.

Why is it a contaminated site?

At closure, approximately 1.1 million tonnes of mercury-contaminated tailings were spread over 32 hectares of land and 3.7 hectares of lake sediment above the low water level. There were also contaminated soils, asbestos, lead-based paint, old buildings, mine structures and unsealed mine openings on site that posed contamination and/or safety risks.

Cleaning up the site

The Discovery Mine remediation plan was approved by the Mackenzie Valley Land

and Water Board (MVLWB) in February 2005. There were no major concerns noted through the regulatory review process.

The primary goal of the Remediation Plan is to return the site to a safe condition for hunting, trapping, and fishing, and for the protection of wildlife and the environment.

Once the remediation work is complete, it will be followed by at least five years of monitoring, including annual meetings with First Nations representatives. At the end of this period, DIAND will prepare an assessment report with recommendations to the MVLWB and the First Nations on what additional monitoring, if any, is necessary.

What activities are happening this year?

This year marks the final stage in remediation at Discovery Mine, when the majority of clean-up activities under the plan will be complete.

During the summer of 2005, the remaining exposed tailings were excavated, mine openings were sealed, buildings and equipment were demolished, and the tailings cap was repaired. As well, pit water was treated, and revegetation, flattening of pit slopes, and erosion protection around the borrow pit was completed.

The final phase, to take place in March 2006, will involve the removal of hazardous waste and closing down of the site, including remediation of the powerline.

Check for updates at http://nwt.inac.gc.ca/cd_e.html

Giant Mine





JRIB HERMANN

Giant Mine

Giant Mine began operations in 1948 and quickly became one of Canada's most prolific gold mines. Over its lifespan, Giant Mine produced more than 7 million ounces of gold and played a significant role in the economic growth of Yellowknife. This is one of three mines that reverted to the Crown in 1999 after the mine's owner at the time, Royal Oak Mines Inc., went into receivership.

Why is it a contaminated site?

The main issue at Giant is the 237,000 tonnes of toxic arsenic trioxide dust stored underground at the site. The amount is equivalent to seven and a half 11-storey office buildings. The dust was created during the gold production process, when the mined ore was roasted to release the gold. On site, there are also tailings ponds, contaminated soils,

old mine structures and other surface features that require remediation.

Cleaning up the site

The Government of Canada and the Government of the Northwest Territories signed a cooperation agreement in March 2005. Both governments have agreed to work together to develop a remediation plan that addresses the cleanup of the entire site, including the underground arsenic trioxide as well as all buildings and other surface facilities. The plan will be submitted to the Mackenzie Valley Land and Water Board.

What activities are happening this year?

Giant Mine is currently under care and maintenance to ensure protection of public health safety and the environment.

This means the site is secure and being monitored. Contaminated water in the mine is captured, pumped from the mine and treated to remove arsenic. The highly toxic arsenic trioxide dust continues to be safely stored in 15 stopes (mined out cavities) and chambers underground at the site.

There will also be additional site investigations, assessments and surface remediation activities at Giant Mine. This will include several engineering and scientific studies to assess long-term water management, tailings cover designs, sediment quality in Baker Creek, air quality and hydrogeological conditions.

Kittigazuit Military Site





Kittigazuit Military Site

PAGE 21

Kittigazuit was used as a long-range navigation site (LORAN) by the military. This was a significant LORAN site in the northern region, built in 1947 and operated from 1948 to 1950. The station was named "Yellow Beetle." The site is located near Kittigazuit Bay, between Inuvik and Tuktoyaktuk.

After the LORAN project was shut down, it was used as a waste metal depot by DIAND.

Why is it a contaminated site?

Through site assessment, it was determined there was DDT and metal contaminated soils, hydrocarbon contaminated soils and asbestos waste associated with the buildings. There was a lot of debris on site, including

unidentified barrels, decaying buildings and equipment.

Cleaning up the site

A large portion of the remediation was completed in late summer/fall of 2003 through a contribution agreement with Inuvialuit Projects Inc., a subsidiary of the Inuvialuit Development Corporation.

The second phase of clean-up occurred in 2003/04, including a major hydrocarbon delineation program to determine the volume of hydrocarbon contaminated soil. Last summer, activities focused on excavating hydrocarbon contaminated soil and placing it into sealed containers on site, and conducting a geophysical survey to confirm there are no other sources of contamination below the surface.

What activities are happening this year?

Contaminated soil on the site has been removed, and the full remediation on site has been completed. As an Annex 'R' site under the Inuvialuit Final Agreement, the land will be transferred to the Inuvialuit.

Check for updates at http://nwt.inac.gc.ca/cd_e.html

Port Radium Mine





Port Radium Mine

PAGE 23

Port Radium Mine is located on a peninsula along the eastern shore of Great Bear Lake in the Northwest Territories, 440 kilometres north of Yellowknife and 265 kilometres east of the Dene community of Déline within the Sahtu Dene and Métis traditional lands.

Beginning in 1932, the site was mined for radium used in medical research. In the early 1940s to 1960s the site was mined for uranium, used to make nuclear weapons and for nuclear power. The site was mined for silver until 1982 when it was decommissioned. Tailings were covered, mine openings were blocked, infrastructure was destroyed and all valuable equipment was removed.

The site has been reassessed and further studied since 2000, due to concerns raised

by the community of Déline. All studies and recommendations on how to address the site are done jointly by Canada and Déline.

Why is it a contaminated site?

In 1982, some additional care and maintenance activities have been identified to address health and safety concerns, including:

- Addressing mine openings
- Cutting off protruding scrap metal
- Removing the dock area

As a result of milling large amounts of silver, copper and uranium over approximately 40 years, and the milling of tailings and household wastes, some contamination of surface water, soil and vegetation remains. Contamination is localized to the site and immediately adjacent water, and consists of heavy metals, radionuclides, hydrocarbons and asbestos.

Cleaning up the site

Site remediation is planned to start in the winter of 2007, following permitting and licensing. The majority of work will be carried out from May to September 2007. Monitoring will begin at that time.

What activities are happening this year?

Studies carried out over the past five years have been summarized in a Final Report on Action Plan Activities. Released in early September 2005, the report contained many recommendations, including those for the remediation of the site. The Port Radium Remediation Plan was compiled by the joint process and finalized in the fall of 2005.

Check for updates at http://nwt.inac.gc.ca/cd_e.html

Rayrock Mine





Rayrock Mine

Rayrock Mine, located 145 kilometres northwest of Yellowknife and 74 kilometres northwest of Behchokö, was an underground uranium mine operated by Rayrock Mines Ltd. from 1957 to 1959.

Why is it a contaminated site?

During operations at Rayrock Mine, approximately 70,000 tonnes of ore were processed, yielding 207 tonnes of uranium concentrate. Radioactive tailings were deposited on land and partly flowed into three small lakes. In 1959, two tailings basins contained 70,903 tonnes of radioactive tailings that had the potential to leach materials. The mine was also a potential source of radioactive contamination through radon gas emissions from mine openings and ventilation shafts.

Cleaning up the site

The site was remediated in 1996 and 1997, following several site assessments. This work included sealing all mine openings and ventilation shafts, relocating radioactive material from the dump to the tailings piles and capping the tailings with a thick layer of silt-clay, followed by revegetation.

Long-term monitoring at the site is ensuring that radiation exposure from the site remains at a minimum.

What activities are happening this year?

The site is undergoing long-term monitoring and is being monitored annually until 2009, then once every 10 years for a further 100 years. This may change if results warrant adjustments.

Monitoring assesses the integrity of sealed mine openings, water quality and potential risks to humans.

To date, long-term monitoring results have shown that:

- Seals blocking the former mine openings are in good condition
- Fish in the area are safe to eat
- Caribou sampled in the area are within the normal range of radionuclides for the NWT
- Very little risk remains to humans from radionuclide exposure
- Water quality in Sherman Lake meets drinking water standards
- Downstream water quality is not affected by the former mine
- Alpha, Gamma and Beta Lakes are generally improving over time

Silver Bear Properties





Silver Bear Properties

The Silver Bear Properties, in the Camsell River area, include Terra Mine and four satellite mines known as Northrim, Norex, Graham Vein and Smallwood. They produced primarily silver, copper and bismuth during the 1970s and early 1980s, and operations ceased in 1985. The sites are located approximately 300 kilometres northwest of Yellowknife, near the southeast corner of Great Bear Lake. The closest Sahtu community is Déline.

Why is it a contaminated site?

There are two tailings ponds at the Silver Bear Properties, including HoHum Lake at Terra Mine and Hermandy Lake at Northrim. There are elevated levels of cadmium, lead, mercury, uranium, zinc and arsenic at the properties, as well as hazardous waste, including lab chemicals, ore concentrates and waste fuels.

Cleaning up the site

The limited remediation work done on the properties includes the placement of leaking barrels of fuel and antifreeze into new containers at Terra Mine, and the removal of PCBs from the site in 2002.

Detailed studies, conducted at the site since the early 1990s, were completed this year, and a final remediation plan is expected to be submitted to the Sahtu Land and Water Board by winter 2006 for approval. Once approved, it is expected to take four years to complete remediation work, followed by five years of monitoring at the properties.

What activities are happening this year?

This year, the Department expects to conduct the following activities:

- Determining the composition of waste oils and fuels for future incineration work
- Placing stored chemicals into sealed drums, and securing them for future removal
- Posting warning signs
- Securing buildings to address health and safety concerns
- Conducting consultations with the communities of Déline and Gameti
- Conducting detailed investigations to finalize requirements for remediation of HoHum and Hermandy Lakes, for closure of mine openings, landfill location, treatment of contaminated soils and geochemistry of waste rock and tailings

Tundra Mine





Tundra Mine

Tundra Mine is a former gold mine located 240 kilometres northeast of Yellowknife. Operations began in 1964. This is one of three mines that reverted to the Crown in 1999 when the owner of the mine at the time, Royal Oak Mines Inc., went into receivership.

Why is it a contaminated site?

Royal Oak used the site to process ore and to dispose of tailings from nearby Salmita Mine (remediated in the late 1980s). The main contaminants of concern are arsenic and metals – the majority of which are contained within the 62.4 hectares tailings containment area (TCA). The water in the TCA has elevated levels of aluminium, arsenic, chromium, manganese, copper, iron and lead. It is believed the water in the TCA

is also the source of downstream contamination.

Cleaning up the site

Tundra Mine has been in care and maintenance mode since 1999. Activities carried out have included dam repairs, geotechnical inspections, securing buildings, removal of hazardous lab wastes, posting signs and baseline monitoring studies.

A remediation plan is currently being drafted and is anticipated to be complete by the end of December 2005 and submitted to the Mackenzie Valley Land and Water Board. Once regulatory approvals are obtained, it is expected that remediation will take two years to complete, followed by five years of site monitoring.

What activities are happening this year?

The following activities are planned:

- Additional site assessments, such as water quality sampling and geotechnical assessments
- Consultations with First Nations to review potential remediation options for the site, and to finalize the remediation plan
- Analysis of the composition of hazardous material in buildings and amounts of demolition debris
- Further studies on the tailings water to finalize a treatment plan

What is Found at NWT Contaminated Sites?

A variety of substances and hazards are found at contaminated sites in the NWT. Some substances are naturally occurring but have become a problem due to development, while others were brought into the area for a specific purpose.

Below is information about some significant contaminants and hazards found at contaminated sites in the NWT.

Acid-generating waste rock and tailings: This is also commonly referred to as acid rock drainage. During mining, rock is disturbed and minerals that were contained in the rock are now exposed to oxygen and the environment. If the rocks are naturally acidic, this can lead to the creation of an acidic environment which can be transported by water.

Ammonia: This is commonly found at mine sites where cyanide is used. Ammonia occurs when cyanide breaks down (degrading), and is found in tailings and tailings water. Ammonia is also used in explosives.

Arsenic trioxide: The rock mined in Yellowknife and some other gold deposits in the NWT is rich in arsenopyrite, a mineral that has a high arsenic content. The ore in this area was roasted to release the gold. When it was roasted, arsenic was also released as a gas. The gas cooled and became arsenic trioxide dust.

Cyanide: This is a chemical added during the floatation process to separate gold from ore. Cyanide is brought to the site as a powder. After it is used in the floatation process, it ends up in tailings and tailings water.

DDT: This was a commonly used pesticide at sites to help workers deal with mosquitoes. It was brought to the site in barrels, and was used liberally.

Hazardous waste: There were other substances brought to the sites for ongoing operation. For example, several sites had on-site assay laboratories, which involved lab chemicals. Antifreeze and asbestos were also common on sites.



Hydrocarbons: This refers to all petroleum-based products, such as fuels, oil and grease. It is used at sites for heating, power generation and vehicles. If these products are not handled or stored properly, there can be leaks and spills, which contaminate soil and water.

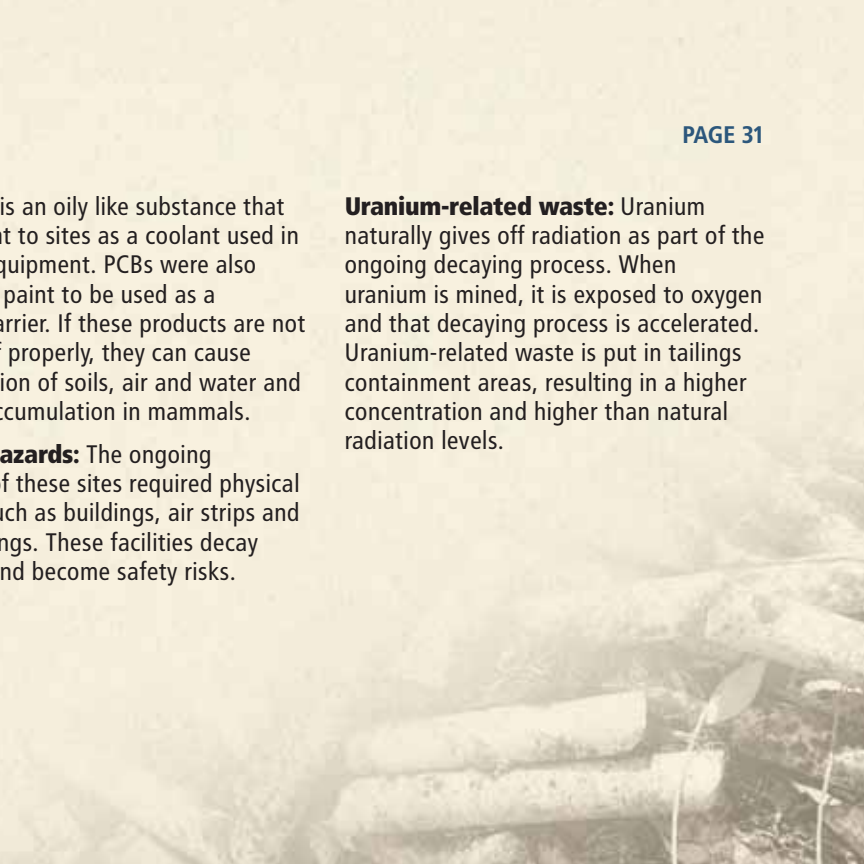
Lead: This is associated with paint, batteries and hydrocarbon use, such as leaded fuels.

Mercury: This is a chemical added during the floatation process to separate gold from ore. Mercury is brought in as a liquid. Once used, it remains a liquid and can be found in tailings and tailings water.

PCBs: This is an oily like substance that was brought to sites as a coolant used in electrical equipment. PCBs were also mixed with paint to be used as a moisture barrier. If these products are not disposed of properly, they can cause contamination of soils, air and water and cause bioaccumulation in mammals.

Physical hazards: The ongoing operation of these sites required physical facilities, such as buildings, air strips and mine workings. These facilities decay over time and become safety risks.

Uranium-related waste: Uranium naturally gives off radiation as part of the ongoing decaying process. When uranium is mined, it is exposed to oxygen and that decaying process is accelerated. Uranium-related waste is put in tailings containment areas, resulting in a higher concentration and higher than natural radiation levels.



Other Useful Terms

Contaminant: Any physical, chemical, biological or radiological substance in the air, soil or water that has an adverse effect. Any chemical substance with a concentration that exceeds background levels or which is not naturally occurring in the environment.

Contaminated Site: A site at which substances occur in amounts above what would be natural and pose, or likely will pose, a hazard to human health or the environment, or exceed levels specified in policies and regulations.

Reclamation: The process of reconvertng disturbed land to its former or other productive uses.

Remediation: The removal, reduction, or neutralization of substances, wastes or hazardous material from a site so as to prevent or minimize any adverse effects on the environment or public safety.





For More Information

For more details on any of the contaminated sites mentioned in this book or any other related questions, please contact:

Contaminants and Remediation Directorate (CARD) office

Indian and Northern Affairs Canada
NWT Region
P.O. Box 1500, Yellowknife, NT X1A 2R3
Phone: (867) 669-2699
E-mail: ntcommunications@inac.gc.ca

Some helpful websites

DIAND's NWT Regional website
<http://nwt-tno.inac-ainc.gc.ca>

Giant Mine Remediation Project
<http://www.giant.gc.ca>

DIAND's Mine Site Reclamation Policy for the Northwest Territories
http://www.ainc-inac.gc.ca/ps/nap/recpolnwt/index_e.html

DIAND's Northern Contaminated Sites Program
http://www.ainc-inac.gc.ca/ps/nap/consit/index_e.html

DIAND's Youthbuzz website
<http://nwt-tno.inac-ainc.gc.ca/youthbuzz>





Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada