

# The Heritage Silver Trail

Introduction

Cobalt's Heritage Silver Trail was first organized in 1985 with the support of the Ontario Ministry of Northern Development and Mines. Since the use of the trail is free, trail maintenance depends on donations, government grants, and many unpaid hours of work by volunteers of the Cobalt Historical Society.

In 2002 the Federal Government designated the Cobalt Camp as a National Historic Site of Canada.

The trail provides access to important sites where you can learn about the exciting history of the silver rush in Cobalt more than one hundred years ago. Each site is enhanced by signs and illustrations.

This trail booklet is designed to provide the visitor with a background of historical and technical data to enable an understanding of the history of the Cobalt Camp and the significance of the various sites along the trail.

Please note that only the officially numbered sites have been approved for public access. We are in the process of redesigning the trail. As a result you will find that there are gaps in the numbering of the trail sites in the text and on the map.

The Cobalt Historical Society is grateful for the ongoing generous support of Agnico Eagle Mines Limited. They understand the importance of mining heritage and grant us permission to enter on their property. It is important that you refrain from stepping off the paths or breaching the fence barriers. Please take out what you bring in with you or use the trash bins where available.

# A Brief History of the Cobalt Camp

Cobalt area silver was used by First Nations people at least 1,800 years ago. On the north shore of Rice Lake, southeast of Peterborough, Ontario, there lived a group that archaeologists designated as the Point Peninsula people. These people built large burial mounds at a site called the Serpent Mounds due to the snakelike formations.

In his 1972 book *Ontario Prehistory*, J. V. Wright wrote, "Items made from Ohio pipestone, Ontario silver (from Cobalt, Ontario), and a distinctive Labrador quartzite appear in the graves."

From an excavation of the Serpent Mounds conducted by the Royal Ontario Museum in 1968 and 1969, it was found that the area was the scene of annual religious gatherings for several hundred years. These events probably attracted many visitors from other areas of Ontario and beyond. It is also apparent from the diverse contents of these mounds that these people had trading relationships with people throughout North America.

Many of the silver veins in the Cobalt area come to surface and about 10,000 years ago the glaciers scrapped off much of this silver and carried it south for hundreds of kilometers. Even today, glacial silver "float" can still be found many kilometers south of Cobalt in the glacial drift. It is likely that the silver used by early indigenous people came from such glacial float, as there is no evidence of native mining activity in the area.

In 1903 the Ontario Government financed the Temiskaming and Northern Ontario Railway to access the rich farmland of the Little Claybelt just north of New Liskeard.

When construction crews arrived at Mileage 103, silver and cobalt veins were discovered in the rock nearby and what followed was the greatest silver rush the world had ever seen.



A sample of wire silver from Cobalt

# The Discovery

On August 7, 1903, two tie cutters, James McKinley and Ernest Darragh were looking for suitable timber to supply the T. & N. 0. Railway. They found "glittering rocks" on the south shore of Long Lake (re-named Cobalt Lake). Both came from the farming community of Plantagenet, Ontario and had acquired some prospecting knowledge during a previous sojourn to the gold fields of California. They had learned to test nuggets by biting them with their teeth. When they tested the "glittering rocks" they knew they had found native silver. A search of nearby outcrops disclosed the vein from which the silver came.



Left James H. McKinley and right, Ernest Darragh

After staking their claim they gathered up several bags of samples and proceeded by train to Ottawa and arranged for tests at a local laboratory. The results were not encouraging - only small amounts of bismuth were found in the samples. Still determined, the men took their samples and headed for Montreal and searched out Dr. Milton Hersey at McGill University. The assay laboratory at McGill was known for its expertise in evaluating ores of precious metals. It was a wise move; the samples assayed at 4,000 ounces of silver per ton.

McKinley and Darragh returned to Cobalt and filed their claim on August 14, 1903. In their haste they neglected to attach a map showing the location of the claim. This error caused a delay of several weeks and the claim was not officially recorded until October 6, 1903. This was almost three weeks after the Larose 'copper' find was registered. Later the same month, another silver find would be recorded and this started a great silver rush.

Legend has it that Fred Larose, the T&NO Railway blacksmith, made the discovery in 1903 thanks to a pesky fox that was bothering him. He threw his hammer at the fox, missed, but struck a nearby rock outcrop.

While retrieving his hammer he noticed fragments of a shiny coppery brown metallic mineral that was partially coated by greenish substance. Fred thought he had found copper ore.

He subsequently showed the fragments to his boss, Duncan McMartin, and they each decided to stake a claim. They recorded their copper find on September 15, 1903. Later that month their claim was carefully examined by the provincial government geologist, Dr. Willet Green Miller, who immediately recognized the copper minerals as being nickeline and annabergite and he also noticed abundant native silver that had been tarnished black.

A staking rush soon followed.



Prospectors at the Cobalt train station preparing to go in the bush

Tom Hebert, a young lumberjack from Hull, Quebec, was working for the J. R. Booth Lumber Company in the nearby Montreal River area. He learned of new job openings with the T. & N. O. Railway and decided to walk to Long Lake (Cobalt Lake) and inquire. While hiking along a high rocky ridge on the east side of the Lake he stumbled on some loose rock fragments. The pink and green colouring on the rocks attracted his attention. He placed several specimens in his packsack and proceeded northward to Haileybury and the Matabanick Hotel. He showed the rocks to hotel owner Arthur Ferland who called in some friends known for their prospecting expertise. The group immediately suspected cobalt and nickel minerals and along with Hebert formed a syndicate to stake claims. In all, they staked claims totaling 846 acres. Thrilled at this overnight success, Hebert accepted a lump sum for his share in the syndicate and returned to his home in Hull. Shortly thereafter, the syndicate sold the claims to the Nipissing Mining Company of New York for \$250,000 in cash. Nipissing would soon become the largest producer in the Cobalt Camp.



1907 T&NO station and sheds at the tracks; behind, the Cobalt Hotel is expanding to the left, and the Lyric Theatre/Opera House sits on the right. At the far right is the gambrel roof of the former Bank of Commerce.

By 1905 the rush was in full swing. People from around the world were heading here intending to reap their share of the riches. A few became fabulously wealthy. The town of Cobalt was officially incorporated in 1906 and by 1911 had a resident population of 12,000 people. Cobalt grew from a disorganized collection of tents on the side of a lake to a community with a great interest in sports and entertainment. Most mines had both hockey and baseball teams. The Cobalt Silver Kings were among the first members of the National Hockey Association, the forerunner to the NHL. The town also had many theaters including the Lyric, the Bijoux, the Orpheum, the Grand, the Idle Hour and the Classic.

But the boom has been tempered by misfortunes. In 1906 a dynamite cache exploded and destroyed a large section of the town. A fire in 1909 left 3,000 residents homeless. In the spring of 1977, fire destroyed part of the north end of town known locally as "Frenchtown."

On April 6, 1907, during an outbreak of smallpox, Dr. William Henry Drummond died of a stroke. In addition to being a doctor, he was Vice President of the Drummond Mine, and during the early twentieth century, he was the most widely read poet in the English-speaking world.

After the July 1909 fire, severe sanitation problems led to an epidemic of typhoid fever. Ten percent of the town was infected and 67 people died. In 1918, an outbreak of influenza took many more lives including soldiers returning from the Great War.

1904 was the start of serious silver mining, and 206,875 troy ounces were produced. Silver production peaked in 1911 when 31,507,791 ounces were produced. By 1922, a total of 333,402,683 ounces of silver had been shipped. After 1922, the camp gradually declined, but during the Second World War, a demand for cobalt, used to strengthen steel for weapons and munitions caused a resurrection of the camp and many mines and mills reopened to recover this formerly low value product. By 1961 silver prices rose once again and this caused a re-examination of some of the dormant properties. The last company to extract silver in any significant quantity from the mining properties of Cobalt was Agnico Eagle. The company ceased all major operations in the area in the late 1980s.



The discovery of silver in Cobalt remains the largest native silver find in North America and one of the richest silver deposits in the world.

## **Ontario's First Provincial Geologist**

The success of the early silver discoveries and the resulting growth of the Cobalt Camp can be attributed to the knowledge and effort of Dr. Willet Green Miller, Ontario's first Provincial Geologist.

Besides giving the community its name, Dr. Miller identified the important ore minerals and the structural geology of the area which exposed the great potential for finding additional ore zones.

A plaque to commemorate Dr. Miller is on display at Site 14, on Silver Street.



#### Mining Methods in the Cobalt Camp

At the very beginning of the camp, prospectors found so much rich silver ore on the surface, all that was needed to start a mine were some hand tools and dynamite. A bit of blasting and then hand sorting the rich silver into bags was all that was necessary before shipping the ore out for refining. The income from these initial shipments allowed the mine owners to invest in essential equipment that was needed to develop the mine. As digging went deeper into the ground, there was a great need for power to run drills and help pull the enormous weight of rock that was being removed.

Initially, the mines supplied their own sources of power. This was extremely expensive and tended to slow the progress of the mines. But by 1910 there were two major companies supplying the camp with electric power from generating stations on the Montreal and Matabitchuan Rivers.

In addition, the Cobalt Hydraulic Company built its famous Ragged Chutes compressed air plant, one of the largest of its kind in the world. This plant supplied compressed air to all the mines in Cobalt which greatly accelerated the development of the mines.

Miles of underground tunnels and caverns exist beneath the streets of Cobalt and the surrounding area. In the early days, the location of a shaft at a mine was based on what could be seen on the surface. The shaft was usually sunk on a vein and was followed underground by blasting horizontal openings called drifts. To search for other parallel veins, openings called crosscuts were blasted out at right angles to the drifts.



The "blow off" at the Ragged Chutes compressed- air facility. This was a tourist destination for decades. The plant is no longer in service.

Deeper down, sometimes a new shaft was started. This opening was called a winze since it did not come to surface. Vertical passages where also blasted to access the silver, or, when taken to surface, to provide ventilation or an escape way.

All the large mines in Cobalt made use of narrow-gauge railway ore-cars to move the ore from underground to the shaft to be hoisted to surface. Some were pushed by hand, and some were powered by compressed air or rechargeable batteries. Initially all ore was loaded by hand using shovels. Later, mines made use of mucking machines which were designed to mechanically load the ore into the cars.



Ore cars are on display at several sites on the Heritage Silver Trail.



## Milling Processes in the Cobalt Camp

A visitor to Cobalt will notice remains of towering concrete foundations in and around the town. These are the ruins of the big mills that dominated Cobalt's early landscape. By 1910 the area had 14 mills in operation and shipped high grade silver and mill concentrates to 9 different smelters, most of which were in Ontario. The following is a brief examination of the milling processes and the related machinery that was used in these now-silent mills.

For the first three years of the camp, high grade silver ore was simply sorted by hand, bagged and sent to an outside smelter for refining. Any low-grade material was discarded onto enormous rock dumps. In 1907, the first mills to process this lower grade ore were built. The first stage involved crushing the ore and then feeding that into stamp mills to pulverize it. A stamp mill consisted of a series of stamps made of iron, each weighing 1,300 pounds. Crushed ore was mixed with water and fed under the stamps which were raised and lowered about once every second. Some mills had as many as 80 stamps pounding away. Engines or electric motors turned a drive shaft that raised the stamps, one at a time, in a long line. They made an incredible amount of noise and only on Sunday was there any relief from their incessant banging.

Next, the pulverized ore and water mixture was fed to a gravity concentrator such as jigs or shaking tables. These produced a silver concentrate which was shipped to a smelter to produce silver bars.

The tailings or waste from the stamp mills was dumped into a nearby lake or pond. Very small particles of silver were also dumped into the lake. These fragments were known as slimes, ore that was pulverized too finely to be recovered by using gravity. In later years, some of these slimes were reprocessed using more efficient methods to recover the lost silver.

Later, stamp mills were replaced by ball mills which consisted of large rotating metal cylindrical containers partly filled with steel balls. The balls pulverized the ore more efficiently than stamps.

To address the problem of silver lost in the slimes, cyanidation was first introduced successfully in 1909 by the O'Brien Mining Company. The waste

from the gravity circuit was treated with a sodium cyanide solution that dissolved the silver. The silver was recovered from the solution as pure silver precipitate by adding zinc dust, or in later years, aluminum dust to the solution.

In 1911, the Nipissing Mill introduced a mercury treatment method to eliminate the need for shipping concentrate to a smelter. Mercury was introduced into a tube mill loaded with chert pebbles, some cyanide, and silver concentrate. The mercury amalgamated with about 97% the silver and the rest of the silver was dissolved by the cyanide. The mercury was drained off and heated to separate the silver from the mercury. The mercury was recovered and reused, and the silver was melted and poured into bars. The cyanide solution was treated as described earlier.

However, because of the high cost of mercury and other reasons, this method was discontinued in 1915. About that time, a completely different approach was perfected by mills in general—a method that didn't require cyanide or mercury.

Ground up ore from a ball mill was mixed with chemicals such as tar creosote, coal oil, or pine oil, and placed with water in floatation tanks. Air was pumped into the bottom of the tanks (cells) to make bubbles. Silver particles and other metallic mineral particles would stick to the bubbles and float to the top and were then skimmed off by paddles. This flotation concentrate was then dried and sent to a smelter to be processed into silver bars.

It is said that this method was discovered by a miner's wife when she noticed that silver dust from her husband's work clothes tended to stick to the froth at the top of her washing machine.

## Geology of the Cobalt Camp

Just like the early prospector, visitors to the Cobalt area today are confronted with a bewildering array of rocks and rock formations. Cobalt has long been a destination for geologists and geology students due to the incredible variety of rock examples to be found in the area.

The following discussion of area geology is purposely simplified and does not completely describe the actual complexities you will encounter in the field. It does explain the large, basic features of the camp and what the miners would have encountered underground as they tunneled forward in search of silver.

The Cobalt Camp is located on the Canadian Shield, a wide area of Precambrian rock that is among the oldest rock formations in the world. The base of this rock is igneous, meaning that it was formed by the cooling and crystallization of molten rock.

On top of this is a layer of sedimentary rock called the "Cobalt Group". This section is between 2.2 and 2.8 billion years old. About two billion years ago a surge of molten material from below forced its way into these rocks and formed a layer called the Nipissing Diabase. This layer has been found to be up to 335 meters thick.



Loading silver bars for shipping.

When this Nipissing Diabase cooled off and crystallized, spaces were formed between it and the host rock. Heated liquid from below periodically flowed through these spaces and various minerals that had been dissolved in this heated solution were gradually deposited to form the fabulous veins of silver of the Cobalt Camp.

To complicate matters, the ground was cracked or faulted periodically, and the layers were displaced or sometimes folded. Erosion from the glaciers of the various ice ages also carved up the terrain bringing the lower levels of diabase and igneous rock to the surface in places.

In the early days of the Camp there was much speculation concerning the origin of the deposits of silver and the possible existence of a mother lode. The mother lode theory didn't pan out as there was found to be no silver at great depth in the camp. There is still uncertainty concerning the origin of the silver; some saying it came up with the diabase sill, others believing it originated in the Keewatin interflow sediments of the igneous base layer.



Fabulous wealth - silver bars from ONE vein on the Nipissing Mine.

# The Heritage Silver Trail

#### Site 1: Townsite Mine #1 Shaft House

This property was originally owned by the Temiskaming and Northern Ontario Railway. In 1906 it was leased to the Cobalt Townsite Mining Company. Their Chief Engineer, W. S. Mitchell, designed this building as a "rockhouse", a shaft house which includes crushing and sorting facilities.

This type of structure was common to the tin mining area of Cornwall, England and the copper mines of Northern Michigan. Several structures of this type were once landmarks in the Cobalt area.

In 1914 this property was acquired by Mining Corporation of Canada Limited. By 1922 it had produced 13,000,000 troy ounces of silver. At the front of this head frame, facing the road, you will see that the ground has subsided to form a large hole. This hole leads down to the underground workings and once extended back across the highway and required extensive repairs in 1987. This subsidence was caused by early underground miners who removed too much of the ore beneath the overburden. When the remaining ore collapsed, the overburden sank into the underground workings forming a sinkhole.

The mine site is currently owned by the Ontario Northland Railway.



# Site 2: The Glory Hole

The "Glory Hole" is an open pit connected to underground workings. Ore was mined from the pit and passed downward to a level below where it was loaded into cars and trammed to the nearby Townsite shaft for hoisting to the surface. Along the walls of the Glory Hole, one gets a rare glimpse of a cross section of mine workings.



These are aerial views of the Glory Hole, above – and the Townsite Mine, Site 1, below. Photos (2014) by Dan Larocque, North Country Aerial Ltd.





## Site 3: The Mckinley-Darragh Mill Site

Silver was first discovered at this important site. The mine was named for James McKinley and Ernest Darragh who found silver on this claim in August of 1903. An earlier mill, closer to the lake, was first to operate in the summer of 1907. Its capacity was only 15 tons per day. The ruins you see here today, are from the second mill that had a capacity of 225 tons per day by the year 1913.

This was a typical "gravity mill" built on a hillside so that the feed of ore would flow downward as it passed through the plant. Crushed first by a line of pounding stamps, the pulverized ore then went to jigs, ball mills, and gravity tables. The ore came from eight shafts on the property and from the Savage Claim at Cart Lake (Site #5) by means of an aerial tramway.

The mill ceased operations in 1927 having recovered more than 13,000,000 ounces of silver.

A branch line of the Nipissing Central Railway, a streetcar service between Cobalt, Haileybury, and New Liskeard, passed right beside the mill. This privately-owned railway provided affordable and comfortable transportation until it closed in the 1930s.



McKinley Darragh Mill - note the terminus of the aerial tramway upper right and the tennis courts in front. You can just make out a road in between the courts and the facility. This was the original road that connected Cobalt to Kerr Lake. We reclaimed this road to create the John Calder Memorial Trail which connects Site 3 to Site 4, The Little Silver Vein.

## Site 4: The Little Silver Vein

This vein was discovered by lumberjack-turned-prospector Tom Hebert in the fall of 1903. He was a member of a prospecting syndicate formed by Arthur Ferland of Haileybury, and this was his third discovery. A few weeks later, the Ontario Provincial Geologist, Dr. Willet Green Miller examined this showing and described it as "a vein such as one reads of in textbooks, but which is rarely seen, being so clearly defined and so rich in contents." The vein averaged eight inches in width with vugs and branches in the wall rock and with native silver lying on the rock ledges.

The Ferland Syndicate sold this and several adjoining claims to the Nipissing Mining Company of New York. The Little Silver Vein produced 700,000 ounces of silver.

A side trail runs from the Little Silver Vein to the Nipissing 96 adit about 250m west. This adit was driven to facilitate mining of the vein which outcropped on top of the cliff above. Ice and snow that accumulates in the open-cut during winter produces a cool draft from the adit all summer long. Part way along this side trail, on the left, is a short side lane to another incomplete adit.

The John Calder Memorial Trail begins at this site. It follows the original route of the first road from Cobalt to Kerr Lake. This 0.6 km trail ends at Site 3, the McKinley Darragh mill ruins.



## Site 5: Cart Lake Tailings

This site provides a view of a tailings pond that was once Cart Lake. The tailings are mostly from the Silverfields Mill and the Summit Mine which used to be on the Silverfields Road, across the lake. This mill and shaft were operated by Teck Corporation from 1968 to 1983. The Summit shaft was originally part of the Savage claim and owned by the McKinley Darragh Savage Company. Ore from this shaft was shipped to the McKinley Darragh Mill (Site #3) via aerial tramway from 1907 to 1928.

Looking to the southwest you will see a rusty head frame on the south shore of Cart Lake. This property is the Provincial #2 shaft and was originally owned and operated by the Ontario government from 1906 to 1909. At this point, the government recognized its limited expertise in mining and sold the property to the Cobalt Provincial Mining Company and reaped the benefits of royalties on production that continued to 1924. The Provincial #2 Shaft reached a depth of 350 feet and produced 287,000 ounces of silver, 54,000 pounds of cobalt and 2,800 pounds of nickel.



The Provincial #2 Shaft photo by Ruth Bernache 1987

## Site 7: Nipissing Hill Lookout and High-Grade Mill



Nipissing Low-grade mill and aerial tramway terminal, on the right.

The lookout rests on the foundations of the Nipissing Mining Company's lowgrade mill. Built in 1912, it was the largest mill in the camp and was a classic gravity-type mill.

The company closed the mill in 1932. A year later, it burned down because of children playing with matches.

Much of the ore for the Low-Grade Mill came by a kilometer-long aerial tramway that went across Cobalt Lake, terminating at the company's property on that side of town.

As you travel up to the Lookout, you pass the foundations of the High-Grade Mill. This was constructed in 1912 to convert high grade ore and silver concentrate from the low-grade mill into silver bars.

Nipissing Hill, once covered with soil and trees, was swept clean by high pressure hydraulic hoses in order to expose silver bearing veins.

Between 1904 and 1932 the Nipissing Mining Company produced 93,000,000 ounces of silver.

## Site #8 Cobalt Lake Mine and Hellens Mill

Though silver was first found at the south end of Cobalt Lake in 1903, mining under the lake could not take place until 1906 when the Province of Ontario auctioned off the mining rights. The winner formed the Cobalt Lake Mining Company and began to mine the veins under the lake from until 1914. These veins produced close to seven million troy ounces of silver. The richest was 330m long, 130m deep, and up to 1.3m wide, found in the Cobalt Lake Fault.

Since 1907 mills deposited tailings into Cobalt Lake, and with improvements in silver recovery, companies went back and reprocessed the tailings to recover the silver earlier operations left behind. The first attempt to do this was by Mining Corporation of Canada from 1917 to 1920. The next effort was in 1951 by Hellens Mining and Reduction Co. who built a cyanide mill and processed about 110,000 tons of tailings. In 1953 Cobalt Consolidated Mining Corp. took over the Hellens operation and processed another 86,000 tons. The foundations you see at this site are the remains of that mill.



The most recent and successful reprocessing took place from 1966 to 1969 by Agnico Mines Ltd. The company drained the south end of the lake and recovered approximately 600,000 troy ounces of silver from the tailings. (see image above) The waste from this operation was placed in the north end of the lake and now forms the foundation for part of Cobalt Park.

In 1932, the Mining Corporation of Canada blasted one of the mine drifts under Cobalt Lake to recover the silver left behind in the crown pillar. This resulted in the lake and tailings draining into the old mine workings under the lake. The ore in the crown pillar had been left behind by the Cobalt Lake Mine to keep the lake from flooding the underground workings

The only artifact remaining on the site from the Cobalt Lake Mining Company's activities between 1906 and 1914 is a hoist to the west of the mill foundations. Thanks to Agnico Eagle for building the enclosure that protects the machinery.



Hellens Mill and drag line in 1953 when Cobalt Consolidated recovered tailings.



Cobalt Lake Mine original hoist house 2018

## Site 9: Right Of Way Mine

This property was originally owned by the Temiskaming and Northern Ontario Railway as their mandate reserved the mineral rights for 50 feet on both sides of their track. On September 12th, 1906, an Ottawa consortium leased this strip of ground from Mileage 101 to 105 for the sum of \$50,000 and an annual royalty of 25%. This was the Right of Way Mining Company and eventually over 2,000,000 ounces of silver were produced.

The building housing the head frame and adjoining facilities is a classic "rockhouse" like the Townsite Mine at Site #1. The ore sorted at this facility was sent to a custom mill near the south end of Cobalt Lake.

This iconic site is arguably the most photographed mining artifact in the camp, partly because it is adjacent to the bridge crossing the tracks. Every year, trainspotters wait for the perfect moment to capture the freight trains as they round the curve, next to the headframe.



The Right of Way Mine, shortly after construction in 1907

## Site 11: The Larose Mine

Legend has it that Fred Larose threw his hammer at a fox, but hit a rock instead and exposed a piece of silver. Regardless of the circumstances of how the blacksmith who worked for the Temiskaming and Northern Ontario Railway Company discovered silver, Fred was happy to sell his interest to the Timmins brothers for the tidy sum of \$30,000. He then moved to Hull, Quebec.

In 1907 Larose Mines Ltd. was incorporated to develop the property and they mined it until 1908 when the Larose Consolidated Mining Co. took over. This was followed by LaRose-Rouyn Mines Ltd. in 1926, New Larose Mining & Smelting in 1948, and then Silver Miller Mines Ltd. in 1949. Silver Miller Mines Ltd. was the last company to mine silver here. Total silver production for the Larose property was close to 17.5 million troy ounces and 200,000 pounds of cobalt.



The legendary Fred Larose

In 1972 Silver Shield Mines Inc. took over the property and all the buildings of Silver Miller Mines were demolished to make way for a proposed silver refinery and mint. Unfortunately, that never came about, and in 1975 Canadian Smelting and Refining Ltd. took the property over and built a refinery and operated here until 1982.

Then Agnico-Eagle Mines Ltd. bought them out and refined their silver there until 1989 when the company shut down all operations in the Cobalt area.



The Larose Mine, ca 1909

## Site 13: The Coniagas Shaft House #4

The Coniagas #4 shaft was sunk in 1914 to a depth of 350 feet and operated until 1924. During its operating years 1904 to 1924 the Coniagas Mine produced 32,500,000 ounces of silver. Shortly after the mine closed, the shaft house was purchased by the Giachino family and was converted to a grocery and meat market. The cool updraft from the shaft served as an excellent meat cooler for the butcher shop. Between then and today, the building has housed a wide variety of retail enterprises, some also making use of the shaft as their main cooling unit. In 2015, Agnico Eagle filled in the shaft, for safety reasons.



Antonio Giachino in front of his grocery store.

In 1919, HRH the Prince of Wales paid a visit to Cobalt. Here, the parade drives by the Coniagas Shaft when it was in use. Note the giant pile of mine waste on the right.



#### Site 14: Willet Green Miller Memorial Site

This is a site where several memorial plaques and other mining artifacts are on display. The re-purposed head frame was originally mounted on the Harrison-Hibbert shaft in North Cobalt and was functional until 1978. The owner, Pan Silver, donated the structure to the Heritage Silver Trail Committee and in 1998 it was dismantled and relocated to this site, and reconstructed as a visitor attraction.

Around the building is an exhibit of mining artifacts with accompanying signs that explain how the various items were used. These are well worth a look. The significance of the other sites on the Heritage Silver Trail becomes clearer when the visitor understands the tools and mining methods.



Pan Silver Headframe Site 14



Part of the bas-relief sculpture at Site 14

#### Site 16: The Colonial Mine Site

Discovered in 1904 by prospectors Murdy McLeod and George Glendenning, this was the first sign of silver outside the immediate Cobalt area. The claim was sold to two capitalists from North Bay who in turn sold it to the Colonial Mining Company Limited from the State of Maine.

The property was developed by several horizontal adits, a 967-foot vertical shaft, and a mill. One of the adits is currently being used for guided underground tours, available at the Cobalt Mining Museum. These tours are extremely valuable as they provide an opportunity to experience working conditions as they were in a Cobalt mine over 100 years ago. See below for details.



Contact the Cobalt Mining Museum to arrange a tour of the Colonial Mine Adit. Tours are usually offered between late June or early July and before August 15<sup>th</sup>.

Visit the museum at 24 Silver Street or call 705-679-8301 or write cobaltminingmuseum@gmail.com.



#### Site 20: The Jack Koza Park

This park is named for Jack "Jake" Koza who operated a used metal facility on this site for many years. He was also instrumental in starting up the Cobalt Mining Museum in the early 1960s.

The site contains an extensive display of mining and milling equipment with excellent and comprehensive signage that explains exactly how tools and machinery were used.



Expansion joint from the Ragged Chutes compressed air system



Drill Steel car

Jaw Crusher



Flat car

## **Glossary Of Commonly Used Mining Terms**

Adit: A passage driven horizontally into the side of a hill or cliff.

**Assay**: A chemical/metallurgical test to determine the amount of valuable metal in an ore sample.

Back: The roof or ceiling of an underground passage.

Ball Mill: A tube-type mill in which grinding is done by tumbling steel balls.

**Banjo**: A short-handled, round mouth shovel used by a miner to shovel blasted rock (muck).

Base Metal: Any non-precious and non-ferrous metal.

**Bucket**: A barrel-shaped vessel used for hoisting ore waste or water.

**Cage**: A conveyance somewhat like an elevator used to trans- port workers and equipment in a mine shaft.

Chute: A timbered opening with a gate from which broken ore is drawn.

**Claim**: A portion of land or lake staked by a prospector or mining company. In the Province of Ontario, the common size is 40 acres (1320' x 1320') or 16 hectares (400 m x 400 m).

**Country Rock**: The mass of rock surrounding a vein or ore body; also called host rock.

**Crosscut**: A horizontal underground passage that intersects a vein or ore body.

Cyanide: A chemical compound used to dissolve gold or silver.

**Deck**: The surface area around a shaft from which workers and materials are loaded in the cage.

Drift: An underground passage that follows a vein or ore zone.

Dry: A building or room where miners change their work clothes.

**Dump**: A pile of broken ore or waste rock on surface.

**Fault**: A fracture in the earth's crust along which movement or displacement has occurred.

Gangue: No value, non-metallic minerals found with ore-bearing minerals.

Glory Hole: An open pit connected to underground workings.

**Gossan**: A rusty rock formed by the weathering of iron bearing minerals in the rock.

**Headframe**: A framed structure erected over a shaft to carry the sheaves (pulleys) on which the hoisting cables run.

High Grade: Rich ore as opposed to low grade ore.

Jig: A device used to concentrate ground-up ore by pulsing water.

Lode: An ore body or mineral deposit in solid rock.

Muck: Ore or waste rock that has been broken by blasting.

Mucker: The miner that loads the broken rock into cars or buckets.

Mucking Machine: A mechanical loader to handle broken rock.

Open Stope: Mine workings (stopes) that have reached through to surface.

**Ore**: Rock containing valuable minerals which may be mined and recovered at a profit.

Overburden: The layer of material that lies over the bedrock

**Placer**: An alluvial deposit of sand and gravel containing valuable metals such as gold.

Portal: The entrance to a tunnel or adit.

Ramp: A downward-sloping passageway.

**Salting**: The act of adding metals or minerals to samples or showings to enhance their value.

Scaling: Removing loose rocks from mine openings or walls.

**Shaft**: An excavation (vertical or inclined) to find and mine ore. It is used to transport workers and materials and to ventilate underground workings.

**Shaft House**: A building over a shaft formed by enclosing the head frame. The shaft house included facilities to receive the ore from the mine. When crushing and sorting facilities are included, the building is called a **Rock House**.

**Shaking Table**: A device used to concentrate ground up ore by utilizing a shaking motion.

Slimes: A local term for tailings.

**Smelting**: The process of reducing metals from their ores by fusion, usually in large furnaces.

**Spider**: An iron spoke with a loop to hold a candle; miners wore them on their hats or stuck them into nearby timbers in the workplace.

**Stamp Mill**: An apparatus used in a mill to crush rock by descending pestles (stamps).

**Stope**: An underground excavation from which ore is extracted either above or below a level in a series of steps.

**Tailings**: Finely ground up rock left over after the minerals of interest have been removed. It has the consistency of sand or mud.

Tram: To haul or push cars containing ore or waste rock.

Vein: A crack or fissure filled with minerals.

Vug: A cavity in rock, often lined with mineral crystals.

Wall Rock: Rock on either side of a vein or ore body.

We invite you to join the Cobalt Historical Society and continue your interest in the history of the Cobalt Mining Camp. We have members from many regions in Canada, sharing our desire to continue to uncover the unique place in history that Cobalt occupies. We value your support!